



ENVIRONMENTAL
PROTECTION
96 JUN -5 PM 1:23

Ready to evaluate for
closure once stepped soil
has been characterized +
disposed (re used).

Ms. Eva Chu
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Division
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502-6577

June 04, 1996

RE: Fourth consecutive quarter (2nd Quarter, 1996) groundwater monitoring at Geno's Country Store, 1000 North Vasco Road, Livermore, California.

Dear Ms. Chu;

This letter report provides the results of the fourth consecutive quarter (Second Quarter, 1996) sampling of the monitoring wells at Geno's Country Store, located at 1000 North Vasco Road in Livermore, California (Figure 1).

Depth to water in each monitoring well was measured to +/- 0.01 feet using a Solinst Model 101 water level meter on May 08, 1996. The depth to water was converted to potentiometric surface elevation by subtracting the measured depths to water from the casing top elevation. This information is presented below.

WELL AND GROUNDWATER ELEVATIONS
MAY 08, 1996

Well Number	Top of Casing Elevation (feet, msl)	Time of Depth measurement	Depth to Water (feet)	Groundwater Surface Elevation (feet, msl)
MW-1	526.50	07:41	8.48	518.02
MW-2	526.83	07:40	8.01	518.82
MW-3	526.00	07:42	7.40	518.60

The groundwater flow direction (more precisely direction of groundwater gradient, since the horizontal hydraulic conductivity anisotropy is unknown) for the triangle with a well at each apex is N 57° W at a gradient of 0.0068. Figure 2 is a potentiometric surface map showing well locations and groundwater surface contours as measured on May 08, 1996. Historic water level information follows.

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June 04, 1996
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MW-1	07/24/95	08:45	8.68	517.82
	11/06/95	09:00	8.75	517.75
	02/05/96	10:14	7.58	518.92
	05/08/96	07:41	8.48	518.02
MW-2	07/24/95	08:43	8.17	518.66
	11/06/95	08:56	8.35	518.48
	02/05/96	10:13	6.95	519.88
	05/08/96	07:40	8.01	518.82
MW-3	07/24/95	08:40	7.60	518.40
	11/06/95	08:58	7.96	518.04
	02/05/96	10:12	6.28	519.72
	05/08/96	07:42	7.40	518.60

GROUNDWATER FLOW DIRECTION AND GRADIENT

07/24/95 N 60° W at a gradient of 0.0065
(note typographic correction of direction from 08/16/95 report)
11/06/95 N 77° W at a gradient of 0.0072
02/05/96 N 52° W at a gradient of 0.0068
05/08/96 N 57° W at a gradient of 0.0068

AVERAGE N 60.5° W at a gradient of 0.0068

Following water level measurements the groundwater surface at each monitoring well was checked for free product, observation of sheen, and odor. No free product or sheen was found. Groundwater from monitoring well MW-1 possessed a septic odor.

The monitoring wells were purged by pumping with an "ES-60" submersible pump marketed for monitoring well purging by Enviro-Tech Services Co. of Martinez, California. Field measured water quality parameters were measured using a Cambridge Scientific Industries Hydac™ Conductivity Temperature pH Tester. Well purging activities and the field measured water quality parameters are documented in Attachment A. For each well, purging continued until specific conductance stabilized to +/- 5% on consecutive readings.

Groundwater samples for TPH-D were collected directly from the end of the pump discharge tubing at the final purging rate of about two liters per minute into a one liter amber glass bottle. Groundwater samples for TPH-G plus BTEX were collected using a pump discharge rate of less than one liter per minute in 40-mL glass vials with Teflon™ septum lids, in duplicate.

Groundwater sample bottles were labeled and placed in an ice chest with 2 Liter plastic bottles containing ice. Chain-of-Custody forms were filled out and were delivered with the ice chest to Chromalab, Inc. of Pleasanton, California, a state certified laboratory.

Groundwater samples from all three monitoring wells were found not to contain detectable concentrations of petroleum hydrocarbons. MW-1 was found to contain 220 µg/L of hydrocarbons in the diesel range that do not match the pattern of their Diesel standard. These could be organic acids or other biodegradation products or naturally occurring hydrocarbons from the soil and vegetation. The laboratory report and Chain-of-Custody documentation is contained in Attachment B. The historic groundwater sample analytical results are summarized below.

All concentrations are expressed in micrograms per liter (µg/L).

Well	TPH-D	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes
MW-1						
07/24/95	910	<50	<0.5	<0.5	<0.5	<0.5
11/06/95	<50	<50	<0.5	<0.5	<0.5	<0.5
02/05/96	<50	<50	<0.5	<0.5	<0.5	<0.5
05/08/96	228 ^{NOTE}	<50	<0.5	<0.5	<0.5	<0.5
<small>(Note: Does not match the pattern of Chromalab's Diesel standard).</small>						
MW-2						
07/24/95	<50	<50	<0.5	<0.5	<0.5	<0.5
11/06/95	<50	<50	<0.5	<0.5	<0.5	<0.5
02/05/96	<50	<50	<0.5	<0.5	<0.5	<0.5
05/08/96	<50	<50	<0.5	<0.5	<0.5	<0.5
MW-3						
07/24/95	<50	60	<0.5	<0.5	<0.5	<0.5
11/06/95	<50	<50	<0.5	<0.5	<0.5	<0.5
02/05/96	<50	<50	<0.5	<0.5	<0.5	<0.5
05/08/96	<50	<50	<0.5	<0.5	<0.5	<0.5

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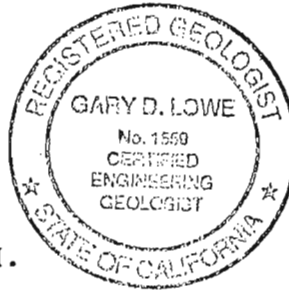
No further sampling events at Geno's Country Store, located at 1000 North Vasco Road in Livermore, California are scheduled at this time.

Please do not hesitate to call me at (510) 373-9211 should you have any questions.

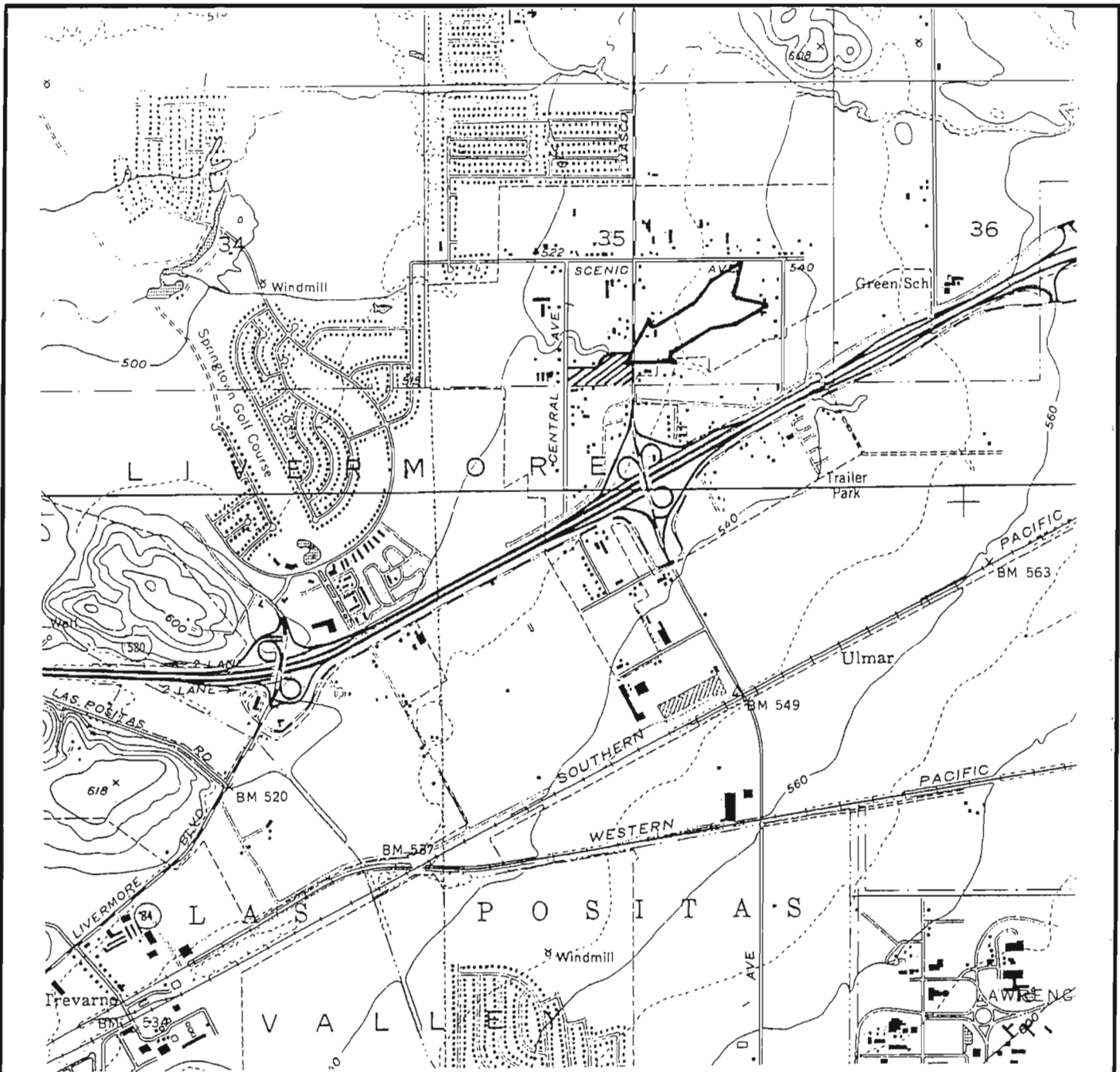
Sincerely,



Gary D. Lowe, R.G., C.E.G., C.H.
Principal, Hydrogeologist
Sole Proprietor



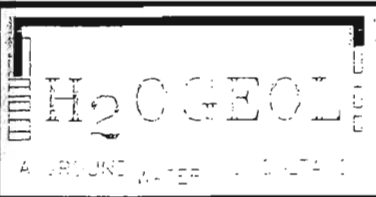
xc: Mr. Geno Macedo, Geno's Country Store, 1000 North Vasco Road,
Livermore, 94550



Base from U.S. Geological Survey Altamont 7.5 Minute Series Topographic Map



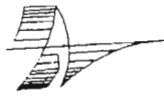
1000 0 1000 2000 3000 4000 6000 FEET



SITE LOCATION MAP
 GENO'S COUNTRY STORE
 1000 NORTH VASCO ROAD
 LIVERMORE, CALIFORNIA

FIGURE

1



SCALE: 1" = 50'

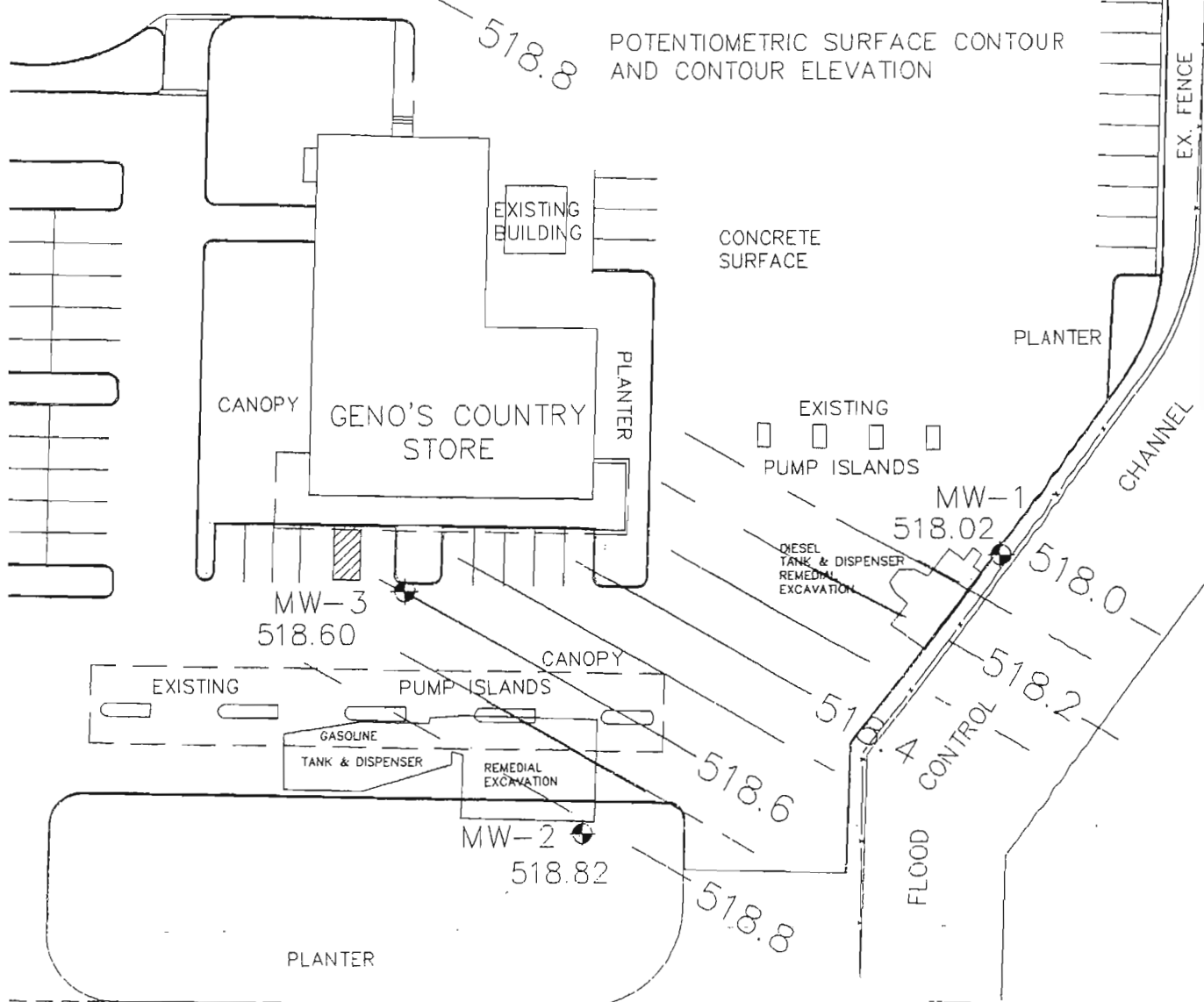
MW-1 MONITORING WELL NAME/NUMBER



MONITORING WELL LOCATION

518.02 GROUNDWATER ELEVATION AT WELL

518.8 POTENTIOMETRIC SURFACE CONTOUR AND CONTOUR ELEVATION



VASCO ROAD

POTENTIOMETRIC SURFACE MAP FOR 05/08/96



GENO'S COUNTRY STORE
1000 NORTH VASCO ROAD
LIVERMORE, CALIFORNIA

FIGURE

2



P.O.Box 2165 ■ Livermore, California 94551 ■ 510-373-9211

ATTACHMENT A

**FIELD DATA SHEET
LOG OF WELL SAMPLING ACTIVITIES**

LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW-1 Project Name: Geno's Contry Store
1000 North Vasco Road, Livermore, California Date: 05/07/96

Sampled by: G. Lowe & R. Vorst Weather Conditions: Sunny, 70°F, calm

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 15.68

Measuring Point: Top of PVC Casing Initial Depth to Water: 8.48 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 15/3.46 Well Borehole Volume: _____

Purging Method: Centrifugal Pump/Peristaltic Pump Sampling Method: Peristaltic Pump
Grundfos Submersible Pump Grundfos Submersible Pump
Centrifugal Pump/ES-60 Submersible ES-60 Pump, <1L/min. X
ES-60 Submersible Pump X Teflon Bailer

Purging Rate: See below Total Discharge: 6.5 Casing Volumes Purged: 5.65

Comments: _____

Waste Water Disposal: To property site drum.

Starting Time: 8:44

Time Pump on: 8:46

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.	Dil. Factor	S.C. (WS/cm)	Color
05/08/96	8:52	5.5	7.43	63.5		x	= 2200	Colorless
"	8:57	5.8	7.41	63.8		x	= 2120	"
"	9:00	6.0	7.41	63.8		x	= 2140	"
"	9:04	6.5	7.38	63.8		x	= 2120	"
	:					x	=	
	:					x	=	
	:					x	=	
	:					x	=	
	:					x	=	
	:					x	=	
	:					x	=	

Sample Identification: GENO/MW-1 Sample Time: 9:05

TURBIDITY ANALYSIS

Finishing Time: _____ Time Analyzed: _____ NTU Value: _____

LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW- 2 Project Name: Geno's Contry Store Date: 05/07/96
 Project Name: 1000 North Vasco Road, Livermore, California

Sampled by: G. Lowe & R. Vorst Weather Conditions: Partly cloudy, 67°F, calm

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 19.26

Measuring Point: Top of PVC Casing Initial Depth to Water: 8.01 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 1.16 / 3.48 Well Borehole Volume: _____

Purging Method: Centrifugal Pump/Peristaltic Pump Sampling Method: Peristaltic Pump
Grundfos Submersible Pump Grundfos Submersible Pump
Centrifugal Pump/ES-60 Submersible ES-60 Pump, < 1L/min. X
ES-60 Submersible Pump X Teflon Bailor

Purging Rate: See below Total Discharge: 6.0 Casing Volumes Purged: 5.17

Comments: _____

Waste Water Disposal: To property site drum.

Starting Time: 8:18

Time Pump on: 8:21

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.	Dil. Factor	S.C. (µS/cm)	Color
05/07/96	8:26	4.2	7.32	62.4		x	= 3340	Colorless
"	8:29	5.1	7.34	62.6		x	= 3280	"
"	8:31	5.5	7.28	63.1		x	= 3290	"
"	8:34	5.8	7.32	63.2		x	= 3320	"
"	8:36	6.0	7.30	63.3		x	= 3330	"
	:					x	=	
	:					x	=	
	:					x	=	
	:					x	=	
	:					x	=	
	:					x	=	

Sample Identification: GENO/MW- 2 Sample Time: 8:39

TURBIDITY ANALYSIS

Finishing Time: 8:44 Time Analyzed: _____ NTU Value: _____

LOG OF WELL SAMPLING ACTIVITIES

Well Identification: MW- 3 Project Name: Geno's Conutry Store Date: 05/08/96
 Project Name: 1000 North Vasco Road, Livermore, California

Sampled by: G. Lowe & R. Vorst Weather Conditions: _____

Well Location: _____ Well Casing Diameter: 2-inch Depth of Well Casing: 15.05

Measuring Point: Top of PVC Casing Initial Depth to Water: 7.40 Final Depth to Water: Not measured

Casing Volume (1 vol./ 3 vol): 1.22 / 3.67 Well Borehole Volume: _____

Purging Method: Centrifugal Pump/Peristaltic Pump Sampling Method: Peristaltic Pump
Grundfos Submersible Pump Grundfos Submersible Pump
Centrifugal Pump/ES-60 Submersible ES-60 Pump, <1L/min. X
ES-60 Submersible Pump X Teflon Bailer

Purging Rate: See below Total Discharge: 6.0 Casing Volumes Purged: 4.92

Comments: _____

Waste Water Disposal: To property site drum.

Starting Time: 7:45

Time Pump on: 7:56

Date	Time	Gal. Purged	pH	T deg. F	Diluted S.C.	Dil. Factor	S.C. (uS/cm)	Color
05/08/96	8:00	4.1	6.44	62.1		x	2980	11 yellow
"	8:02	5.0	6.41	64.3		x	3080	" "
"	8:03	5.3	6.40	64.1		x	3080	" "
"	8:05	5.7	6.63	63.7		x	3020	" "
"	8:07	5.9	6.66	63.9		x	3010	" "
"	8:09	6.0	6.52	63.7		x	3050	" "
	:					x		
	:					x		
	:					x		
	:					x		
	:					x		

Sample Identification: GENO/MW- 3 Sample Time: 8:10

TURBIDITY ANALYSIS

Finishing Time: 8:18 Time Analyzed: _____ NTU Value: _____



P.O.Box 2165 ■ Livermore, California 94551 ■ 510-373-9211

ATTACHMENT B

LABORATORY ANALYTICAL RESULTS
AND CHAIN-OF-CUSTODY DOCUMENTATION

CHROMALAB, INC.

Environmental Services (SDB)

May 22, 1996

Submission #: 9605571

H20GEOL

Atten: Gary Lowe

Project: GENO'S COUNTRY STORE
Received: May 8, 1996

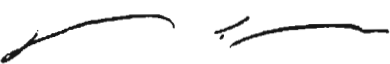
re: 3 samples for TPH - Diesel analysis.
Method: EPA 3510/8015M


Sampled: May 8, 1996 Matrix: WATER Extracted: May 13, 1996
Run#: 1366 Analyzed: May 15, 1996

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
84286	GENO/MW-1	220	50	N.D.	87.5	1
<i>Note: Hydrocarbon reported does not match the pattern of our Diesel standard.</i>						
84290	GENO/MW-3	N.D.	50	N.D.	87.5	1

Sampled: May 8, 1996 Matrix: WATER Extracted: May 13, 1996
Run#: 1366 Analyzed: May 16, 1996

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
84288	GENO/MW-2	N.D.	50	N.D.	87.5	1


Dennis Mayugba
Chemist


Alex Tam
Semivolatiles Supervisor

571/84286-84290

27701

H ₂ OGEOL A GROUNDWATER CONSULTANCY					CHAIN OF CUSTODY					
P.O. BOX 2165 LIVERMORE, CALIFORNIA 94551-2165					DATE: 05/08/96 PAGE 1 of 1 Sample Source: Geno's Country Store 1000 North Vasco Road Livermore, California					
SAMPLER(S): Gary D. Lowe & Richard Vorst										
SAMPLER'S SIGNATURE: <i>[Signature]</i>					ANALYTE					
SAMPLE RECEIPT: TOTAL No. of CONTAINERS <u>9</u> CHAIN OF CUSTODY SEALS <u>NO</u> REC'D GOOD CONDITION/COLD <u>Y</u> CONFORMS TO RECORD <u>Y</u> LAB NO. _____ SUBM #: 9605571 REF: GC CLIENT: H2OGEOL DUE: 05/22/96 REF #: 27701					Total Petroleum Hydrocarbons as Diesel (EPA 3550/8015)	Total petroleum Hydrocarbons as Gasoline + BTEX (EPA 5030/8015M + 8020/502)				NUMBER OF CONTAINERS
FAX RESULTS TO (610) 373-9222										
SAMPLE ID.	DATE	TIME	MATRIX	LAB ID.						
<i>Cook</i> MW-1	5/8/96	09:05	WATER		X	X			3	
<i>Cook</i> MW-2	5/8/96	08:39	WATER		X	X			3	
<i>Cook</i> MW-3	5/8/96	08:10	WATER		X	X			3	
Please note special pricing per Gary Cook. .10-Day TAT.										
RELINQUISHED BY:					RELINQUISHED BY:					
SIGNATURE <i>[Signature]</i>					SIGNATURE <i>[Signature]</i>					
PRINTED NAME Gary D. Lowe					PRINTED NAME _____					
COMPANY H ₂ OGEOL					COMPANY H ₂ OGEOL					
RECEIVED BY:					RECEIVED BY LABORATORY::					
SIGNATURE _____					SIGNATURE <i>Mimie Pak</i>					
PRINTED NAME _____					PRINTED NAME <i>Mimie Pak</i>					
COMPANY H ₂ OGEOL					COMPANY Chromalab, Inc.					