centurywest
ENGINEERING CORPORATION

94 JUL -6 PM 4:39

June 24, 1994

UST Local Oversight Program
Alameda County Health Agency
Department of Environmental Health
80 Swan Way, Suite 200
Oakland, CA 94621

Attention: Ms. Susan Hugo

Subject: Report of Quarterly Ground Water Monitoring
Liquid Sugars UST Site
1275 66th Street
Emeryville, California
CWEC: 20516-001-08

Ladies and Gentlemen:

This letter report documents recent quarterly monitoring of two ground water monitoring wells at the subject site in Emeryville, California (see Figures 1 and 2). This letter report summarizes the work performed and the results of this monitoring event.

DESCRIPTION OF SAMPLING ACTIVITIES

On May 18, 1994, Century West Engineering Corporation purged and sampled monitoring wells MW-1 and MW-2. Purging and sampling of each of the wells was conducted in accordance with California LUFT Field Manual guidelines as follows:

- After unlocking and opening both of the monitoring wells on site, the water level was measured to the nearest 0.01 foot with an electronic probe.
- Using a disposable PVC bailer, a single bail of ground water was taken from both wells (MW-1 and MW-2) to check for the presence or absence of floating free product.

7950 Dublin Blvd., Suite 203 Dublin, California 94568 Phone: (510) 551-7774 FAX: (510) 551-7776

- The wells were purged of approximately three well volumes. During purging, temperature, pH, conductivity, and turbidity of the well water were periodically monitored and recorded until they stabilized. All purged water was stored onsite in a sealed 55-gallon metal drum. Ground water sampling data sheets for each well are contained in Appendix A.

- After purging the required volume, ground water was poured directly from the bailer into two one-liter amber jars and four 40-ml VOC vials. Each container was then tightly sealed with teflon lined septums, making sure that no air bubbles were present in the containers. Each container was then labeled and placed in cold storage for transport to the analytical laboratory under formal chain-of-custody.

RESULTS OF QUARTERLY MONITORING

Hydrologic Conditions

Purged water from both monitoring wells exhibited slight to moderate hydrocarbon odors and hydrocarbon sheens during sampling.

Analytical Results

Ground water samples from the two wells were analyzed for total petroleum hydrocarbons as gasoline (TPH-gas by EPA Method 5030/M8020); total petroleum hydrocarbons as diesel (TPH-diesel by EPA Method 3510 Modified); and benzene, toluene, xylenes, and ethylbenzene (BTXE by EPA Method 602/8020). Table 1 summarizes these analytical results. Laboratory data reports and chain-of-custody records are contained in Appendix B.

Table 1
SUMMARY OF GROUND WATER ANALYTICAL RESULTS
Liquid Sugars, Inc. 66th Street Site

Well Number	Sample Date	Depth to Water[1]	Constituent (ppm) TPH-gas	TPH-diesel	B	T	X	E
MW-1	04/23/93	6.72 ft	0.64	0.99	0.0063	ND(.0005)[2]	0.0025	0.0056
(West)	07/13/93	8.00 ft	0.70	1.5	0.032	0.0012	0.0110	0.0033
	11/02/93	8.95 ft	0.87	1.7	0.019	ND(.0005)	0.0044	0.0066
	02/15/94	7.91 ft	1.20	2.0	0.022	0.0018	0.0064	0.01
	05/18/94	7.65 ft	1.70	2.6[3]	0.057	0.021	0.13	0.30
MW-2	04/23/93	6.73 ft	1.10	2.1	0.320	0.0065	0.013	0.0082
(East)	07/13/93	8.38 ft	0.48	0.21	0.033	0.0025	0.0047	0.0052
	11/02/93	9.05 ft	0.43	1.8	0.016	0.0009	0.0021	0.0019
	02/15/94	6.82 ft	1.40	2.8	0.056	0.0029	0.0071	0.0075
	05/18/94	7.56 ft	0.54	3.0	0.024	0.0013	0.0034	0.0026

1 - Depth to ground water table from top of casing.
2 - Not detected above the concentration expressed in the parentheses.
3 - NET Pacific lab report states: "The positive result has an atypical pattern for Diesel analysis."

CONCLUSIONS

Ground water analytical results for the two wells continue to show low levels of fuel constituents. While the results for MW-1, the farthest downgradient of the two wells, continue to show an increase in fuel constituents, the results for MW-2 seem to be fluctuating as the ground water table depth fluctuates.

We appreciate the opportunity to provide this report for your review. Please contact us if there are questions or if additional information is required.

