# ENGEO INCORPORATED

HAZMAT GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 94 JUN 15 PN 2:46

> In Reply Please Refer to: 3174-F7

June 7, 1994

Mr. Dick Alford Livermore Valley Joint Unified School District 2900 Ladd Avenue Livermore, CA 94550

Subject: Maintenance Yard 2900 Ladd Avenue Livermore, California

## **REPORT ON GROUND-WATER SAMPLING**

Reference: ENGEO Inc., Report on Soil and Ground-water Investigation, 2900 Ladd Avenue, Livermore, California, dated July 8, 1994.

Dear Mr. Alford:

This report presents the results of the sampling of the existing ground-water monitoring well (MW2) located on the subject property (Figure 1). The scope of services included the following:

- O Purging of the monitoring well with the recovery of a ground-water sample
- O Laboratory analysis of the ground-water sample for TPH as gasoline and BTEX.
- O Preparation of this letter report

## Ground-Water Sampling

Field work was conducted on May 12, 1994. Initially, the depth to the top of the groundwater was verified and the well was checked for the presence of free product or petroleum sheen. No free product or sheen was observed. The water level was recorded at a depth of 31.12 feet from the top of well casing. The measured water level was 0.31 feet lower than a ground-water level recorded on April 20, 1993, (Referenced Report). Prior to sampling, approximately 6 casing volumes of water were removed from the well using a submersible electric pump. Water quality parameters including, temperature, pH, and dissolved solids were monitored to allow for adequate purging. The ground-water sample was collected for laboratory testing using a Voss Technologies dedicated polyethylene bailer.

| Livermore Valley Joint Unified School District | 3174-F7      |
|--|--------------|
| Maintenance Yard, 2900 Ladd Avenue             | June 7, 1994 |
| REPORT ON GROUND-WATER SAMPLING                | Page 2       |

The sample was then decanted into precleaned laboratory glassware and cooled in an ice chest until delivery under a documented chain-of-custody to ChromaLab, Incorporated in San Ramon, California. A copy of the well sampling information forms and the chain of custody are provided as an attachment.

#### Laboratory Analysis

The ground-water sample was tested for total petroleum hydrocarbons as gasoline, (EPA 5030/8015) and benzene, toluene, ethylbenzene and xylenes (BTEX) (EPA 8020). The practical quantitation limits listed for TPHG and BTEX in the Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites dated August 10, 1990, were used by the laboratory as the detection reporting limits. A copy of the laboratory test report is provided as an attachment. Table I provides a summary of the laboratory test results.

| Laboratory Analysis Summary<br>(Concentrations reported in parts per billion) |       |     |     |     |     |  |  |  |  |  |  |  |  |
|---|-------|-----|-----|-----|-----|--|--|--|--|--|--|--|--|
| Date  | TPHg  | В   | Т   | E   | X   |  |  |  |  |  |  |  |  |
| 4/20/93   | 4,500 | 340 | 110 | 8.0 | 630 |  |  |  |  |  |  |  |  |
|   |       |     |     |     |     |  |  |  |  |  |  |  |  |

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The next sampling episode for MW2 will be undertaken at the time the proposed groundwater monitoring wells are sampled. 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.

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Very truly yours,

ENGEO INCORPORATED

5/12/94

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Eric Harrell Environmental Geologist

Reviewed by:

Brian Flaherty Vice President Director, Environmental Services

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# ENGEO INCORPORATED GROUND-WATER SAMPLING INFORMATION

| Job Name:                | L.V.J.U.S.D            | ). Maintenance  | Job Number: 3174-F7 |                               |          |  |  |  |  |  |  |  |
|--------------------------|------------------------|-----------------|---------------------|-------------------------------|----------|--|--|--|--|--|--|--|
| Location:                | 2900 Ladd A            | venue           |                     | Date: May 12, 1994            | 1        |  |  |  |  |  |  |  |
| Client: Li<br>School Dis | vermore Valle<br>trict | ey Joint Unifie | d                   | By: Eric Harrell              |          |  |  |  |  |  |  |  |
|                          |                        | WE              | LL INFORM           | MATION                        |          |  |  |  |  |  |  |  |
| Well Num                 | ber: MW-2              |                 | Diameter (in): 2.0  |                               |          |  |  |  |  |  |  |  |
| Total Dep                | th (ft): 57.00         | T.O.C.          | Screen Length: 25   | feet                          |          |  |  |  |  |  |  |  |
| Depth to V               | Water (ft): 31         | I.12 T.O.C.     |                     | Casing Volume (gal            | ): 4.4   |  |  |  |  |  |  |  |
|                          |                        | PURG            | GING INFO           | RMATION                       |          |  |  |  |  |  |  |  |
| Bailer: Pu               | mp: X (rate):          | : Approx. 1.2 g | al/min              | Time: (init./fin) 13:45/14:11 |          |  |  |  |  |  |  |  |
| Volume R                 | emoved (gal):          | : 26.4          |                     | No. of Casing Vol: 6          |          |  |  |  |  |  |  |  |
| pH Readir                | ng: 7.4                | -               |                     | Temp (C): 21.0                |          |  |  |  |  |  |  |  |
| Cond (µS)                | : 760                  |                 | <u>.</u>            | eh (mV): -23.6                |          |  |  |  |  |  |  |  |
| Bailer: X                | C Pump:                | SAM<br>(rate):  | IPLE INFOR          | RMATION                       |          |  |  |  |  |  |  |  |
| Decon Pro                | cedure: Solve          | ent             |                     | Acid                          |          |  |  |  |  |  |  |  |
|                          | TSP                    |                 |                     | Dist. H <sub>2</sub> O        |          |  |  |  |  |  |  |  |
|                          | Dispo                  | osable X        | Other               |                               |          |  |  |  |  |  |  |  |
| Sample                   | Time                   | Size            | Presv.              | Test                          | Comments |  |  |  |  |  |  |  |
| MW-2                     | 14:16                  | (3)-40ml        | Ice                 | Total petroleum Slightly turb |          |  |  |  |  |  |  |  |

| - | 11.10 | 100 | i i otal potioioani | onginity i |  |
|---|-------|-----|---------------------|------------|--|
|   |       |     | hydrocarbons as     |            |  |
|   |       |     | gasoline, benzene,  |            |  |
|   | :     |     | tolune, ethyl       |            |  |
|   |       |     | benzene and         |            |  |
|   |       |     | xvlenes.            |            |  |

# ENGEO INCORPORATED WELL PURGING INFORMATION

Job Name: L.V.J.U.S.D. Maintenance Yard

Location: 2900 Ladd Avenue

Client: Livermore Joint Unified School District

Well No.: MW-2

Depth to Water (ft.): 31.12 T.O.C.

Job No.: 3174-F7

Date: May 12, 1994

By: Eric Harrell

Total Depth (ft.): 57.00 T.O.C.

Casing Volume (gal.): 4.35

| Time  | Volume<br>Removed<br>(Gal.) | Total<br>Casing<br>Volumes | Temp<br>°C | Cond<br>(µS) | pН  | Comments                     |
|-------|-----------------------------|----------------------------|------------|--------------|-----|------------------------------|
| 13:45 | 0                           | 0                          |            |              |     | No sheen or floating product |
| 13:49 | 4.4                         | 1                          | 22.3       | 670          | 7.5 | Sand and silt                |
| 13:54 | 8.8                         | 2                          | 21.4       | 800          | 7.4 | Turbid                       |
| 13:58 | 13.2                        | 3                          | 21.1       | 750          | 7.4 | Slightly turbid              |
| 14:02 | 17.6                        | 4                          | 21.0       | 750          | 7.4 | Slightly turbid              |
| 14:07 | 22.0                        | 5                          | 21.2       | 750          | 7.4 | Slightly turbid              |
| 14:11 | 26.4                        | 6                          | 21.0       | 760          | 7.4 | Slightly turbid              |
|       |                             |                            |            |              |     |                              |
|       |                             |                            |            |              |     |                              |
|       |                             |                            |            | ·            |     |                              |
|       |                             |                            |            |              |     |                              |
|       |                             |                            |            |              |     |                              |
|       |                             |                            |            |              |     |                              |
|       |                             |                            |            |              |     |                              |

# CHROMALAB, INC.

**Environmental Services (SDB)** 

May 20, 1994

ChromaLab File#: 9405192

ENGEO, INC.

Atten: Eric Harrell

**Project:** L.V.J.U.S.D. MAINTENANCE YARD **Project#:** 3174-F7 **Received:** May 13, 1994

re: 1 sample for Gasoline and BTEX analysis.

