



groundwater resources inc.

5400 ALDRIN CT.
BAKERSFIELD, CALIFORNIA 93313

General Engineering Contractor
Class AVHaz License No. 520768

October 8, 1990

Gil Wistar
Alameda County Department
of Environmental Health
80 Swan Way, Rm. 200
Oakland, CA 94621

Re: Scotsman Corp., Dublin CA
Groundwater Remediation Update

Dear Mr. Wistar:

This letter is an update on the groundwater remediation project underway at the Scotsman Corporation facility, 6055 Scarlett Ct., Dublin. Water samples were collected from all of the monitoring wells at the site on August 15, 1990 and analyzed for BTX&E and TPH (gasoline). Enclosed are the analysis results from the samples collected from the wells.

Depth to groundwater measurements were recorded on August 15, 1990 and calculated to Mean Sea Level as follows:

| WELL | WELL ELEVATION | WATER ELEVATION | DEPTH TO WATER |
|------|----------------|-----------------|----------------|
| MW-1 | 328.86 | 322.35 ft msl | 6.51 ft |
| MW-2 | 329.50 | 324.19 ft msl | 5.31 ft |
| MW-3 | 327.69 | 324.07 ft msl | 3.62 ft |
| MW-4 | 329.19 | 322.74 ft msl | 6.45 ft |
| MW-5 | ** | ** | *** |
| MW-6 | 328.16 | 322.94 ft msl | 5.22 ft |
| MW-7 | ** | ** | 5.80 ft |
| MW-8 | ** | ** | 5.85 ft |
| RW-1 | ** | ** | *** |

** Well not surveyed

*** Well not measured

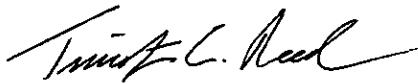
Calculations indicate the direction of the groundwater gradient to be 33 degrees west of south with a slope of approximately .43 feet per 100 feet (see Plate 1). The pump from RW-1 will be relocated into MW-6 periodically to assure remediation of the entire plume. Isopleth maps showing the areas of equal concentrations for benzene and total petroleum hydrocarbons remaining in the groundwater have been mapped and are presented on Plates 2 & 3. As of October 4, 1990 approximately 101,000 gallons of groundwater have been treated.

Gil Wistar
Alameda County Department
of Environmental Health
October 8, 1990
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The next quarterly report will be submitted to your office in December, 1990 with results of analysis for the monitoring wells and an update on remediation progress. Samples of the effluent water are sampled on a monthly basis and results are submitted to the Dublin San Ramon Services District.

If you have further questions or require additional information, please give me a call at (805) 835-7700.

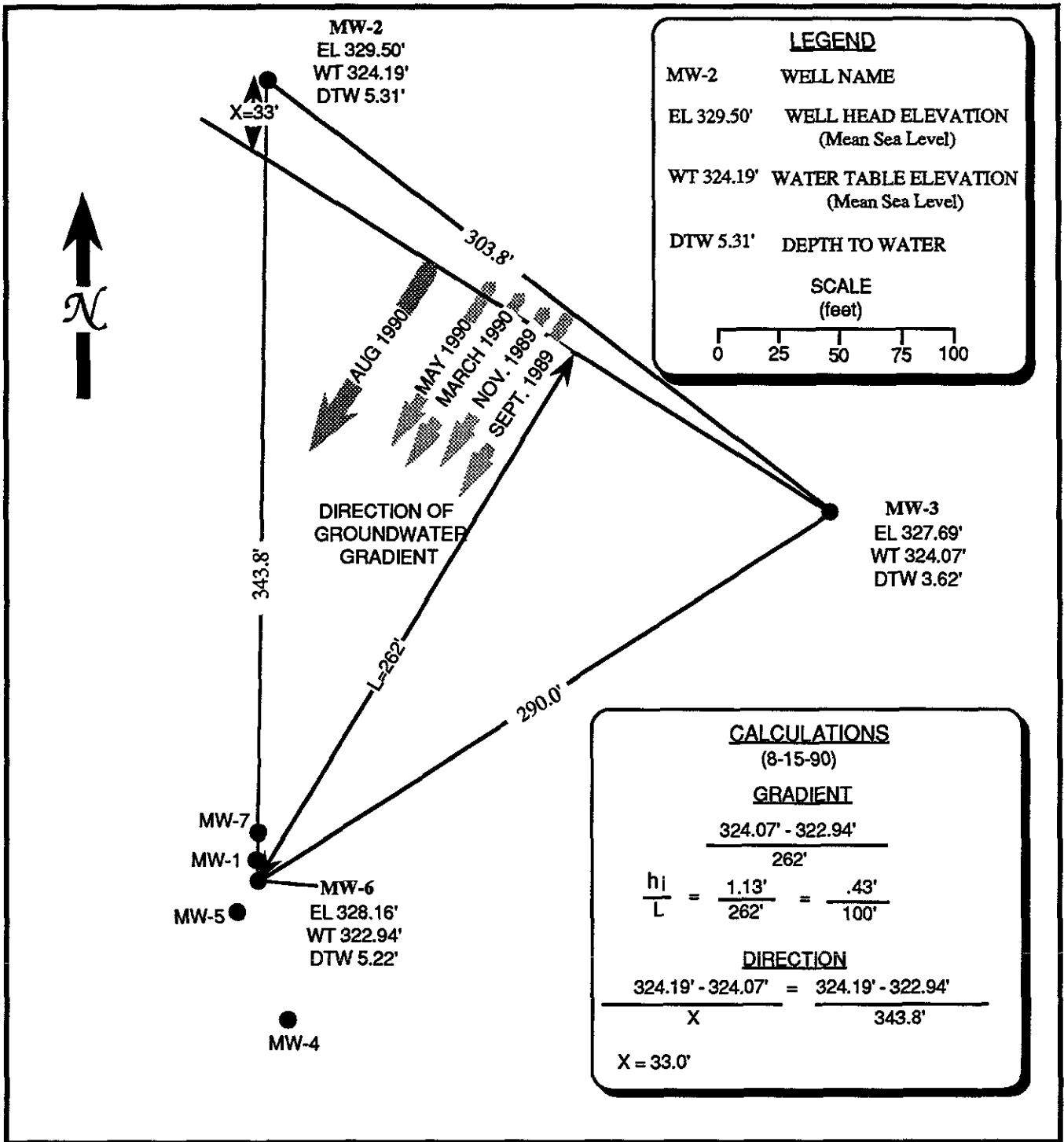
Sincerely,



Timothy C. Reed
Project Geologist

Encl.

cc: Ms. Amanda Howard, First Interstate Bank
Bud Gennoy, J.P. Gennoy Realty



LEGEND

MW-2 WELL NAME

EL 329.50' WELL HEAD ELEVATION (Mean Sea Level)

WT 324.19' WATER TABLE ELEVATION (Mean Sea Level)

DTW 5.31' DEPTH TO WATER

SCALE
(feet)

0 25 50 75 100

CALCULATIONS
(8-15-90)

GRADIENT

$$\frac{324.07' - 322.94'}{262'}$$

$$\frac{h_i}{L} = \frac{1.13'}{262'} = \frac{.43'}{100'}$$

DIRECTION

$$\frac{324.19' - 324.07'}{X} = \frac{324.19' - 322.94'}{343.8'}$$

X = 33.0'

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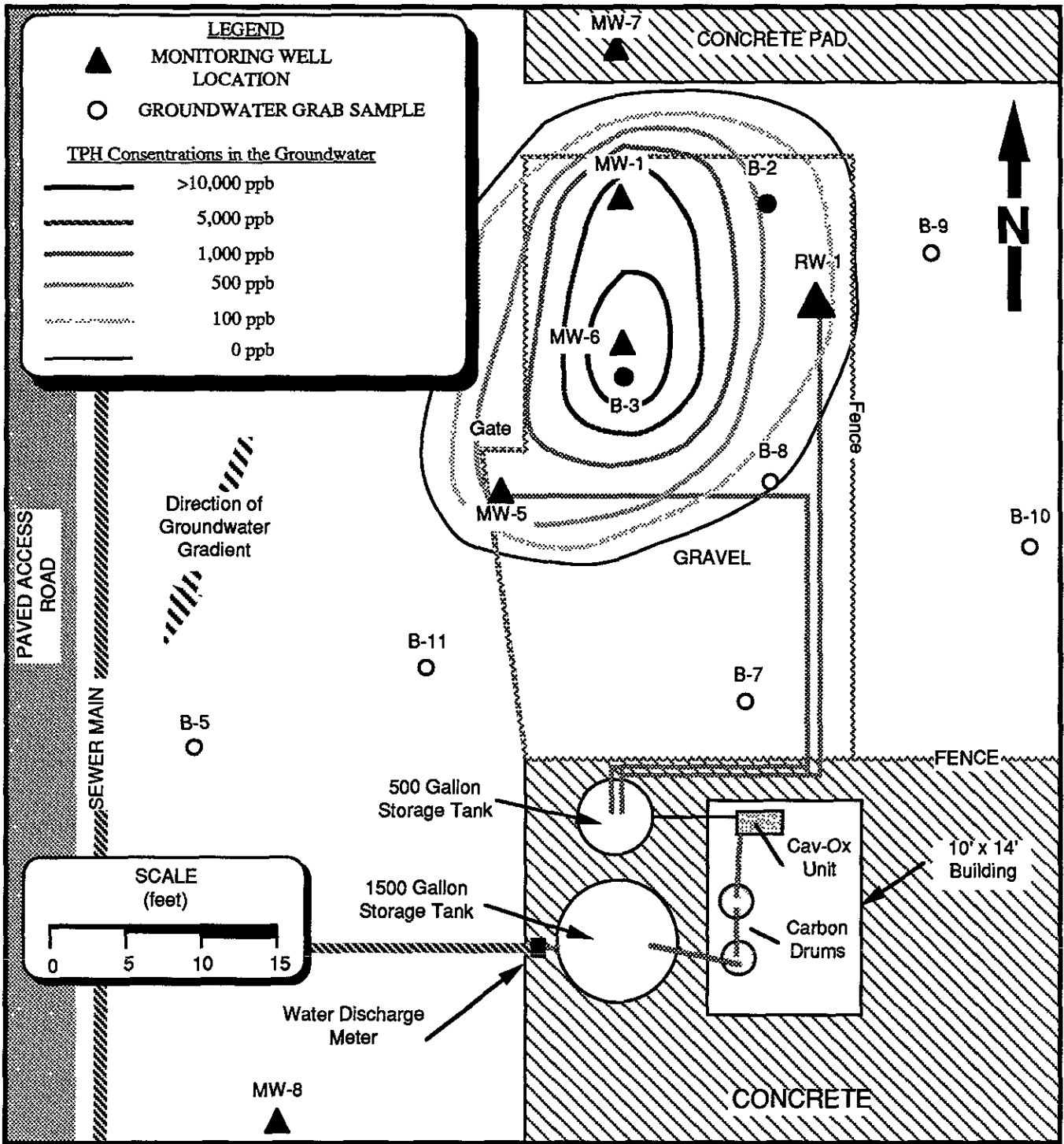
Project Number: 55018


10-9-90

SCOTSMAN CORPORATION
DUBLIN, CALIFORNIA

SHALLOW GROUNDWATER GRADIENT MAP
August 15, 1990

PLATE
1

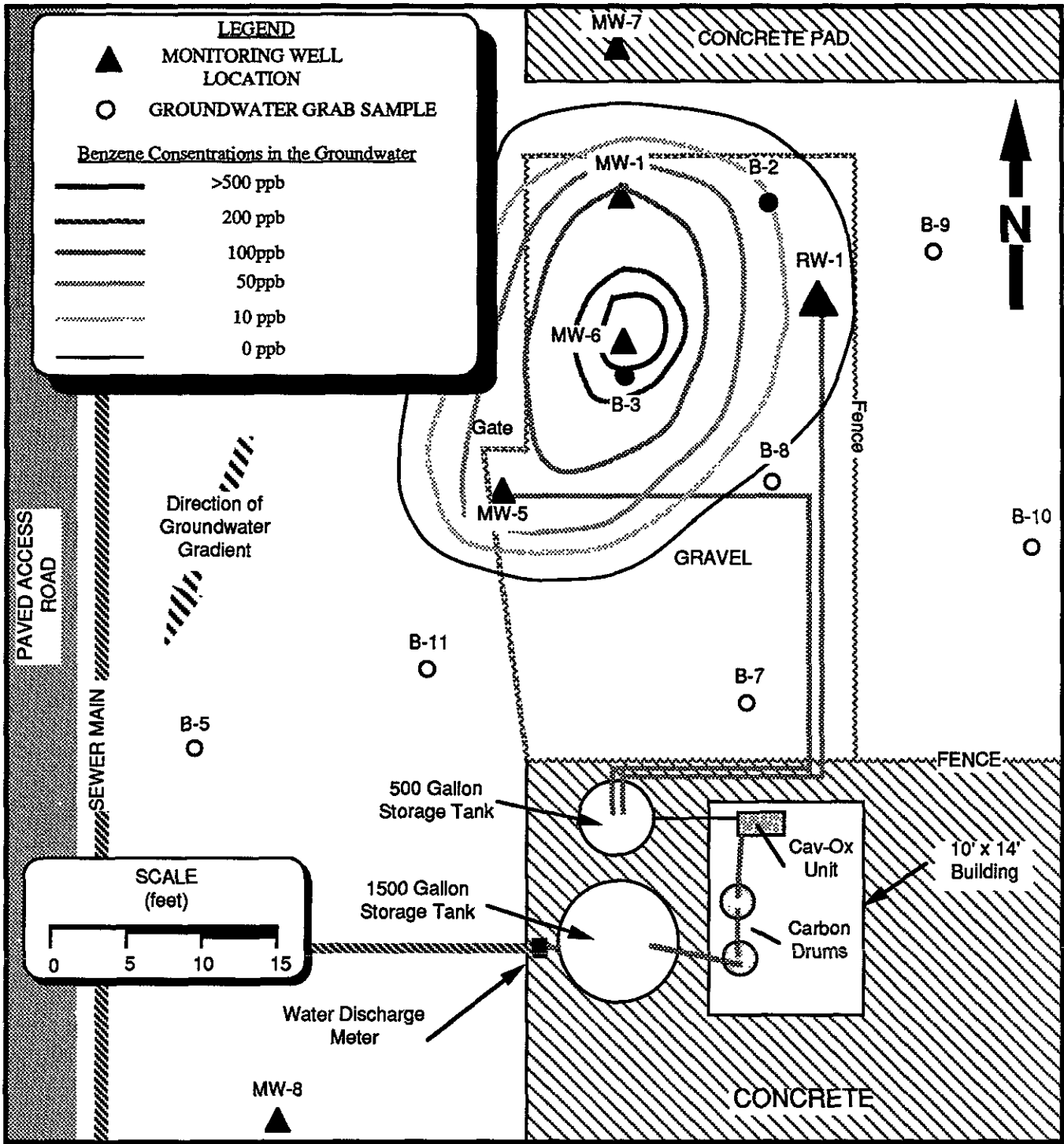



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SCOTSMAN CORP.
DUBLIN, CA.
TOTAL PETROLEUM
HYDROCARBON ISOPLETH MAP

PLATE
2

8-29-90



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 8-29-90

SCOTSMAN CORP.
DUBLIN, CA.

BENZENE ISOPLETH MAP

PLATE
3

Client Name: Groundwater Resources, Inc.
Address : 5400 Aldrin Court
Bakersfield, CA 93313

Date samples received : 08-16-90
Date analysis completed: 08-17-90
Date of report : 08-17-90

Project # 55018
P.O. # 4701G

Attn: Mr. Tim Reed

RESULTS OF ANALYSIS:

| # 2804 ID: MW-1 | ugm/L | MDL, ugm/L |
|------------------|--------|------------|
| Benzene | 110. | 0.5 |
| Toluene | 40. | 0.5 |
| Ethylbenzene | 87. | 0.5 |
| p-Xylene | 630. | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | 110. | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | 8,200. | 50.0 |

Method of Analysis for BTX/TPH (Gasoline): 5030/8020

MDL = Minimum Detection Level

TPH = Total Petroleum Hydrocarbons

ugm/L = micrograms per liter

ND = None Detected



Brian Thompson
Laboratory Supervisor

RESULTS OF ANALYSIS

| # 2805 ID: MW-2 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | ND | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| p-Xylene | ND | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | ND | 50.0 |

| # 2806 ID: MW-3 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | ND | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| p-Xylene | ND | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | ND | 50.0 |

| # 2807 ID: MW-4 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | 0.52 | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| p-Xylene | ND | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | ND | 50.0 |



 Brian Thompson
 Laboratory Supervisor

RESULTS OF ANALYSIS

| # 2808 ID: MW-5 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | 74. | 0.5 |
| Toluene | 11. | 0.5 |
| Ethylbenzene | 32. | 0.5 |
| p-Xylene | 4.7 | 0.5 |
| m-Xylene | 6.3 | 0.5 |
| o-Xylene | 5.7 | 0.5 |
| Isopropylbenzene | 4.7 | 0.5 |
| TPH (Gasoline) | 620. | 50.0 |

| # 2809 ID: MW-6 | ugm/L | MDL, ugm/L |
|------------------|---------|------------|
| Benzene | 1200. | 0.5 |
| Toluene | 25. | 0.5 |
| Ethylbenzene | 830. | 0.5 |
| p-Xylene | 5.4 | 0.5 |
| m-Xylene | 1.3 | 0.5 |
| o-Xylene | 4.1 | 0.5 |
| Isopropylbenzene | 87. | 0.5 |
| TPH (Gasoline) | 15,500. | 50.0 |

| # 2810 ID: MW-7 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | ND | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| p-Xylene | ND | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | ND | 50.0 |



 Brian Thompson
 Laboratory Supervisor

RESULTS OF ANALYSIS

| # 2811 ID: MW-8 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | ND | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| p-Xylene | ND | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | ND | 50.0 |

| # 2812 ID: RW-1 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | 5.7 | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | 2.4 | 0.5 |
| p-Xylene | 1.0 | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | 110. | 50.0 |


| # 2813 ID: WS-1 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | 4.7 | 0.5 |
| Toluene | 0.50 | 0.5 |
| Ethylbenzene | 1.6 | 0.5 |
| p-Xylene | ND | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | 68. | 50.0 |


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RESULTS OF ANALYSIS

| # 2814 ID: WS-3 | ugm/L | MDL, ugm/L |
|------------------|-------|------------|
| Benzene | ND | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| p-Xylene | ND | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | ND | 50.0 |

| # 2815 ID: Travel Blank | ugm/L | MDL, ugm/L |
|-------------------------|-------|------------|
| Benzene | ND | 0.5 |
| Toluene | ND | 0.5 |
| Ethylbenzene | ND | 0.5 |
| p-Xylene | ND | 0.5 |
| m-Xylene | ND | 0.5 |
| o-Xylene | ND | 0.5 |
| Isopropylbenzene | ND | 0.5 |
| TPH (Gasoline) | ND | 50.0 |


Brian Thompson
Laboratory Supervisor

GROUNDWATER RESOURCES INC.

A RESNA Company

CHAIN OF CUSTODY RECORD

P.O Box 9383
Bakersfield, California
Telephone: (805) 835-7700
Tele-Fax: (805) 835-7717

| LAB DESTINATION: <u>SML</u> | | PROJECT NUMBER: <u>55018</u> | | | CONDITION ON RECEIPT | PROJECT CONTACT: <u>TIM REED</u> | | |
|---|---------------|------------------------------|-------|-----------------|---------------------------------------|----------------------------------|-------------|----------------|
| SAMPLER(S): (Signature) <u>Tim Reed</u> | | P.O. NUMBER: <u>47016</u> | | | | COUNTY: <u>ALAMEDA</u> | | |
| LAB NUMBER | SAMPLE NUMBER | DATE | TIME | SAMPLE LOCATION | | ANALYSIS REQUESTED | SAMPLE TYPE | CONTAINER TYPE |
| 2804 | MW-1 | 8-15-90 | 13:15 | | STATE, TPH (GAS) ^{USHS} LUFT | WATER | VDA | |
| 2805 | MW-2 | | 12:10 | | | | | |
| 2806 | MW-3 | | 12:15 | | | | | |
| 2807 | MW-4 | | 13:00 | | | | | |
| 2808 | MW-5 | | 13:30 | | | | | |
| 2809 | MW-6 | | 13:20 | | | | | |
| 2810 | MW-7 | | 13:10 | | | | | |
| 2811 | MW-8 | | 12:20 | | | | | |
| 2812 | RW-1 | | 13:30 | | | | | |
| 2813 | WS-1 | | 16:45 | | | | | |
| 2814 | WS-3 | | 16:45 | | | | | |
| 2815 | TRIAL BLANK | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

SPECIAL INSTRUCTIONS: _____

POSSIBLE SAMPLE HAZARDS: _____

Samples cool & sealed

- 1. Relinquished by: Tim Reed Date/Time: 8/16/90/10:36 Received by: Mary [Signature] Date/Time: 8-16-90 10:37
- 1. Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____
- 1. Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____