

90 AUG 30 PM 4:47

Project No.  
3174.3.050.01

August 17, 1999

Mr. Dick Alford  
Livermore Valley Joint Unified School District  
685 East Jack London Boulevard  
Livermore, CA 94550

*For the 1st time, MW-4 got hits  
of TPH (120 ppb) and benzene (89 ppb)*

Subject: Maintenance Yard  
2900 Ladd Avenue  
Livermore, California

## REPORT ON GROUND-WATER SAMPLING

Dear Mr. Alford:

ENGEO Incorporated is pleased to provide the results from the most recent sampling and laboratory testing of the ground-water monitoring wells located at 2900 Ladd Avenue in Livermore, California. This report presents the results of the August 1999 sampling event. The scope of services included the following:

- Purging of the three monitoring wells with the recovery of a ground-water sample from each of the wells.
- Laboratory analysis of the ground-water samples for TPH as gasoline; benzene, toluene, ethyl benzene and xylenes (BTEX); and methyl t-butyl ether (MtBE).
- Preparation of this letter report.

### GROUND-WATER SAMPLING

Fieldwork was conducted on August 5, 1999. The depth to the top of the ground water was verified and the wells were checked for the presence of free product or petroleum sheen. No free product or sheen was observed. Prior to sampling, approximately four casing volumes of water were removed from the wells using a submersible electric pump. Water quality parameters including temperature, pH, and conductivity were monitored to allow for adequate purging. The ground-water samples were collected for laboratory testing using a disposable polyethylene bailer. The samples were then decanted into pre-cleaned laboratory glassware and cooled in an ice chest until delivery under a documented chain-of-custody to Chromalab, Inc., in Pleasanton, California. The well sampling information forms and the chain-of-custody are provided as attachments.

LABORATORY ANALYSIS

The ground-water samples were tested for total petroleum hydrocarbons as gasoline TVPH(g); benzene, toluene, ethyl benzene and xylenes (BTEX); and methyl t-butyl ether (MtBE). A copy of the laboratory test report is provided as an attachment. Table I provides a summary of the laboratory test results.

TABLE I  
 Laboratory Analysis Summary  
 (Concentrations reported in parts per billion)

	DTW	TVPHg	B	T	E	X	MtBE
<b>MW2</b>							
4/20/93	30.81	4,500	340	110	8.0	630	NT
5/12/94	31.12	7,000	520	220	35	410	NT
2/8/95	28.04	170	8.9	4.5	2.1	17	NT
5/23/95	17.77	<50	<0.5	<0.5	<0.5	<0.5	NT
9/20/95	25.55	8,400	2,500	1,200	180	940	NT
12/29/95	20.91	640	0.7	<0.5	1.9	4.7	NT
11/01/96	22.63	1600	390	140	25	120	NT
4/29/97	20.39	4900	640	240	83	200	<250
<b>8/05/99</b>	<b>26.18</b>	<b>3000</b>	<b>1100</b>	<b>370</b>	<b>97</b>	<b>240</b>	<b>&lt;25</b>
<b>MW3</b>							
7/12/94	38.76	<50	<0.5	<0.5	<0.5	<0.5	NT
2/8/95	27.08	<50	<0.5	<0.5	<0.5	<0.5	NT
5/23/95	17.28	<50	<0.5	<0.5	<0.5	<0.5	NT
9/20/95	25.06	<50	1.4	<0.5	<0.5	<0.5	NT
12/29/95	20.25	50	1.8	<0.5	<0.5	<0.5	NT
11/01/96	22.22	<50	<0.5	<0.5	<0.5	<0.5	NT
4/29/97	20.05	<50	1.7	<0.5	<0.5	<0.5	<5.0
<b>8/05/99</b>	<b>26.07</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>0.70</b>	<b>&lt;5.0</b>
<b>MW4</b>							
7/12/94	39.50	<50	<0.5	<0.5	<0.5	<0.5	NT
2/8/95	27.66	<50	<0.5	<0.5	<0.5	<0.5	NT
5/23/95	17.68	60	<0.5	<0.5	<0.5	<0.5	NT
9/20/95	25.81	<50	<0.5	<0.5	<0.5	<0.5	NT
12/29/95	20.90	<50	<0.5	<0.5	<0.5	<0.5	NT
11/01/96	22.84	<50	2.7	<0.5	<0.5	<0.5	NT
4/29/97	20.57	<50	2.6	<0.5	<0.5	<0.5	9.2
<b>8/05/99</b>	<b>26.64</b>	<b>120</b>	<b>59</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>19</b>

DTW: Depth to water (ft.) measured from top of casing (TOC).  
 NT: Not Tested

Livermore Valley Joint Unified School District  
Maintenance Yard, 2900 Ladd Avenue  
REPORT ON GROUND-WATER SAMPLING

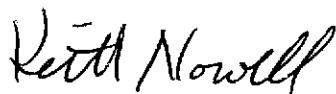
3174.3.050.01  
August 17, 1999  
Page 3

The next sampling episode is scheduled for November 1999. With your authorization, a copy of this report has been provided to Ms. Eva Chu with the Alameda County Department of Environmental Health. We appreciate the opportunity to be of continued service to you on this project. If you have any questions, please contact our office.

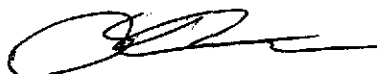
Very truly yours,

ENGEO INCORPORATED

Reviewed by:



Keith Nowell  
Staff Geologist



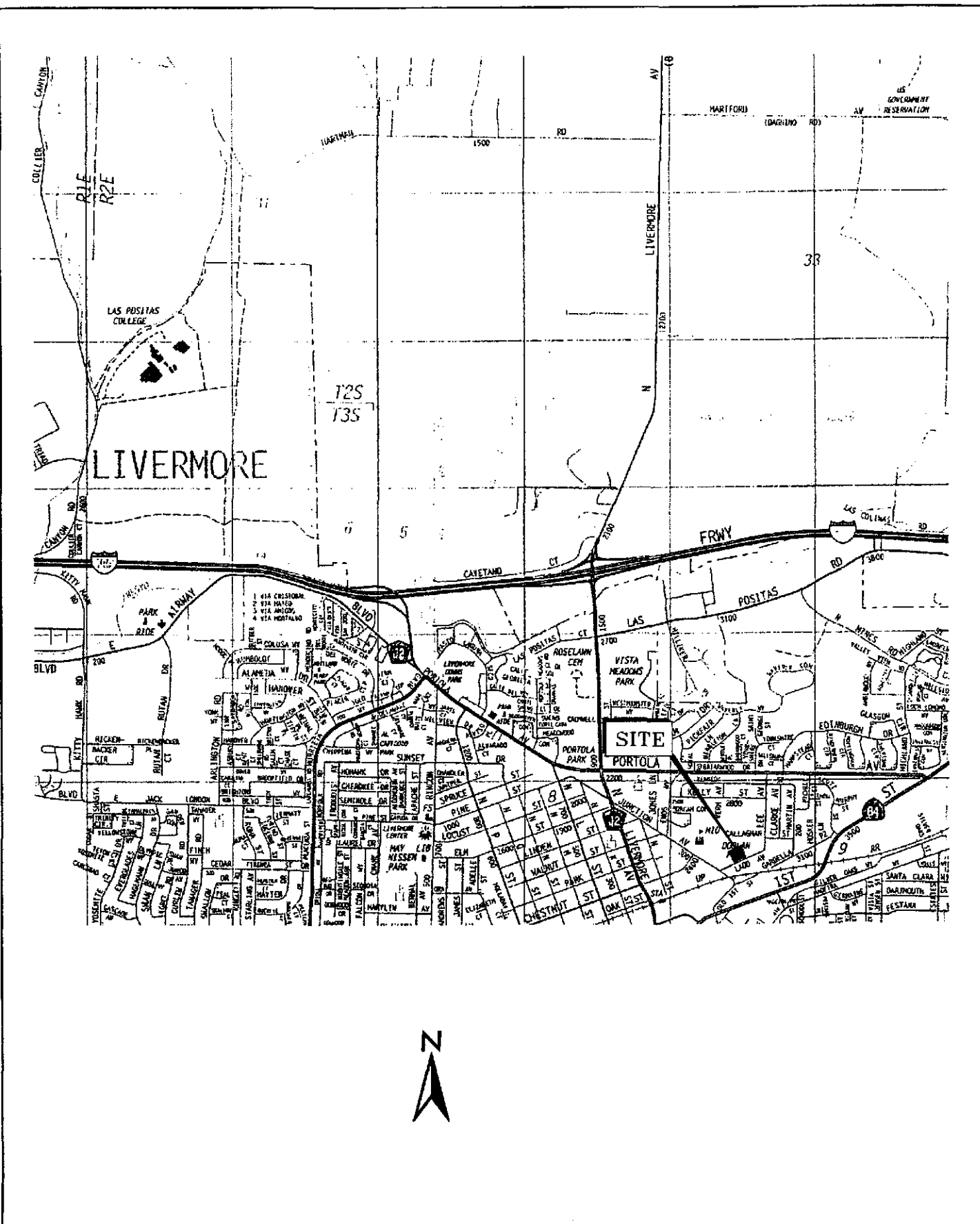
Shawn Munger  
Principal CHG 413

kn/ja:ground

Attachments: Figure 1 - Site Location  
Figure 2 - Monitoring Well Locations  
Ground-Water Sampling Information Forms  
Chromalab, Inc., Report  
Chain-of-Custody

cc: 1 - Ms. Eva Chu, Alameda County Department of Environmental Health

COPYRIGHT © 1999 BY ENGEO INCORPORATED. THIS DOCUMENT MAY NOT BE REPRODUCED IN WHOLE OR IN PART BY ANY MEANS WHATSOEVER, NOR MAY IT BE QUOTED OR EXCERPTED WITHOUT THE EXPRESS WRITTEN CONSENT OF ENGEO INCORPORATED.



SOURCE: THOMAS BROTHERS



**SITE LOCATION**  
**L.V.J.U.S.D. MAINTENCE YARD**  
**2900 LADD AVENUE**  
**LIVERMORE, CALIFORNIA**

PROJECT NO.: 3174.3.050.01  
 DATE: AUGUST 1999  
 DRAWN BY: *[Signature]* CHECKED BY: *[Signature]*

N.T.S.  
 FIGURE NO.  
**1**

COPYRIGHT © 1999 BY ENGEO INCORPORATED. THIS DOCUMENT MAY NOT BE REPRODUCED IN WHOLE OR IN PART BY ANY MEANS WHATSOEVER, NOR MAY IT BE QUOTED OR EXCERPTED WITHOUT THE EXPRESS WRITTEN CONSENT OF ENGEO INCORPORATED.

G	ND
B	ND
T	ND
E	ND
X	0.70
MtBE	ND

MW3  
(71.86)

$i=0.016$

APPROXIMATE DIRECTION OF  
GROUNDWATER FLOW (8-5-99)

G	120
B	59
T	ND
E	ND
X	ND
MtBE	19

MW4  
(72.58)

B9

B10

PLAYING  
FIELDS

FENCE

B-7

(73.82)

B-5/MW2

G	3,000
B	1,100
T	370
E	97
X	240
MtBE	ND

LIMIT OF  
ASPHALT  
REMOVAL

B-8

CONCRETE PAD  
HOLD DOWN  
T4N T3N

B-3

B-1

FORMER LOCATION  
OF UNDERGROUND  
FUEL STORAGE TANKS

B-8

T4S

B-2

ASPHALT

T3S

T2S

SUMP

CONCRETE  
PAD

VENT LINES

VENT PIPES

PL1

PL2

PRODUCT LINES

FLP

UNLEADED PUMP

FLP

DIESEL PUMP

DP

PUMP  
ISLAND

CONCRETE  
PAD

MAINTENANCE  
BUILDING

**EXPLANATION**

- ⊙ LOCATION OF GROUNDWATER MONITORING WELL INSTALLED 8/30/94 & 7/1/94
- ⊙ APPROXIMATE LOCATION OF DECOMMISSIONED MONITORING WELL
- ⊙ APPROXIMATE LOCATION OF SOIL BORING (ENGEO 12/13/90)
- SAMPLE LOCATION AT TIME OF TANK REMOVALS
- ◆ APPROXIMATE LOCATION OF EXPLORATORY SOIL BORINGS (ENGEO 4/9/93)
- ⊙ APPROXIMATE LOCATION OF GROUND-WATER MONITORING WELL INSTALLED 4/13/93
- ⊙ APPROXIMATE LOCATION OF EXPLORATORY SOIL BORINGS (ENGEO 6/30/94)

(73.82) GROUNDWATER ELEVATION, FT MSL

- G GASOLINE
- B BENZENE
- T TOLUENE
- E ETHYL BENZENE
- X TOTAL XYLENES
- MtBE METHYL TERTIARY BUTYL ETHER
- ND NOT DETECTED

CONCENTRATIONS REPORTED IN PARTS PER BILLION



FIGURE NO. **2**  
PROJECT NO.: 3174.3.050.01  
DATE: AUGUST 1999  
DRAWN BY: [Signature] CHECKED BY: [Signature]

MONITORING WELL LOCATIONS  
L.V.J.U.S.D. MAINTENANCE YARD  
2900 LADD AVENUE  
LIVERMORE, CALIFORNIA

**ENGEO**  
INCORPORATED

**ENGEO INCORPORATED  
GROUND-WATER SAMPLING INFORMATION**

Job Name: LVJUSD Maint. Yard  
 Location: 2900 Ladd Avenue  
Livermore, CA  
 Client: LVJUSD

Job Number: 3174.3.050.01  
 Date: 08/05/99  
 By: K. Nowell

**WELL INFORMATION**

Well Number: MW2  
 Total Depth (ft.): 57.00 TOC  
 Depth to Water (ft.): 26.18 TOC

Casing Diameter (in.): 2.00  
 Screen Length (ft.): 25  
 Casing Volume (gal.): 5.4

**PURGING INFORMATION**

Bailer:      Pump: X Rate: 0.5 gpm  
 Volume Removed (gal.): 24

Time (init./fin.): 11:03 / 11:56  
 Number of Casing Volumes: 4.5

Time	Volume Removed (Gal.)	Total Casing Volumes	Temperature (Degrees Celcius)	Conductivity (micromohs)	pH	Comments
11:03	---	---	---	---	---	Initial, No odor, no sheen
11:14	6.0	1.1	20.5	653	7.4	Turbid
11:26	12.0	2.2	20.5	671	7.3	Turbid
11:40	18.0	3.4	19.3	---	7.3	Slightly turbid
11:56	24.0	4.5	19.6	659	7.3	Slightly turbid

**SAMPLE INFORMATION**

Bailer: X Pump:       
 Decon Procedure: TSP  
Disposable

Distilled Water:       
 Other:     

Sample	Time	Size / Number	Preservative	Test	Comments
MW-2	12:18	40 ml 3	HCl	TPHg/BTEX/MIBE	Slightly turbid

**ENGEO INCORPORATED  
GROUND-WATER SAMPLING INFORMATION**

Job Name: LVJUSD Maint. Yard  
 Location: 2900 Ladd Avenue  
Livermore, CA  
 Client: LVJUSD

Job Number: 3174.3.050.01  
 Date: 08/05/99  
 By: K. Nowell

**WELL INFORMATION**

Well Number: MW3  
 Total Depth (ft.): 52.76 TOC  
 Depth to Water (ft.): 26.69 TOC

Casing Diameter (in.): 2.00  
 Screen Length (ft.): 25  
 Casing Volume (gal.): 4.5

**PURGING INFORMATION**

Bailer:      Pump: X Rate: 0.7 gpm  
 Volume Removed (gal.): 20

Time (init./fin.): 9:56 / 10:25  
 Number of Casing Volumes: 4.4

Time	Volume Removed (Gal.)	Total Casing Volumes	Temperature (degrees farenheight)	Conductivity (micromohs)	pH	Comments
9:56	---	---	---	---	---	Initial, No odor, no sheen
10:01	5.0	1.1	18.8	849	7.5	Turbid
10:06	10.0	2.2	19.4	849	7.2	Slightly turbid
10:13	15.0	3.3	19.2	819	7.3	Slightly turbid
10:25	20.0	4.4	19.3	824	7.3	Slightly turbid

**SAMPLE INFORMATION**

Bailer: X Pump:       
 Decon Procedure: TSP  
Disposable:

Distilled Water:       
 Other:     

Sample	Time	Size / Number	Preservative	Test	Comments
MW-3	10:35	40 ml / 3	HCl	TPHg/BTEX/MtBE	Clear

**ENGEO INCORPORATED  
GROUND-WATER SAMPLING INFORMATION**

**Job Name:** LVJUSD Maint. Yard  
**Location:** 2900 Ladd Avenue  
 Livermore, CA  
**Client:** LVJUSD

**Job Number:** 3174.3.050.01  
**Date:** 08/05/99  
**By:** K. Nowell

**WELL INFORMATION**

**Well Number:** MW4  
**Total Depth (ft.):** 53.78 TOC  
**Depth to Water (ft.):** 26.64 TOC

**Casing Diameter (in.):** 2.00  
**Screen Length (ft.):** 25  
**Casing Volume (gal.):** 4.7

**PURGING INFORMATION**

**Bailer:** Pump: X **Rate:** 0.5 gpm  
**Volume Removed (gal.):** 20

**Time (init./fin.):** 8:34 / 9:12  
**Number of Casing Volumes:** 4.2

Time	Volume Removed (Gal.)	Total Casing Volumes	Temperature (degrees celcius)	Conductivity (micromohs)	pH	Comments
8:34	---	---	---	---	---	Initial, No odor, no sheen
8:39	5.0	1.1	18.8	1192	7.4	Slightly turbid
8:46	10.0	2.1	18.0	1025	7.2	Slightly turbid
8:56	15.0	3.2	19.2	990	7.2	Slightly turbid
9:12	20.0	4.2	18.9	973	7.3	Slightly turbid

**SAMPLE INFORMATION**

**Bailer:** X **Pump:** \_\_\_\_\_  
**Decon Procedure:** TSP  
 Disposable: \_\_\_\_\_

**Distilled Water:** \_\_\_\_\_  
**Other:** \_\_\_\_\_

Sample	Time	Size / Number	Preservative	Test	Comments
MW-4	9:26	40 ml 3	HCl	TPHg/BTEX/MtBE	Slightly turbid



**ENGEO INCORPORATED  
GROUND-WATER MONITORING WELL DATA**

Project: LVJUSD Maint. Yard

Project No: 3174.3.050.01

Location: 2900 Ladd Avenue  
Livermore, CA

Proj. Date: 8/5/99

**WATER ELEVATION DATA**

WELL#	Elevation (msl)	Casing Elevation (rel)	Casing Height (ft)	Depth to Water (tc/ft)	Water Elev (msl)	Water Depth (ft)
MW2	100.40	100.00	0.40	26.18	73.82	26.58
MW3	99.03	98.55	0.48	26.69	71.86	27.17
MW4	99.48	99.22	0.26	26.64	72.58	26.90

**WELL CONSTRUCTION DETAILS**

WELL#	Installation Date	Boring Diameter (in)	Total Depth (ft)	Diameter (in)	Top of Screen (bgl)	Top of Filter Pack (bgl)
MW2	04/13/93	7.25	57.0	2.00	32.0	30.0
MW3	07/01/94	7.25	57.0	2.00	28.0	26.0
MW4	06/30/94	7.25	57.0	2.00	28.0	26.0

Distances  
Distances— based on co-ordinates

Well	X- coordinate	Y- coordinate	
MW2	4967.69	4939.74	High well
MW3	4871.27	5021.17	Low well
MW4	4900.86	4933.55	Mid well

Distance between high and low wells                      126.20    feet

**GROUND-WATER GRADIENT CALCULATION**

Maximum Elevation (ft-msl):	73.82
Minimum Elevation (ft-msl):	71.86
Mid Elevation (ft-msl):	72.58
Distance Max - Min (ft):	126.20
Equipotential Point (Feet From Min Point):	46.36
Gradient, i:	0.016

**Engeo, Inc.**

2401 Crow Canyon Rd., Suite 200  
San Ramon, CA 94583-1545

Attn.: Mr. Keith Nowell

Project: 3174.3.050.01  
LVJUSD Maint. yard

Dear Mr. Nowell,

Attached is our report for your samples received on Thursday August 5, 1999.  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after September 4, 1999  
unless you have requested otherwise. We appreciate the opportunity to be of service to you.  
If you have any questions, please call me at (925) 484-1919.

Sincerely,



Afsaneh Salimpour

Gas/BTEX and MTBE

Engeo, Inc.

✉ 2401 Crow Canyon Rd., Suite 200  
San Ramon, CA 94583-1545

Attn: Keith Nowell

Phone: (925) 838-1600 Fax: (925) 838-7425

Project #: 3174.3.050.01

Project: LVJUSD Maint. yard

**Samples Reported**

Sample ID	Matrix	Date Sampled	Lab #
MW-2	Water	08/05/1999 12:18	1
MW-3	Water	08/05/1999 10:35	2
MW-4	Water	08/05/1999 09:26	3

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0085

To: Engeo, Inc.

Test Method: 8020  
8015M

Attn.: Keith Nowell

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: MW-2	Lab Sample ID: 1999-08-0085-001
Project: 3174.3.050.01 LVJUSD Maint. yard	Received: 08/05/1999 13:17
Sampled: 08/05/1999 12:18	Extracted: 08/09/1999 09:51
Matrix: Water	QC-Batch: 1999/08/09-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	3000	250	ug/L	5.00	08/09/1999 09:51	
Benzene	1100	2.5	ug/L	5.00	08/09/1999 09:51	
Toluene	370	2.5	ug/L	5.00	08/09/1999 09:51	
Ethyl benzene	97	2.5	ug/L	5.00	08/09/1999 09:51	
Xylene(s)	240	2.5	ug/L	5.00	08/09/1999 09:51	
MTBE	ND	25	ug/L	5.00	08/09/1999 09:51	
<b>Surrogate(s)</b>						
Trifluorotoluene	109.4	58-124	%	1.00	08/09/1999 09:51	
4-Bromofluorobenzene-FID	109.0	50-150	%	1.00	08/09/1999 09:51	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0085

To: Engeo, Inc.

Test Method: 8020  
8015M

Attn.: Keith Nowell

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: <b>MW-3</b>	Lab Sample ID: <b>1999-08-0085-002</b>
Project: 3174.3.050.01 LVJUSD Maint. yard	Received: 08/05/1999 13:17
Sampled: 08/05/1999 10:35	Extracted: 08/06/1999 19:36
Matrix: Water	QC-Batch: 1999/08/06-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	08/06/1999 19:36	
Benzene	ND	0.50	ug/L	1.00	08/06/1999 19:36	
Toluene	ND	0.50	ug/L	1.00	08/06/1999 19:36	
Ethyl benzene	ND	0.50	ug/L	1.00	08/06/1999 19:36	
Xylene(s)	0.70	0.50	ug/L	1.00	08/06/1999 19:36	
MTBE	ND	5.0	ug/L	1.00	08/06/1999 19:36	
<b>Surrogate(s)</b>						
Trifluorotoluene	114.4	58-124	%	1.00	08/06/1999 19:36	
4-Bromofluorobenzene-FID	119.6	50-150	%	1.00	08/06/1999 19:36	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0085

To: Engeo, Inc.

Test Method: 8020  
8015M

Attn.: Keith Nowell

Prep Method: 5030

## Gas/BTEX and MTBE

Sample ID: MW-4	Lab Sample ID: 1999-08-0085-003
Project: 3174.3.050.01 LVJUSD Maint. yard	Received: 08/05/1999 13:17
Sampled: 08/05/1999 09:26	Extracted: 08/09/1999 09:24
Matrix: Water	QC-Batch: 1999/08/09-01.03

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	120	50	ug/L	1.00	08/09/1999 09:24	
Benzene	59	0.50	ug/L	1.00	08/09/1999 09:24	
Toluene	ND	0.50	ug/L	1.00	08/09/1999 09:24	
Ethyl benzene	ND	0.50	ug/L	1.00	08/09/1999 09:24	
Xylene(s)	ND	0.50	ug/L	1.00	08/09/1999 09:24	
MTBE	19	5.0	ug/L	1.00	08/09/1999 09:24	
<b>Surrogate(s)</b>						
Trifluorotoluene	113.8	58-124	%	1.00	08/09/1999 09:24	
4-Bromofluorobenzene-FID	101.5	50-150	%	1.00	08/09/1999 09:24	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0085

To: Engeo, Inc.

Test Method: 8020  
8015M

Attn.: Keith Nowell

Prep Method: 5030

## Batch QC Report Gas/BTEX and MTBE

Method Blank

Water

QC Batch # 1999/08/06-01.03

MB: 1999/08/06-01.03-003

Date Extracted: 08/06/1999 10:15

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	08/06/1999 10:15	
Benzene	ND	0.5	ug/L	08/06/1999 10:15	
Toluene	ND	0.5	ug/L	08/06/1999 10:15	
Ethyl benzene	ND	0.5	ug/L	08/06/1999 10:15	
Xylene(s)	ND	0.5	ug/L	08/06/1999 10:15	
MTBE	ND	5.0	ug/L	08/06/1999 10:15	
<b>Surrogate(s)</b>					
Trifluorotoluene	111.2	58-124	%	08/06/1999 10:15	
4-Bromofluorobenzene-FID	112.0	50-150	%	08/06/1999 10:15	

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0085

To: Engeo, Inc.

Test Method: 8020  
8015M

Attn: Keith Nowell

Prep Method: 5030

## Batch QC Report Gas/BTEX and MTBE

Method Blank

Water

QC Batch # 1999/08/09-01.03

MB: 1999/08/09-01.03-001

Date Extracted: 08/09/1999 08:29

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	08/09/1999 08:29	
Benzene	ND	0.5	ug/L	08/09/1999 08:29	
Toluene	ND	0.5	ug/L	08/09/1999 08:29	
Ethyl benzene	ND	0.5	ug/L	08/09/1999 08:29	
Xylene(s)	ND	0.5	ug/L	08/09/1999 08:29	
MTBE	ND	5.0	ug/L	08/09/1999 08:29	
<b>Surrogate(s)</b>					
Trifluorotoluene	118.6	58-124	%	08/09/1999 08:29	
4-Bromofluorobenzene-FID	129.8	50-150	%	08/09/1999 08:29	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096



# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0085

To: Engeo, Inc.

Test Method: 8020  
8015M

Attn: Keith Nowell

Prep Method: 5030

## Batch QC Report

Gas/BTEX and MTBE

### Laboratory Control Spike (LCS/LCSD)

### Water

QC Batch # 1999/08/06-01.03

LCS: 1999/08/06-01.03-001

Extracted: 08/06/1999 07:25

Analyzed: 08/06/1999 07:25

LCSD: 1999/08/06-01.03-002

Extracted: 08/06/1999 08:19

Analyzed: 08/06/1999 08:19

Compound	Conc. [ ug/L ]		Exp. Conc. [ ug/L ]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	506	518	500	500	101.2	103.6	2.3	75-125	20		
Benzene	84.9	91.9	100.0	100.0	84.9	91.9	7.9	77-123	20		
Toluene	85.3	91.6	100.0	100.0	85.3	91.6	7.1	78-122	20		
Ethyl benzene	84.3	90.6	100.0	100.0	84.3	90.6	7.2	70-130	20		
Xylene(s)	242	262	300	300	80.7	87.3	7.9	75-125	20		
<b>Surrogate(s)</b>											
Trifluorotoluene	491	531	500	500	98.2	106.2		58-124			
4-Bromofluorobenzene-Fl	487	510	500	500	97.4	102.0		50-150			

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0085

To: Engeo, Inc.

Test Method: 8020  
8015M

Attn: Keith Nowell

Prep Method: 5030

## Batch QC Report

Gas/BTEX and MTBE

### Laboratory Control Spike (LCS/LCSD)

### Water

QC Batch # 1999/08/09-01.03

LCS: 1999/08/09-01.03-002

Extracted: 08/09/1999 15:24

Analyzed: 08/09/1999 15:24

LCSD: 1999/08/09-01.03-003

Extracted: 08/09/1999 07:33

Analyzed: 08/09/1999 07:33

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	RPD	Recovery	RPD	LCS	LCSD
Gasoline	539	525	500	500	107.8	105.0	2.6	75-125	20		
Benzene	108	93.7	100.0	100.0	108.0	93.7	14.2	77-123	20		
Toluene	107	92.9	100.0	100.0	107.0	92.9	14.1	78-122	20		
Ethyl benzene	107	90.3	100.0	100.0	107.0	90.3	16.9	70-130	20		
Xylene(s)	305	266	300	300	101.7	88.7	13.7	75-125	20		
<b>Surrogate(s)</b>											
4-Bromofluorobenzene	565	590	500	500	113.0	118.0		50-150			
Trifluorotoluene-FID	598	553	500	500	119.6	110.6		58-124			

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 1999-08-0085

To: Engeo, Inc.

Test Method: 8020  
8015M

Attn.: Keith Nowell

Prep Method: 5030

## Batch QC Report Gas/BTEX and MTBE

Matrix Spike ( MS / MSD )

Water

QC Batch # 1999/08/09-01.03

Sample ID: MW-4

Lab Sample ID: 1999-08-0085-003

MS: 1999/08/09-01.03-004 Extracted: 08/09/1999 15:52 Analyzed: 08/09/1999 15:52 Dilution: 1.0

MSD: 1999/08/09-01.03-005 Extracted: 08/09/1999 16:47 Analyzed: 08/09/1999 16:47 Dilution: 1.0

Compound	Conc		[ ug/L ] Sample	Exp. Conc. [ ug/L ]		Recovery [%] RPD			Ctrl. Limits [%]		Flags	
	MS	MSD		MS	MSD	MS	MSD	RPD [%]	Recovery	RPD	MS	MSD
Gasoline	621	460	116	500	500	101.0	68.8	37.9	65-135	20	mso	
Benzene	151	149	58.5	100.0	100.0	92.5	90.5	2.2	65-135	20		
Toluene	101	99.0	ND	100.0	100.0	101.0	99.0	2.0	65-135	20		
Ethyl benzene	98.2	95.2	ND	100.0	100.0	98.2	95.2	3.1	65-135	20		
Xylene(s)	284	278	ND	300	300	94.7	92.7	2.1	65-135	20		
<b>Surrogate(s)</b>												
Trifluorotoluene	519	566		500	500	103.8	113.2		58-124			
4-Bromofluorobenzene	521	436		500	500	104.2	87.2		50-150			

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