 Matrix:
 WATER

 Sampled on:
 May 12, 1994
 Analyzed on:
 May 16, 1994

 Method:
 EPA 5030/8015/602
 Run#:
 2885

| Lab # SAMPLE ID                                      | Gasoline<br>(ug/L) | Benzene<br>(ug/L) | Toluene<br>(ug/L)  | Ethyl<br>Benzene<br>(ug/L) | Total<br>Xylenes<br>(ug/L) |     |
|--|--------------------|-------------------|--------------------|----------------------------|----------------------------|-----|
| 51477 MW2  | 7000               | 520               | 220                | 35                         | 410 -                      | · - |
| DETECTION LIMITS<br>BLANK<br>BLANK SPIKE RECOVERY(%) | 50<br>N.D.<br>108  | 0.5<br>N.D.<br>99 | 0.5<br>N.D.<br>114 | 0.5<br>N.D.<br>116         | 0.5<br>N.D.<br>120         |     |

ChromaLab, Inc.

Billy Thach Chemist

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Eric Tam Laboratory Director

LIMS JACK 19:21:30

| Ĵ        | SU<br>CL<br>DU<br>RE      | BM #:<br>IENT:<br>E:<br>F: 16 | 9405<br>ENGE<br>05/2<br>441 | 192<br>0<br>0/94 | ,<br>•                      |                |                                    |                  | ~                              | •                                 |              | ) 9<br>, <b>E</b> ( | ير<br><b>CC</b>            | 0 n<br>5/5<br>)R    | le.<br>17<br>D       | 7 | Hr   . | 649 | (1 | L<br>II<br>240<br>SA<br>PI | DI CROW CANYON ROAD, SUITE 200<br>N RAMON, CALIFORNIA 94583<br>HONE (510) 838-1600 |
|----------|---------------------------|-------------------------------|-----------------------------|------------------|-----------------------------|----------------|------------------------------------|------------------|--------------------------------|-----------------------------------|--------------|---------------------|----------------------------|---------------------|----------------------|---|--------|-----|----|----------------------------|--|
| <u>.</u> | Maint                     | inana                         | e.                          | Yard             | - CASOLINE<br>PA 8015/5030) | 015/3550/3510) | EABLE AROMATICS<br>(EPA 602. 3020) | ABLE HALOCARBONS | TILE ORGANICS<br>PA 624, 8240) | /NEUTRALS, ACIDS<br>EPA 625,8270) | OIL & CREASE | PESTICIDES/PCB      | PESTICIDES<br>PA 614/8140) | E 26 METALS<br>(17) | DRITY METALS<br>(13) |   |        |     |    |                            | REMARKS<br>REQUIRED DETECTION LIMITS   |
| lix      | NUMBER<br>OF<br>CONTAINER | s                             | NTAINER<br>SIZE             | PRESERVATIVE     | ч<br>Ц<br>Ц<br>Ц<br>Ц       | I v<br>G<br>H  | PURG                               | PŪRGE<br>(E      | (E<br>€                        | BASE                              | TOTAL<br>(S) | υ<br>0<br>0         | ۵<br>0                     |                     | a<br>S<br>S          |   |        |     |    |                            |  |
| er<br>   | 3                         | 40                            | ml                          | . ice.           | ×                           |                | ×                                  |                  |                                |                                   |              |                     |                            |                     |                      |   |        |     |    |                            |  |
|          | <b> </b>                  |                               |                             |                  |                             |                |                                    |                  |                                | -                                 |              |                     |                            |                     |                      |   |        |     |    |                            |  |