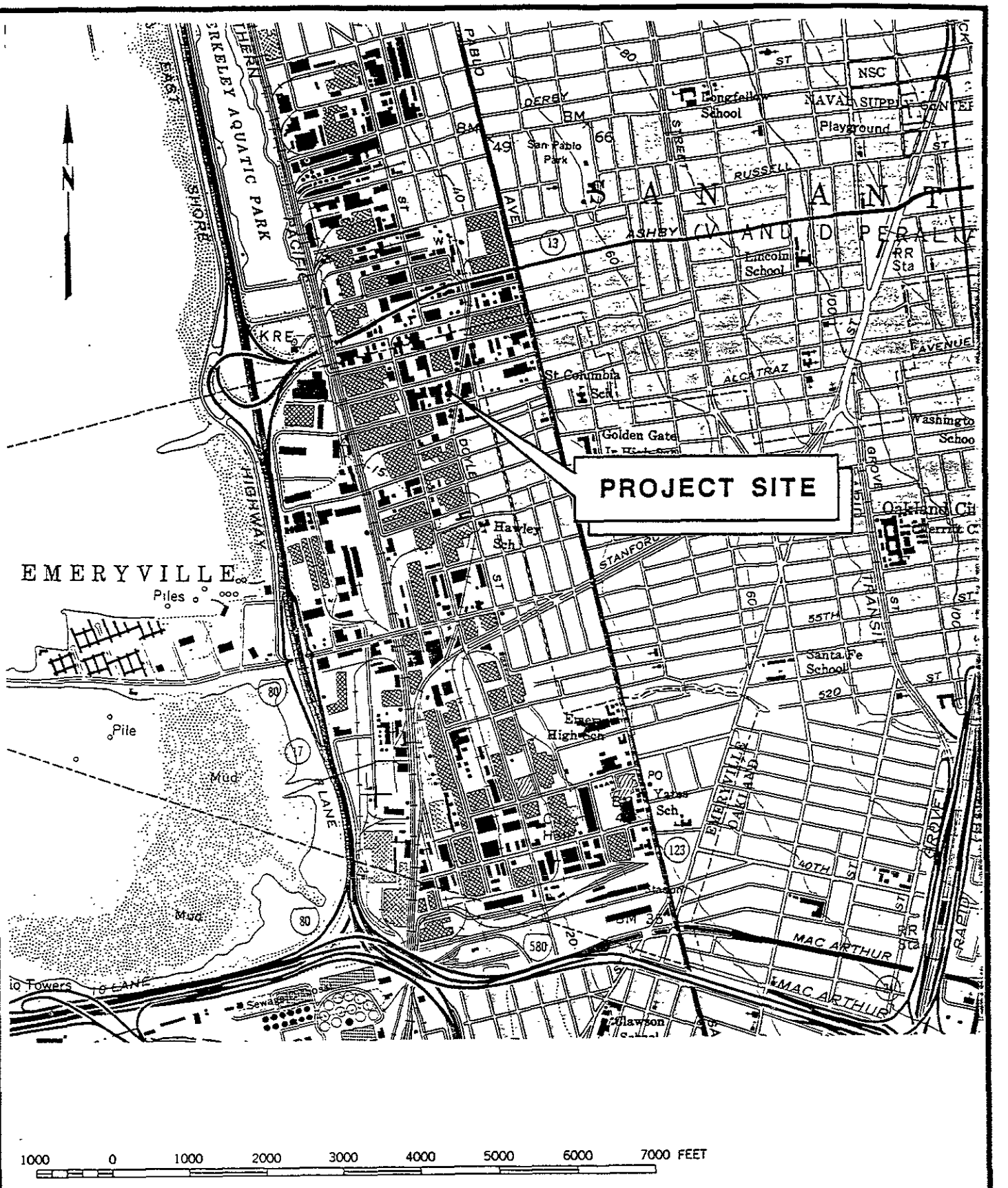
Very truly yours,

Robert Bogar
Geologist

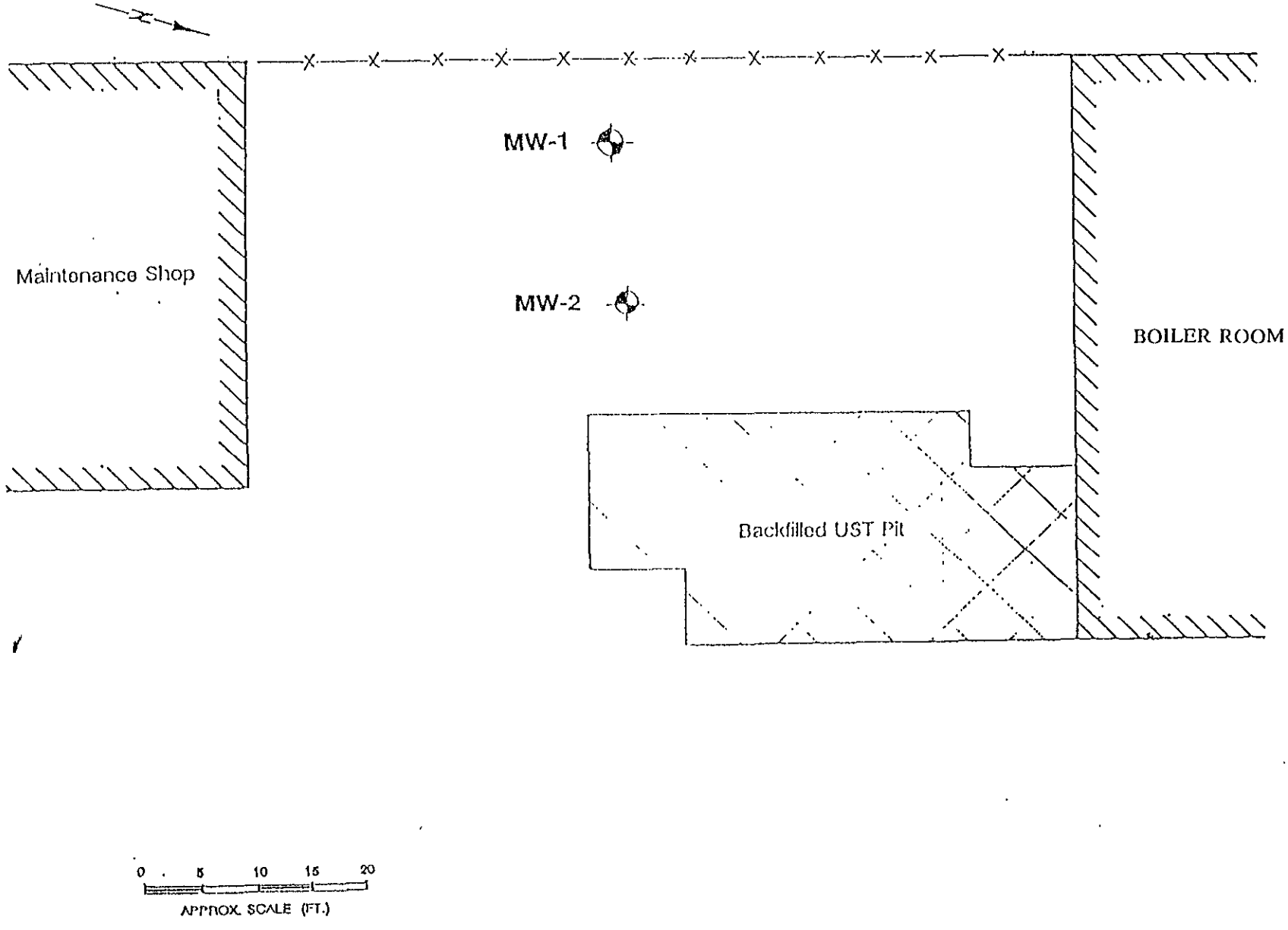
James E. Gribi
Registered Geologist
California No. 5843

RB/JEG:cc
Enclosure

cc: Mr. Alan Mooney, Liquid Sugars, Inc.



DESIGNED BY:	CHECKED BY:	**FIGURE 1**	DATE:	FIGURE:
DRAWN BY:	SCALE:	**SITE VICINITY MAP**	CENTURY WEST ENGINEERING	
DWG. NO.:		**CWEC: 20516-001-09**		



DESIGNED BY :	DATE :	CENTURY WEST ENGINEERING	**FIGURE 2** **SITE PLAN** **CWEC: 20516-001-09**	DRAWING NO.
DRAWN BY :	SCALE :			SHEET NO.
CHECKED BY :	SEC. :			
DRAWING NO. :				

APPENDIX A

GROUND WATER SAMPLING DATA SHEETS

CENTURY WEST ENGINEERING

GROUNDWATER SAMPLING RECORD

****

SAMPLE NO. MW-1 WELL NO. MW-1 (2")

PROJECT NAME 251 / 66th PROJECT NO. 20516-001-09

DATE 5/18/94 TIME _____ ELEV. TOP OF CASING _____

WELL DIAMETER _____ WELL DEPTH _____ SCREEN INTERVAL _____

H2O LEVEL INIT. 7.65' FIN. _____

CALC. PURGE H2O COL. _____ FT. (X) ** = _____ (X) 3 = _____ GALS.

