

Environmental Restoration Services

Site Investigations * Fuel Tank Closures and Installations * Site Remediation * Regulatory Reporting

R0107

Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Second Floor
Alameda, CA 94502

September 27, 2002

Alameda County
OCT 14 2002
Environmental Health

Attn: Mr. Barney Chan; Haz Mat. Specialist for : DiSalvo Trucking
4919 Tidewater Ave., Oakland

Re: Groundwater Monitoring Event

Dear Mr. Chan,

This report has been prepared by Environmental Restoration Services, (ERS) to address requirements by the Alameda County Department of Environmental Health (ACDEH) to analyze the groundwater from existing monitoring wells for contaminate level and to determine the groundwater gradient direction, at a Leaking Underground Fuel Tank (LUST) site, 4919 Tidewater Ave., Oakland, California.

MONITORING WELL SAMPLING

On September 5, 2002 a single round of groundwater samples were obtained from monitoring wells MW1 through MW4.

Groundwater samples were collected from the wells by bailing each well until the volume of water withdrawn was equal to at least four casing volumes. To assure that a representative groundwater sample was collected, periodic measurements of the temperature, pH and specific conductance were made. The sample was collected only when the temperature, pH, and specific conductance reached relatively constant values.

A hand operated bailer was used for evacuating the well casing (purging) of each monitor well. Water samples were collected using a new disposable bailer. An effort was made to minimize exposure of the sample to air.

Subsequent to collection, the samples were immediately stored on ice in an appropriate ice chest. Samples were transported under Chain-of-Custody procedures to North State Environmental Labs (NSEL) of South San Francisco, CA.

Sampling equipment was cleaned after its use at each sampling location. Thermometers, pH electrodes, and conductivity probes were also cleaned after sampling of each well. Cleaning procedures were accomplished by scrubbing with a detergent-potable water solution and rinsing with potable water. Care was taken to collect all excess water resulting from the sampling and cleaning procedures. The excess water is contained in a 55-gallon drum on-site.

Laboratory Analyses

The following analyses were performed by NSEL on groundwater samples obtained from the monitor wells:

TPH-diesel (EPA Method CATFH); BTEX, MTBE (Method 8020F)

The results of the analysis were as follows;

Results in Parts Per Billion (PPB)

| Sample# | MTBE | Benzene | Toluene | EthylBenzene | Xylenes | TPH/d |
|---------|------|---------|---------|--------------|---------|-------|
| MW1 | 9.8 | ND<0.5 | ND<0.5 | ND<0.5 | ND<1 | ND<50 |
| MW2 | 5.1 | ND<0.5 | ND<0.5 | ND<0.5 | ND<1 | 27100 |
| MW3 | 31.1 | ND<0.5 | ND<0.5 | ND<0.5 | ND<1 | 1990 |
| MW4 | 1.2 | ND<0.5 | ND<0.5 | ND<0.5 | ND<1 | 17000 |

Note; TPH-diesel analysis was performed after silica gel treatment.

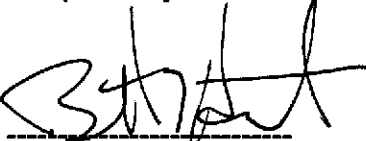
Chains-of-Custody and laboratory results are contained in the appendix.

Determination of Horizontal Groundwater Gradient

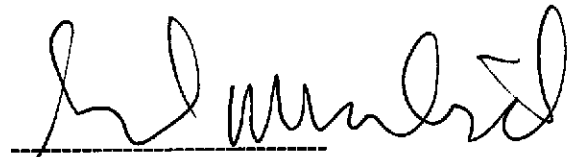
On September 5, 2002 the water levels in monitor wells MW1, MW2, and MW3 were measured within a one hour period. The water surface elevations in the wells were calculated using the survey data. Then, the horizontal hydraulic gradient was calculated based on accurately determined well locations.

The gradient calculated indicated a northwestern direction at a magnitude of approximately 0.10%. These groundwater elevation contours are depicted in Figure 2.

Respectfully submitted this 27th day of September, 2002,

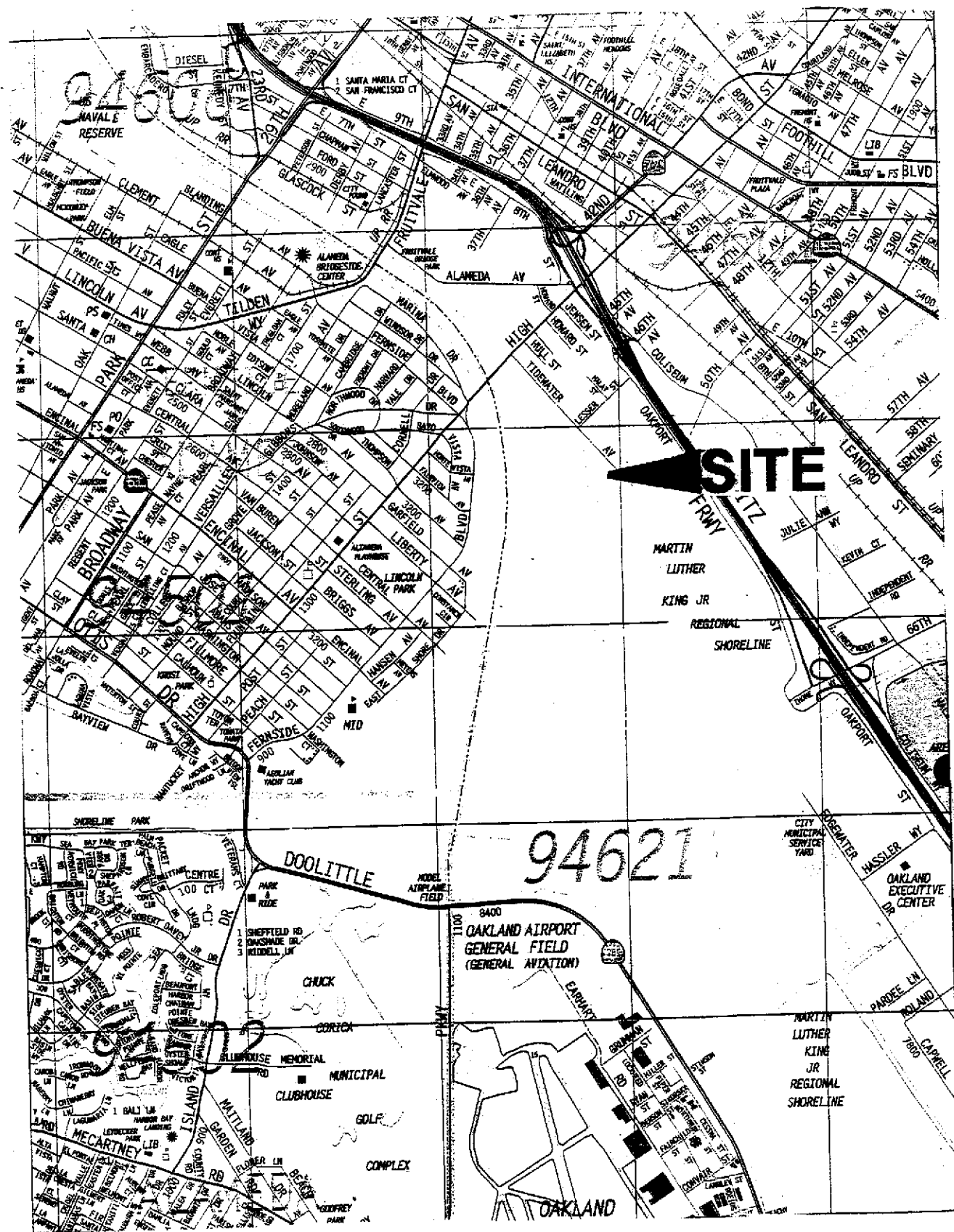


Bennett T Halsted
Project Manager



Samuel H Halsted P.E.
CE 14095

FIGURES

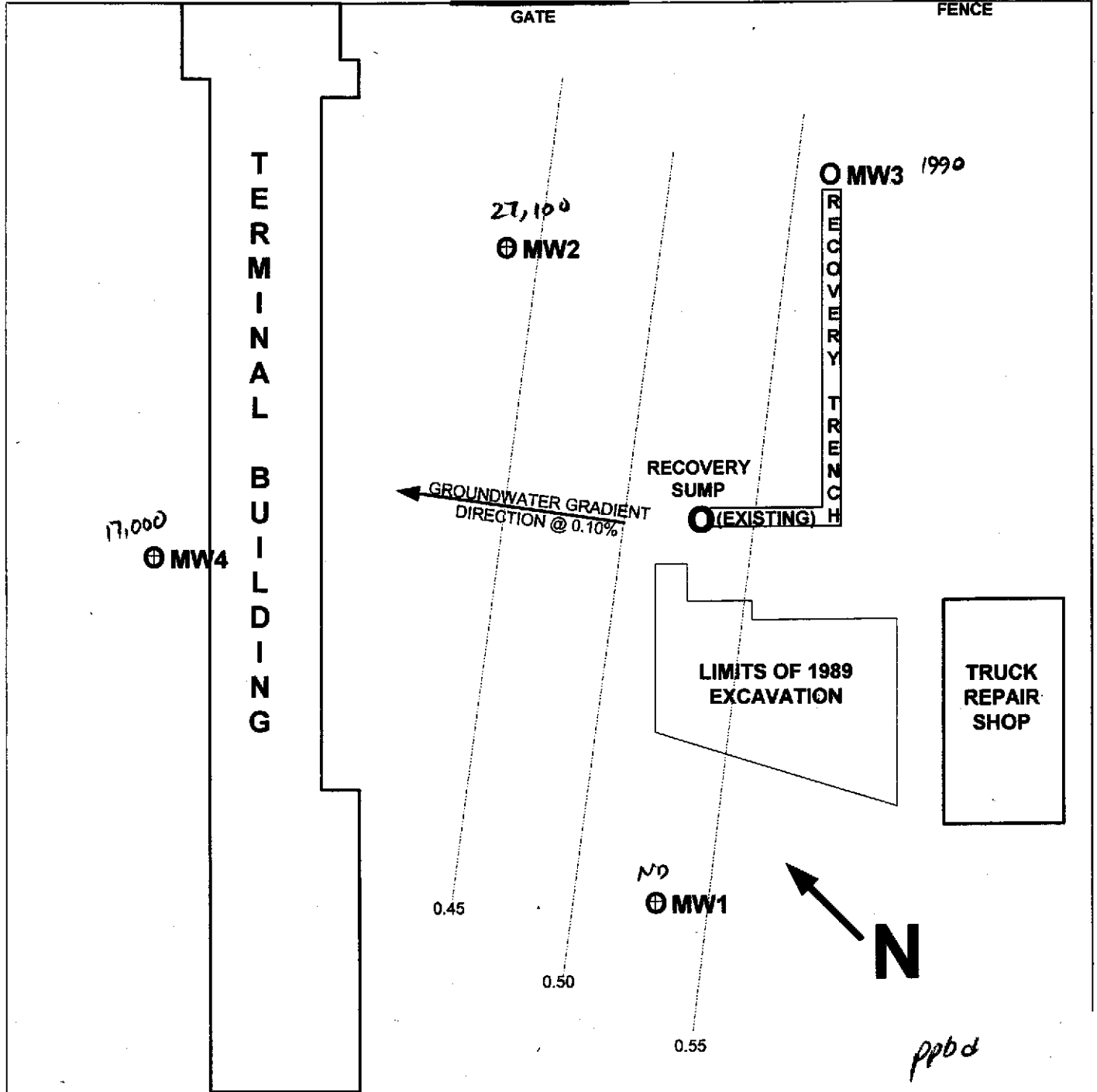


| | | |
|---|----------------|-----------------|
| VICINITY MAP | | |
| 4919 Tidewater St., Oakland, CA | | |
| DATE 9/19/02 | SCALE 1"=1900' | BY: |
| Environmental Restoration Services | | FIGURE 1 |
| 500 Santa Cruz Ave., Menlo Park, CA 94025 | | |

TIDEWATER AVE.