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PROJECT NAME

PROJECT NUMBER

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| <br>Hanol                              | .s.D.  | Mainti  | nunce   | Yard  | - CASOLI  | DIE/3550/3510                 | ABLE AROMAT<br>(EPA 602, 3020)  | A 501, 8010)<br>A 501, 8010)<br>ILE ORGAN  | A 624, 8240)<br>NEUTRALS, AC<br>PA 625,8270)  | OIL & GRE,<br>W 5520(F)  | ESTICIDES/F<br>A 608, 8080)   | PESTICID<br>A 614/8140)  | 26 META<br>(17)   | RITY MET.<br>(13)   |  |  |  |  | REMARKS<br>REQUIRED DETECTION LIMIT  |
|--|--|---|---|---|---|-------------------------------|---|--|---|--|---|--|---|---|--|--|--|--|--|
| TIME                                   | MATRIX   | NUMBER<br>OF<br>CONTAINERS                                    | CONTAINER<br>SIZE   | PRESERVATIVE  | не<br>Н<br>(Э)  | I a<br>(EP▲<br>⊢              | PURGE<br>BTEX (   | PURGEA<br>(EP<br>VOLAT   | BASE/1  | TOTAL<br>(SW)  | မ်းမြို့<br>ပြ  | ОР<br>(9)  |   | 5<br>0<br>0   |  |  |  |  |  |
| 14:16                                  | water  | 3   | 40 ml   | - ice.  | x   |                               | ×   |  | _   |  |   |  |   |   |  |  |  |  |  |
|  |  |   |   |   |   |                               |   |  |   |  |   |  |   |   |  |  |  |  |  |
|  |  |   |   |   |   |                               |   |  | _   |  |   |  |   |   |  |  |  |  |  |
|  |  |   |   |   |   |                               |   |  |   | 1  |   |  |   |   |  |  |  |  |  |
|  |  |   |   |   |   |                               |   |  | _   |  |   |  |   |   | -  |  | -  |  |  |
| ····                                   |  |   |   |   |   |                               |   |  |   |  |   |  |   |   |  |  |  |  |  |
|  |  |   |   |   |   |                               |   |  |   |  |   |  |   |   |  |  |  |  |  |
|  |  | ·   |   |   |   |                               |   |  |   |  |   |  |   |   |  |  |  |  |  |
| ······································ |  |   |   |   |   |                               |   |  |   |  |   |  |   |   |  |  |  |  |  |
|  |  | DATE  | Z/TIME  | RECEIVED BY: (SIG   | NATURE)   |                               | 7   |  | RELINQUIS   | HED B1   | r: (Sign  | NATURE   | E)  |   |  | DAT  | E/TIME   |  | RECEIVED BY: (SIGNATURE)   |
| MULL<br>TURE)                          |  | 5-43-94<br>DATI   | 13:4/<br>E/TIME   | RECEIVED BY (STG  | NATURE)   | /                             |   |  | ELINQUIS  | IED BY   | (SIGN   | NATURE   | E)  |   |  | DAT  | e/TIME   |  | RECEIVED BY: (SIGNATURE)   |
| TURE)                                  |  | DATE  | E/TIME F  | RECEIVED FOR LAB  | ORATORY   | r 8Y:                         | (SIGNATI  | JRE)   |   | DATE/1   | пме   |  | REM/  | RK5   | <u> </u>   | 'da  | <br>47   | AT.  |  |
|  | I L.V. 3. U<br>Aanol<br>TIME<br>74 14:16<br>74 14:16 | I L.W.J.U.S.D.<br>Aanoly<br>Time Matrix<br>79 14:16 Water<br> | I L.V.J.U.S.D. Maintin<br>Handler<br>TIME MATRIX NUMBER<br>OF<br>CONTAINERS<br>74 14.16 Water 3<br>74 14.16 Water 3<br>75 14.16 Water 3<br>76 14.16 Water 3<br>77 14.16 Water 3<br>77 14.16 Water 3<br>78 14.16 Water 3<br>79 14.16 Water 3<br>70 14.16 Water 3<br>70 14.16 Water 3<br>71 14.16 Water 3<br>71 14.16 Water 3<br>72 14.16 Water 3<br>73 14.16 Water 3<br>74 14.16 Water 3<br>74 14.16 Water 3<br>74 14.16 Water 3<br>75 14.16 Water 3<br>76 14.16 Water 3<br>77 14.16 Water 3<br>78 14.16 Water 3<br>78 14.16 Water 3<br>79 14.16 Water 3<br>79 14.16 Water 3<br>79 14.16 Water 3<br>70 14.16 Water 3<br>70 14.16 Water 3<br>71 14.16 Water | Image: | I.V.J.U.S.D. Maintinance land       HAME       TIME       MATRIX       MATRIX       ONTAMERS       CONTAMERS       SIZE       PRESERVATIVE       PRESE | L.V.J.U.S.D. Maintinance land | I.V.J.U.S.D. 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