LAB ANALYSIS TPH-G/BTEX ; TPH-DIESEL

LABORATORY _____ PURGE/SAMPLE METHOD _____

WEATHER CONDITIONS _____

****

TIME	VOLUME PUMPED (GALS.)	PUMP RATE (GPM)	TEMP. (C)	COND.	pH	REMARKS (TURBIDITY)
0	0		63.6	.46	6.40	CLEAR/SL HC OD/FLOCCS.
	1		64.1	.44	6.40	"
	2		63.3	.43	6.41	SL MURKY / SAME
	3		63.2	.47	6.41	SAME
	4		63.9	.46	"	"
	5		63.5	.44	"	SAME

SAMPLE CREW _____

REMARKS _____

** (2" = 0.163 GAL/FT) (4" = 0.653 GAL/FT)

Century West Engineering Corporation / Engineers and Scientists
East 429 Third Avenue / Spokane, Washington 99202 / (509) 838-3810 / Fax: (509) 624-0355

CENTURY WEST ENGINEERING

GROUNDWATER SAMPLING RECORD

****

SAMPLE NO. MW-2 WELL NO. MW-2 (4")

PROJECT NAME 151/60-54 PROJECT NO. 2057C-01/-09

DATE 5/18/94 TIME _____ ELEV. TOP OF CASING _____

WELL DIAMETER _____ WELL DEPTH _____ SCREEN INTERVAL _____

H2O LEVEL INIT. 7.56 FIN. _____

CALC. PURGE H2O COL. _____ FT. (X) ** = _____ (X) 3 = _____ GALS.

LAB ANALYSIS _____

LABORATORY _____ PURGE/SAMPLE METHOD _____

WEATHER CONDITIONS _____

****

TIME	VOLUME PUMPED (GALS.)	PUMP RATE (GPM)	TEMP. (C)	COND.	pH	REMARKS (TURBIDITY)
0	0		65.6	.39	6.40	CL/SL HC odor/SH
	4		64.4	.37	6.39	SAME
	8		63.6	.35	6.39	S. MURKY/SL OD./SH
	12		64.4	.40	6.39	SAME
	16		63.8	.46	"	"
	20		64.7	.39	6.40	"
	24		63.7	.41	6.39	"

SAMPLE CREW _____

REMARKS _____

** (2" = 0.163 GAL/FT) (4" = 0.653 GAL/FT)

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APPENDIX B

LABORATORY DATA REPORTS AND CHAIN-OF-CUSTODY RECORDS

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Jim Gribi
Century West Engineering
7950 Dublin Blvd., Ste 210
Dublin, CA 94568

Date: 06/01/1994
NET Client Acct. No: 75300
NET Pacific Job No: 94.02072
Received: 05/19/1994

Client Reference Information

LSI, Project: 20516-001-09

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Linda DeMartino
Project Coordinator

Jim Hoch
Operations Manager

Enclosure(s)

Ref: LSI, Project: 20516-001-09

SAMPLE DESCRIPTION: MW-1
Date Taken: 05/18/1994
Time Taken:
NET Sample No: 194736

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							05/27/1994
METHOD 5030/M8015	--						05/26/1994
DILUTION FACTOR*	1						05/27/1994
as Gasoline	1.7		0.05	mg/L	5030		05/26/1994
METHOD 8020 (GC,Liquid)	--						05/26/1994
Benzene	57	FC	0.5	ug/L	8020		05/27/1994
Toluene	21		0.5	ug/L	8020		05/27/1994
Ethylbenzene	300		0.5	ug/L	8020		05/27/1994
Xylenes (Total)	130		0.5	ug/L	8020		05/26/1994
SURROGATE RESULTS	--						05/26/1994
Bromofluorobenzene (SURR)	282	MI		% Rec.	5030		
						05/23/1994	
METHOD M8015 (EXT., Liquid)							05/24/1994
DILUTION FACTOR*	1						05/24/1994
as Diesel	2.6	D-	0.05	mg/L	3510		

D- : The positive result has an atypical pattern for Diesel analysis.
FC : Compound quantitated at a 10X dilution factor.
MI : Matrix Interference Suspected

Ref: LSI, Project: 20516-001-09

SAMPLE DESCRIPTION: MW-2
Date Taken: 05/18/1994
Time Taken:
NET Sample No: 194737