P/L

P/L



| WELL# | Casing Elev. | Depth to Grndwtr. | Grndwtr. Elev. |
|-------|--------------|-------------------|----------------|
| MW1 | 2.68 | 2.15 | 0.53 |
| MW2 | 3.50 | 3.06 | 0.44 |
| MW3 | 2.90 | 2.34 | 0.56 |

| | | |
|---|--------------|-----------------|
| <h2>SITE PLAN</h2> | | |
| 4919 Tidewater St., Oakland, CA | | |
| DATE 9/19/02 | SCALE 1"=50' | BY: |
| Environmental Restoration Services | | FIGURE 2 |
| 500 Santa Cruz Ave., Menlo Park, CA 94025 | | |

**CHAIN-OF-CUSTODY
ANALYTICAL RESULTS**



North State Labs

90 South Spruce Avenue, Suite W, South San Francisco, CA 94080

Phone: (650) 266-4563 Fax: (650) 266-4560

02-1249

Chain of Custody / Request for Analysis

Lab Job No.: _____ Page 1 of 1

SEP 17 02 03:30P

| | | | |
|---|-----------------|---------------------|---------------------|
| Client: Environmental Restoration Lab | Report to: ERS | Phone: 650-325-3716 | Turnaround Time |
| Mailing Address: 500 Santa Cruz Ave Menlo Park Ca 94025 | Billing to: ERS | Fax: 650-327-2984 | Normal |
| | | email: | Date: 9/5/02 |
| | | PO# | Sampler: B. Halsted |

| Project / Site Address / Global ID: | | | | | Analysis | | | | | | | | | | EDF <input type="checkbox"/> |
|---|-------------|--------------------------------|-------|--------------------|------------------------------------|--------------|--|--|--|--|--|--|--|--|------------------------------|
| Dikalvo Trucking 4999 Tidewater Oakland | | | | | Requested | | | | | | | | | | Field Point ID |
| Sample ID | Sample Type | Container No./Type | Pres. | Sampling Date/Time | TALL distill and clean up | BTEX MTBE | | | | | | | | | |
| MW1 | water | 2340 ml VOA 0.5 liter amber | HCL | 9/5/02 1:45 | X | X | | | | | | | | | |
| MW2 | | " | | 2:11 | X | X | | | | | | | | | |
| MW3 | | " | | 2:36 | X | X | | | | | | | | | |
| MW4 | | " | | 3:05 | X | X | | | | | | | | | |

| | | | | |
|------------------|--------------|----------------|--------------|--------------------------|
| Relinquished by: | Date: 9/6/02 | Time: 12:45 PM | Received by: | Lab Comments/ Hazards |
| Relinquished by: | Date: | Time: | Received by: | |
| Relinquished by: | Date: | Time: | Received by: | |

P. 2



North State Labs

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CA ELAP# 1753

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: C2-1249
 Client: Env. Restoration Services
 Project: DISALVO TRUCKING

Date Reported: 09/17/2002

MTBE, Benzene, Toluene, Ethylbenzene and Xylenes by SW8020F
 Diesel Range Hydrocarbons by CATH with Silica Gel Cleanup

| Analyte | Method | Result | Unit | Date Sampled | Date Analyzed |
|------------------------------------|---------|---------|------|--------------|---------------|
| Sample: 02-1249-01 Client ID: MW-1 | | | | | |
| | | | | 09/05/2002 | W |
| Benzene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Ethylbenzene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Methyl-tert-butyl ether | SW8020F | 9.8 | UG/L | | 09/11/2002 |
| Toluene | SW8020F | 0.9 | UG/L | | 09/11/2002 |
| Xylenes | SW8020F | 1.5 | UG/L | | 09/11/2002 |
| Diesel Fuel #2 | CATH | ND<0.05 | MG/L | | 09/13/2002 |
| Sample: 02-1249-02 Client ID: MW-2 | | | | | |
| | | | | 09/05/2002 | W |
| Benzene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Ethylbenzene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Methyl-tert-butyl ether | SW8020F | 5.1 | UG/L | | 09/11/2002 |
| Toluene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Xylenes | SW8020F | ND<1.0 | UG/L | | 09/11/2002 |
| Diesel Fuel #2 | CATH | 27.1 | MG/L | | 09/13/2002 |
| Sample: 02-1249-03 Client ID: MW-3 | | | | | |
| | | | | 09/05/2002 | W |
| Benzene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Ethylbenzene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Methyl-tert-butyl ether | SW8020F | 31.3 | UG/L | | 09/11/2002 |
| Toluene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Xylenes | SW8020F | ND<1.0 | UG/L | | 09/11/2002 |
| Diesel Fuel #2 | CATH | 1.99 | MG/L | | 09/13/2002 |



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CA ELAP#1753

C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 02-1249
 Client: Env. Restoration Services
 Project: DISALVO TRUCKING

Date Reported: 09/17/2002

MTBE, Benzene, Toluene, Ethylbenzene and Xylenes by SW8020F
 Diesel Range Hydrocarbons by CATFH with Silica Gel Cleanup

| Analyte | Method | Result | Unit | Date Sampled | Date Analyzed |
|------------------------------------|---------|--------|------|--------------|---------------|
| Sample: 02-1249-04 Client ID: MW-4 | | | | 09/05/2002 | W |
| Benzene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Ethylbenzene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Methyl-tert-butyl ether | SW8020F | 1.2 | UG/L | | 09/11/2002 |
| Toluene | SW8020F | ND<0.5 | UG/L | | 09/11/2002 |
| Xylenes | SW8020F | ND<1.0 | UG/L | | 09/11/2002 |
| Diesel Fuel #2 | CATFH | 17 | MG/L | | 09/13/2002 |



North State Labs

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CA ELAP# 1753

C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 02-1249
 Client: Env. Restoration Services
 Project: DISALVO TRUCKING

Date Reported: 09/17/2002

MTBE, Benzene, Toluene, Ethylbenzene and Xylenes by SW8020F
 Diesel Range Hydrocarbons by CATEH with Silica Gel Cleanup

| Analyte | Method | Reporting Limit | Unit | Blank | Avg MS/MSD Recovery | RPD |
|-------------------|---------|-----------------|------|-------|---------------------|-----|
| Benzene | SW8020F | 0.5 | UG/L | ND | 101/100 | 1 |
| Toluene | SW8020F | 0.5 | UG/L | ND | 111/106 | 5 |
| Ethylbenzene | SW8020F | 0.5 | UG/L | ND | 98/90 | 9 |
| Xylenes | SW8020F | 1.0 | UG/L | ND | 121/119 | 2 |
| Methyl-tert-butyl | SW8020F | 0.5 | UG/L | ND | 99/99 | 0 |
| Diesel Fuel #2 | CATEH | 0.05 | MG/L | ND | 85/80 | 6 |

ELAP Certificate NO:1753

Reviewed and Approved

John A. Murphy, Laboratory Director

Page 3 of 3

WELL PURGE LOGS

WATER-QUALITY SAMPLING INFORMATION

Project Name: DiSalvo Project No.: _____

Date: 9/5/02 Sample No.: _____

Samplers Name: B. Dalsted

Sampling Location: 4919 Tidewater Av. Oakland

Sampling Method: Disposable Bailor

Analyses Requested: TPH/d BTEX, MTBE

Number and Types of Sample Bottles Used: (1) 1 liter Amber
(2) 40ml vials

Method of Shipment: on ice

GROUND WATER

Well No.: MW-1 2-inch casing = 0.16 gal/ft

Well Diameter (in.) 2" 4-inch casing = 0.65 gal/ft

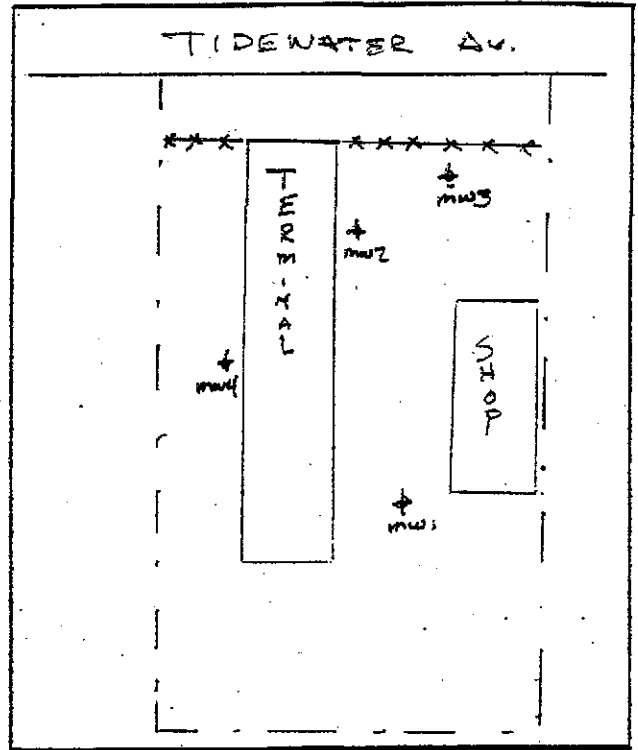
Depth to Water, Static (ft) 2.15 5-inch casing = 1.02 gal/ft

Water in Well Box no 6-inch casing = 1.47 gal/ft

Well Depth (ft) ±8'

Height of Water Column in Well 5.85

Water Volume in Well 1.4



LOCATION MAP

| TIME | DEPTH TO WATER (feet) | VOLUME WITHDRAWN (gallons) | TEMP (F) | pH (S.U.) | COND (mbos/cm) | OTHER | REMARKS |
|------|-----------------------|----------------------------|----------|-----------|----------------|-------|---------|
| 2:20 | | 1.5 | 70.0 | 7.51 | 2.87 | | cloudy |
| 2:27 | | 3 | 69.5 | 7.47 | 2.79 | | |
| 2:35 | | 5 | 69.7 | 7.34 | 2.61 | | sampled |
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Suggested Method for Purging Well Bailor

WATER-QUALITY SAMPLING INFORMATION

Project Name: DiSalvo Project No.: _____

Date: 9/5/02 Sample No.: _____

Samplers Name: B. DiSalvo

Sampling Location: 4919 Tidewater Av., Oakland

Sampling Method: Disposable Bailer

Analyses Requested: TPH/d BTEX, MTBE

Number and Types of Sample Bottles Used: (1) 1 liter Amber
(2) 40 ml vials

Method of Shipment: on ice

GROUND WATER

Well No.: MW-2

2-inch casing = 0.16 gal/ft

Well Diameter (in.) 2"

4-inch casing = 0.65 gal/ft

Depth to Water, Static (ft) 3.06

5-inch casing = 1.02 gal/ft

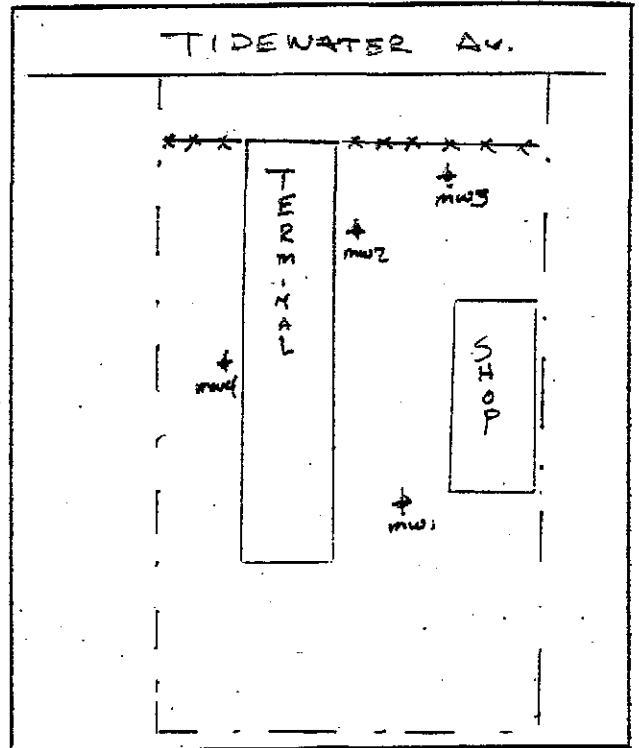
6-inch casing = 1.47 gal/ft

Water in Well Box no

Well Depth (ft) ±8'

Height of Water Column in Well ±5

Water Volume in Well 0.8



| TIME | DEPTH TO WATER (feet) | VOLUME WITHDRAWN (gallons) | TEMP (F) | pH (S.U.) | COND (mhos/cm) | OTHER | REMARKS |
|-------------|-----------------------|----------------------------|-------------|-------------|----------------|-------|----------------|
| <u>1:55</u> | | <u>1.5</u> | <u>69.3</u> | <u>7.12</u> | <u>2.62</u> | | <u>cloudy</u> |
| <u>2:05</u> | | <u>3</u> | <u>69.5</u> | <u>7.16</u> | <u>2.68</u> | | |
| <u>2:15</u> | | <u>5</u> | <u>69.7</u> | <u>7.08</u> | <u>2.72</u> | | <u>sampled</u> |
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Suggested Method for Purging Well Bailer

WATER-QUALITY SAMPLING INFORMATION

Project Name: DiSalvo Project No.: _____

Date: 9/5/02 Sample No.: _____

Samplers Name: B. Halsted

Sampling Location: 4919 Tidewater Av. Oakland

Sampling Method: Disposable Bailor

Analyses Requested: TPH/d BTEK, MTBE

Number and Types of Sample Bottles Used: (1) 1 liter Amber
(2) 40ml vials

Method of Shipment: on ice

GROUND WATER

Well No.: MW-3

2-inch casing = 0.16 gal/ft

Well Diameter (in.) 2"

4-inch casing = 0.65 gal/ft

Depth to Water, Static (ft) 2.34

5-inch casing = 1.02 gal/ft

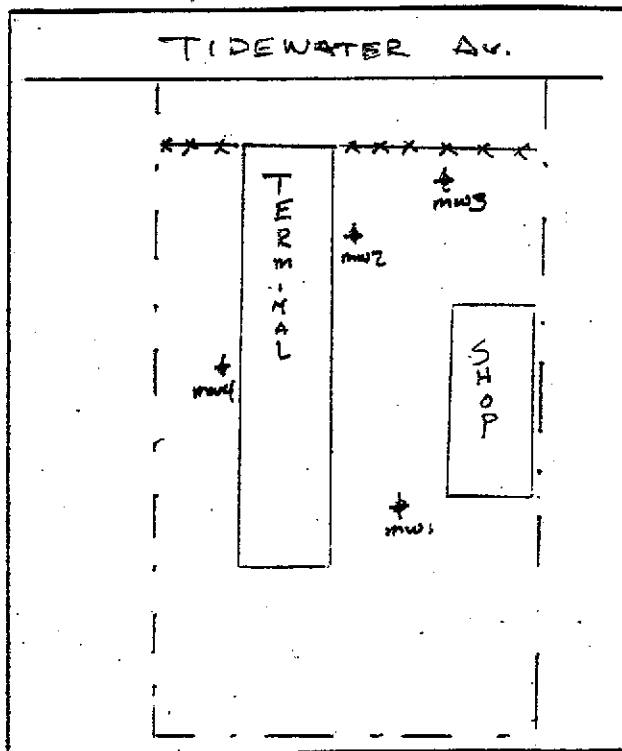
6-inch casing = 1.47 gal/ft

Water in Well Box no

Well Depth (ft) _____

Height of Water Column in Well _____

Water Volume in Well _____



LOCATION MAP

| TIME | DEPTH TO WATER (feet) | VOLUME WITHDRAWN (gallons) | TEMP (F) | pH (S.U.) | COND (mhos/cm) | OTHER | REMARKS |
|------------|-----------------------|----------------------------|-------------|-------------|-----------------------|-------|----------------|
| <u>130</u> | | <u>1.5</u> | <u>68.1</u> | <u>7.58</u> | <u>3²¹</u> | | <u>cloudy</u> |
| <u>137</u> | | <u>3</u> | <u>68.9</u> | <u>7.29</u> | <u>2⁹⁵</u> | | |
| <u>145</u> | | <u>5</u> | <u>69.2</u> | <u>7.22</u> | <u>2⁹⁰</u> | | <u>sampled</u> |
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Suggested Method for Purging Well Bailor

WATER-QUALITY SAMPLING INFORMATION

Project Name: DiSalvo Project No.: _____

Date: 9/5/02 Sample No.: _____

Samplers Name: B. Dalsted

Sampling Location: 4919 Tidewater Av. Oakland

Sampling Method: Disposable Bailor

Analyses Requested: TPH/d BTEK, MTBE

Number and Types of Sample Bottles Used: (1) 1 liter Amber
(2) 40ml vials

Method of Shipment: on ice

GROUND WATER

Well No.: MW-4 2-inch casing = 0.16 gal/ft

Well Diameter (in.) 2" 4-inch casing = 0.65 gal/ft

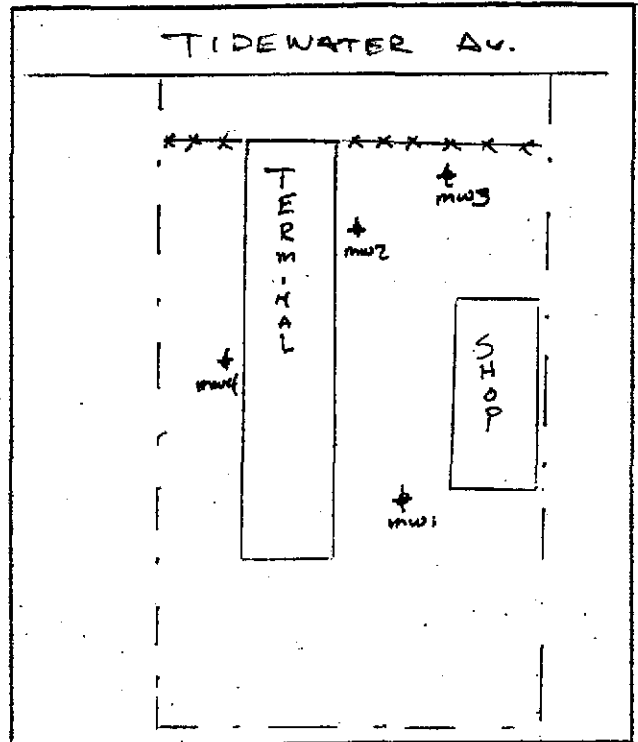
Depth to Water, Static (ft) 3.31 5-inch casing = 1.02 gal/ft

Water in Well Box no 6-inch casing = 1.47 gal/ft

Well Depth (ft) ±8'

Height of Water Column in Well ±4.7

Water Volume in Well 0.75



LOCATION MAP

| TIME | DEPTH TO WATER (feet) | VOLUME WITHDRAWN (gallons) | TEMP (F) | pH (S.U.) | COND (mhos/cm) | OTHER | REMARKS |
|-----------------|-----------------------|----------------------------|----------|-----------|----------------|-------|---------|
| 245 | | 1.5 | 70.3 | 7.71 | 2.70 | | cloudy |
| 255 | | 3 | 70.1 | 7.54 | 2.77 | | |
| 3 00 | | 4.5 | 70.0 | 7.40 | 2.69 | | sampled |
| | | | | | | | |
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Suggested Method for Purging Well Bailor