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed
TPH (Gas/BTXE,Liquid)							05/27/1994
METHOD 5030/M8015	--						05/27/1994
DILUTION FACTOR*	1						05/27/1994
as Gasoline	0.54		0.05	mg/L	5030		05/27/1994
METHOD 8020 (GC,Liquid)	--						05/27/1994
Benzene	24		0.5	ug/L	8020		05/27/1994
Toluene	1.3		0.5	ug/L	8020		05/27/1994
Ethylbenzene	2.6		0.5	ug/L	8020		05/27/1994
Xylenes (Total)	3.4		0.5	ug/L	8020		05/27/1994
SURROGATE RESULTS	--						05/27/1994
Bromofluorobenzene (SURR)	177	MI		% Rec.	5030		
METHOD M8015 (EXT., Liquid)						05/23/1994	05/24/1994
DILUTION FACTOR*	1						05/24/1994
as Diesel	3.0		0.05	mg/L	3510		

MI : Matrix Interference Suspected

Ref: LSI, Project: 20516-001-09

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid) as Gasoline	112.0	1.12	1.00	mg/L	05/27/1994	aal
Benzene	104.4	5.22	5.00	ug/L	05/27/1994	aal
Toluene	106.8	5.34	5.00	ug/L	05/27/1994	aal
Ethylbenzene	101.2	5.06	5.00	ug/L	05/27/1994	aal
Xylenes (Total)	100.0	15.0	15.0	ug/L	05/27/1994	aal
Bromofluorobenzene (SURR)	98.0	98	100	% Rec.	05/27/1994	aal
METHOD M8015 (EXT., Liquid) as Diesel	106.7	1067	1000	mg/L	05/24/1994	fyh

Ref: LSI, Project: 20516-001-09

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)	ND	0.05	mg/L	05/27/1994	aal
as Gasoline	ND	0.5	ug/L	05/27/1994	aal
Benzene	ND	0.5	ug/L	05/27/1994	aal
Toluene	ND	0.5	ug/L	05/27/1994	aal
Ethylbenzene	ND	0.5	ug/L	05/27/1994	aal
Xylenes (Total)	95		% Rec.	05/27/1994	aal
Bromofluorobenzene (SURR)					
METHOD M8015 (EXT., Liquid)	ND	0.05	mg/L	05/24/1994	fyh
as Diesel					

Ref: LSI, Project: 20516-001-09

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Analyst Initials
TPH (Gas/BTXE,Liquid)										
as Gasoline	97.0	119.0	20.3	1.00	ND	0.97	1.19	mg/L	05/27/1994	aal
Benzene	89.3	103.2	14.3	37.4	ND	33.4	38.6	ug/L	05/27/1994	aal
Toluene	92.1	102.6	10.7	83.2	ND	76.6	85.4	ug/L	05/27/1994	aal
METHOD M8015 (EXT., Liquid)										
as Diesel	96.1	92.0	4.4	2.06	1.4	3.38	3.24	mg/L	05/24/1994	fyh

Ref: LSI, Project: 20516-001-09

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Recovery	RPD	LCS Amount Found	LCS Amount Expected	Units	Date Analyzed	Analyst Initials
METHOD M8015 (EXT., Liquid) as Diesel	54.0		0.54	1.00	mg/L	05/24/1994	fyh

NET®

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. Do not multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
abb.93

NET NATIONAL ENVIRONMENTAL TESTING, INC.

SANTA ROSA DIVISION, 435 TESCONI CIRCLE, SANTA ROSA, CA 95401
(707) 526-7200 PHONE (707) 526-9623 FAX

9411

CHAIN OF CUSTODY RECORD

COMPANY: Century West Eng.
ADDRESS:
PHONE: FAX:
PROJECT NAME/LOCATION: LSI
PROJECT NUMBER: 20516-001-09
PROJECT MANAGER: J Orbi

SAMPLED BY: Bob Bogar (PRINT NAME) SIGNATURE: Bob Bogar
(PRINT NAME) SIGNATURE:

TURNAROUND TIME: 10 DAY (S)

ANALYSES: TPH-G/BTEX, DIESEL

DATE	TIME	SAMPLE ID/DESCRIPTION	GRAB	COMP	# OF CONTAINERS	MATRIX	PRESERVED Y/N	TPH-G/BTEX	DIESEL								COMMENTS
5/18		MW-1 (4 Voas, 2 L)			6	H2O	Y	X	X								
5/18		MW-2 (")			6	"	Y	X	X								

CUSTODY SEALED 5/18/94 @ 1640 BH
seals intact

RESULTS TO:

INVOICE TO:

Temp Recd: 0.2°C

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
Bob Bogar	5/18 3:51pm	Betty Harvey	Betty Harvey	5/18/94 1640	
RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR LABORATORY BY:
				5/19/94 0800	[illegible signature]

METHOD OF SHIPMENT: (w/ ANCS)

REMARKS:

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK