# Second Semi-Annual Groundwater Monitoring Report (Third Quarter of 2000) Former Unocal 76 Service Station 20405 and 20629 Redwood Road Castro Valley, California

10-18-00

**BSK & ASSOCIATES**
**Geotechnical Consultants, Inc.**

**BSK JOB NO. P92057.3**

**Submitted to:**
**R.T. Nahas Company**
**Castro Valley, California**

**October 18, 2000**



BSK

**R.T. NAHAS COMPANY** *Since 1947*
REAL ESTATE DEVELOPERS AND INVESTORS



20630 PATIO DRIVE
CASTRO VALLEY, CALIFORNIA 94546
TELEPHONE (510) 538-9600
FAX (510) 881-7618

October 19, 2000

Mr. Scott Seery
Hazardous Materials Specialist
Alameda County Health Care Services
1131 Harbor Bay Pkwy., Room 250
Oakland, CA 94502-6577

Dear Scott:

Enclosed is the September 2000 Semi-Annual Groundwater Monitoring Report. I am interested in hearing your expert opinion on what is happening with the levels of contaminant.

Let me know how we should proceed.

Sincerely,

Randall E. Nahas

Enclosure
REN/tar

BSK
1181 Quarry Lane, Building 300
Pleasanton, CA 94566
(925) 462-4000 • FAX (925) 462-6283

October 18, 2000

**BSK JOB NO. P92057.3**

R. T. Nahas Company/Eden Managements
20630 Patio Drive
Castro Valley, CA 94546

Attention: Mr. Randy T. Nahas

Subject: Second Semi-Annual
Groundwater Monitoring Report
(Third Quarter of 2000)
Former Unocal 76 Service Station
20405 and 20629 Redwood Road
Castro Valley, California

Dear Mr. Nahas:

As requested and authorized, we have performed groundwater monitoring well sampling at the above-referenced facility. This report presents the groundwater data obtained during this sampling event, conclusions based on this event's data, and recommendations for further action. The site location is shown on Figure 1, Vicinity Map. The well locations are shown on Figure 2, Site Plan.

## GROUNDWATER MONITORING ACTIVITIES – SEPTEMBER 2000

### General

Second semi-annual monitoring of groundwater Monitoring Wells MW-2, MW-3, MW-5, MW-6, MW-7 and MW-101(Figure 2, Site Plan) was performed on September 17, 2000. The groundwater monitoring well MW-4 was abandoned during last year's remediation activities at the Site. The semi-annual sampling schedule–with monitoring activities in the first and third quarter of each year–was requested by Mr. Scott Seery, case officer for the ACDEH, in a letter, dated November 2, 1999, addressed to the R. T. Nahas Company. Field procedures and observations are provided in the following text and Tables.

### Field Work

All wells were purged using an electric submersible pump. Three to four well casing volumes of water were removed from each well. Purge effluent was field monitored for pH, temperature and conductivity during purging to assess the influx of fresh formation water

into the well. Purged water was transferred to 55-gallon, DOT-approved steel drums for holding. Each drum was labeled according to its contents, content source, and date of accumulation.

Prior to purging, the depth to water in each well was measured using a Solinst Electric Well Sounder, marked in twentieths of a foot. The water depth was then interpolated to the 0.01 foot increment from the tape. Each well was subsequently examined for floating and sinking immiscible product layers and sheen, using a clear bailer having dual check valves for point-source sampling. The piezometric contour and elevation, and well water elevations, are presented in Figure 3, Groundwater Elevation Contour Map.

Upon purge completion, each well was again measured to confirm a minimum of 80% well recovery prior to sampling. Water sampling was then performed with a Teflon® point-source bailer. Sampling for contaminants was performed in the order of decreasing contaminant volatility. Each water sample was decanted into the appropriate container with preservative (as necessary), sealed, labeled and refrigerated for delivery to our State-certified laboratory.

A Well Field Log was prepared for each well sampled, recording the water depth, well volume, pH, water temperature, conductivity and other data. The Well Field Logs are presented as Figures 4.1 through 4.6.

**Site Hydrology**

The groundwater level in all six wells was measured on September 17, 2000, in order to assess the flow direction and gradient. On that date, groundwater flow was generally to the south, with a gradient of 0.01 ft/ft.

**Chemical Analyses**

Water samples obtained from each of the wells were analyzed for constituents related to gasoline, Total Petroleum Hydrocarbons as Gasoline (TPHg), Benzene, Toluene, Ethylbenzene and Xylene (BTEX) and Methyl-t-Butyl Ether (MTBE).

The contaminants tested for are those specified by ACDEH, in their letter dated, November 2, 1999. Current and former analysis results are presented for comparison in Table 1. The Chemical Test Data Sheets are presented in Appendix A along with the Project Chain-of-Custody record.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

Trace contaminant concentrations associated with gasoline (BTEX compounds) are generally at lower concentrations compared to the previous results from the March 2000 sampling event in Wells MW-2 and MW-3. Total Petroleum Hydrocarbons as Gasoline, BTEX and MTBE were not detected in Well MW-5. The Total Petroleum Hydrocarbons as Gasoline detected in well MW-7 probably represents Perchloroethane as was demonstrated in past sampling events.

MTBE was detected in Wells MW-2, MW-3, MW-6 and MW-101. The MTBE detected in well MW-101 was confirmed using EPA Method 8260 as requested by ACDEH.

### Recommendations

The six groundwater monitoring wells located at the Site should be sampled on a semi-annual basis as requested by ACDEH (letter dated November 2, 1999). The next semi-annual sampling event is scheduled for March 2001.

## REPORT DISTRIBUTION

Copies of this report should be submitted to the Alameda County Department of Environmental Health for their review. We are providing you with extra copies for this purpose. We understand that copies of the report may be forwarded by ACDEH to the Regional Water Quality Control Board in Oakland for their review.

Alameda County Department of Environmental Health
1181 Harbor Bay Parkway
Alameda, CA 94502

## LIMITATIONS

The findings and conclusions presented in this report are based on field review and observations, and from the limited testing program described in this report. This report has been prepared in accordance with generally accepted methodologies and standards of practice in the area. No other warranties, expressed or implied, are made as to the findings, conclusions and recommendations included in the report.

The findings of this report are valid as of the present. The passage of time, natural processes or human intervention on the property or adjacent property can cause changed conditions which can invalidate the findings and conclusions presented in this report.

* * *

BSK is pleased to continue to be of service to you during this project. If you have questions concerning the contents of the report, please do not hesitate to contact us.

Respectfully submitted,
***BSK & Associates***

Girish Agrawal, Ph.D., P.E., G.E.
Senior Project Engineer
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Project Manager
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(G:\DOCUMENT\ENV\Projects\NAHAS\P92057(Sep2000).wpd)

Distribution:
R. T. Nahas Company (4 copies)

The following are attached and complete this report:

| | | |
|---|---|---|
| TABLE | 1 | Summary of Groundwater Analysis |
| FIGURE | 1 | Vicinity Map |
| FIGURE | 2 | Site Plan |
| FIGURE | 3 | Groundwater Elevation Contour Map |
| FIGURES | 4.1-4.6 | Well Field Logs |
| FIGURE | 5 | BTEX Concentrations in Groundwater - MW-2 |
| FIGURE | 6 | BTEX Concentrations in Groundwater - MW-3 |
| Appendix "A" | | Laboratory Chemical Test Data Sheets and Project Chain-of-Custody Record (7 sheets) |

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## TABLE 1, SUMMARY OF GROUNDWATER ANALYSIS, Results in ug/L



| Sample Date | Well Number | Benzene | Toluene | Ethyl-Benzene | Xylenes | Methyl-t-Butyl Ether | TPH Gasoline | TPH Diesel | Total Oil & Grease | EPA 601 |
|---|---|---|---|---|---|---|---|---|---|---|
| September 2000 | MW-2 | 0.89 | ND | 1 | 0.65 | 620 | 180 | — | — | — |
| | MW-3 | ND | ND | ND | ND | 98 | ND | — | — | — |
| | MW-5 | ND | ND | ND | ND | ND | ND | — | — | — |
| | MW-6 | ND | ND | ND | ND | 170 | 54 | — | — | — |
| | MW-7 | 3 | 0.32 | 13 | 27 | ND | 770 | — | — | — |
| | MW-101 | 1100 | 35 | 2900 | 400 | 1600[2]/1800[3] | 12000 | — | — | — |
| September 1995 | MW-101 | 170 | 94 | 150 | 710 | – | 9400 | | | |
| March 2000 | MW-2 | 14 | 0.92 | 16 | 24 | 1400 | 560 | -- | -- | -- |
| | MW-3 | 0.61 | ND | ND | ND | 240 | 96 | -- | -- | -- |
| | MW-5 | ND | ND | ND | ND | ND | ND | -- | -- | -- |
| | MW-6 | ND | 0.49 | ND | ND | 260 | 78 | -- | -- | -- |
| | MW-7 | 890 | ND | ND | ND | ND | ND | -- | -- | -- |
| | MW-101 | 2500 | 490 | 4300 | 10000 | 2400[2]/1400[3] | 40000 | -- | -- | -- |
| November 1997 | MW-2 | 6.8 | 0.64 | 4.7 | 8.2 | 1200 | 360 | -- | -- | -- |
| | MW-3 | 1.7 | 1.4 | 2.3 | 8.3 | 65 | 62 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | ND | ND | ND | -- | -- |
| | MW-5 | ND | ND | ND | ND | ND | ND | ND | -- | -- |
| | MW-6 | ND | ND | ND | ND | 9 | ND | ND | -- | -- |
| | MW-7 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| April 1997 | MW-2 | 23 | 1.6 | 21 | 31.4 | 1800 | 470 | -- | -- | -- |
| | MW-3 | 7.3 | ND | 3.3 | 5.4 | 230 | 120 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | ND | ND | ND | -- | -- |
| | MW-5 | ND | ND | ND | ND | ND | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | ND | ND | -- | -- | -- |
| | MW-7 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| October 1996 | MW-2 | 9.4 | 0.5 | 7.2 | 9.4 | 1400 | 180 | -- | -- | -- |
| | MW-3 | 3.8 | 1.5 | 2.1 | 6.8 | 55 | 79 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | ND | ND | ND | -- | -- |
| | MW-5 | ND | ND | ND | ND | ND | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | 17 | ND | -- | -- | -- |
| | MW-7 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| April 1996 | MW-2 | 41 | 2.8 | 27 | 50 | -- | 690 | -- | -- | -- |
| | MW-3 | 8.4 | 1.6 | 4.7 | 14 | -- | 170 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | -- | -- |
| | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | 2.9 | 2.9 | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | -- | -- | -- | -- |

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## TABLE 1, SUMMARY OF GROUNDWATER ANALYSIS, Results in ug/L



| Sample Date | Well Number | Benzene | Toluene | Ethyl-Benzene | Xylenes | Methyl-t-Butyl Ether | TPH Gasoline | TPH Diesel | Total Oil & Grease | EPA 601 |
|---|---|---|---|---|---|---|---|---|---|---|
| October | MW-2 | 7.4 | ND | 5.1 | 5.5 | -- | 450 | -- | -- | -- |
| 1995 | MW-3 | 9 | 3.9 | 8.5 | 34 | -- | 340 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | -- | -- |
| | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | -- | -- | -- | -- |
| April | MW-2 | 72 | 2.8 | 47 | 22 | -- | 480 | -- | -- | -- |
| 1995 | MW-3 | 26 | 0.6 | 40 | 19 | -- | 450 | -- | -- | -- |
| April | MW-4 | ND | ND | ND | ND | -- | ND | ND | ND | -- |
| 1995 | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | -- | -- | -- | -- |
| January | MW-2 | 48 | 2.8 | 15 | 27 | -- | 440 | -- | -- | -- |
| 1995 | MW-3 | 26 | 0.6 | 14 | 45 | -- | 250 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | 2000 | -- |
| October | MW-2 | 2.8 | ND | 2.9 | 1.8 | -- | 97 | -- | -- | -- |
| 1994 | MW-3 | 0.9 | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-4 | ND | 36 | ND | 1.3 | -- | 70 | ND | ND | -- |
| | MW-5 | ND | 71 | 0.4 | 1.7 | -- | 87 | -- | -- | -- |
| | MW-6 | 0.4 | 140 | 0.5 | 2.3 | -- | 160 | -- | -- | -- |
| July | MW-2 | 14 | 0.7 | 5.8 | 12 | -- | 180 | -- | -- | -- |
| 1994 | MW-3 | 7.2 | 0.4 | 1.6 | 4.6 | -- | 52 | -- | -- | -- |
| | MW-4 | ND | 0.6 | ND | ND | -- | ND | 86 | ND | -- |
| April | MW-2 | 23 | 1.1 | 8.2 | 17 | -- | 270 | -- | -- | -- |
| 1994 | MW-3 | 17 | 1 | 4.9 | 24 | -- | 62 | -- | -- | -- |
| | MW-4 | ND | ND | ND | 0.4 | -- | ND | ND | ND | -- |
| | MW-5 | ND | 0.4 | ND | 1 | -- | ND | -- | -- | -- |
| | MW-6 | ND | 0.3 | ND | 0.4 | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | 360 (1) | | -- | -- |
| January | MW-2 | 13 | 3.4 | 4.9 | 9.2 | -- | 130 | -- | -- | -- |
| 1994 | MW-3 | 5.5 | 2.1 | 2.6 | 14 | -- | 69 | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | 330 (1) | | -- | -- |
| October | MW-2 | 4 | ND | 2.3 | 3.1 | -- | 98 | -- | -- | -- |
| 1993 | MW-3 | 5 | ND | 0.6 | 1.2 | -- | ND | -- | -- | -- |
| | MW-4 | 0.4 | ND | ND | 0.4 | -- | ND | ND | ND | Tetrachloroethene 0.7 |
| | | | | | | -- | | | | Trichloroethene 0.9 |
| | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | 0.7 | -- | 360 (1) | | -- | -- |

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## TABLE 1, SUMMARY OF GROUNDWATER ANALYSIS, Results in ug/L



| Sample Date | Well Number | Benzene | Toluene | Ethyl-Benzene | Xylenes | Methyl-t-Butyl Ether | TPH Gasoline | TPH Diesel | Total Oil & Grease | EPA 601 |
|---|---|---|---|---|---|---|---|---|---|---|
| July 1993 | MW-2 | 17 | 1.1 | 6 | 12 | -- | 220 | -- | -- | -- |
| | MW-3 | 24 | 11 | 14 | 82 | -- | 330 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | 1000 | -- |
| | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | 680 (1) | | -- | -- |
| March 1993 | MW-2 | 110 | 32 | 67 | 28 | -- | 720 | -- | -- | 1,2-Dichloroethane 0.6 |
| | MW-3 | 32 | 0.9 | 64 | 13 | -- | 330 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | ND | ND |
| March 1993 | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | Tetrachloroethane 0.8 |
| | MW-6 | ND | ND | ND | ND | -- | ND | -- | -- | Tetrachloroethane 3.5 |
| | MW-7 | ND | ND | ND | ND | -- | 830 (1) | -- | -- | Tetrachloroethene 3,700 |
| | | | | | | -- | | | | Trichloroethene 210 |
| January 1993 | MW-2 | 11 | 5.1 | 1.4 | 6.3 | -- | 170 | -- | -- | -- |
| | MW-3 | 1.2 | 1 | 0.6 | 4.1 | -- | ND | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | ND | -- |
| | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | 1900 (1) | | -- | -- |
| November 1992 | MW-7 | -- | -- | -- | -- | -- | 2700 (1) | ND | -- | Chlorobenzene 2.0<br>Chloroform 2.0<br>cis-1,2-Dichloroethene 180<br>trans-1,2-Dichloroethene 1.5<br>Tetrachloroethene 14,000<br>Trichloroethene 660 |
| October 1992 | MW-2 | 2.3 | ND | 2.3 | 3 | -- | ND | -- | -- | -- |
| | MW-3 | 2.1 | ND | ND | 0.3 | -- | ND | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | 120 | ND | -- |
| | MW-5 | ND | 0.4 | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | 3900 (1) | | -- | -- |
| July 1992 | MW-2 | 10 | ND | 0.6 | 2.3 | -- | 84 | -- | -- | -- |
| | MW-3 | 1.3 | 0.4 | ND | 1.3 | -- | ND | -- | -- | -- |
| | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | ND | ND | ND | ND | -- | 830 (1) | | -- | -- |
| April 1992 | MW-2 | 70 | 0.3 | 15 | 7 | -- | 300 | -- | -- | -- |
| | MW-3 | 1 | 0.4 | ND | 0.9 | -- | ND | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | ND | -- |

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## TABLE 1, SUMMARY OF GROUNDWATER ANALYSIS, Results in ug/L



| Sample Date | Well Number | Benzene | Toluene | Ethyl-Benzene | Xylenes | Methyl-t-Butyl Ether | TPH Gasoline | TPH Diesel | Total Oil & Grease | EPA 601 |
|---|---|---|---|---|---|---|---|---|---|---|
| April 1992 | MW-5 | ND | ND | ND | ND | -- | ND | -- | -- | -- |
| | MW-6 | ND | 0.3 | ND | ND | -- | ND | -- | -- | -- |
| | MW-7 | 0.4 | 0.3 | 0.3 | 0.9 | -- | 1300 (1) | | -- | -- |
| January 1992 | MW-2 | 480 | 870 | 160 | 860 | -- | 5200 | -- | -- | -- |
| | MW-3 | 4 | 10 | 2 | 8 | -- | 60 | -- | -- | -- |
| October 1991 | MW-2 | 2.9 | ND | 2.5 | 6 | -- | 170 | -- | -- | -- |
| | MW-3 | ND | ND | ND | ND | -- | ND | ND | ND | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | ND | -- |
| July 1991 | MW-2 | 14 | 1 | 17 | 8 | -- | 220 | -- | -- | -- |
| | MW-3 | 14 | 14 | 33 | 8 | -- | 220 | -- | -- | -- |
| April 1991 | MW-2 | 640 | 520 | 170 | 790 | -- | 4800 | -- | -- | -- |
| | MW-3 | 450 | 270 | 150 | 760 | -- | 3600 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | ND | -- |
| January 1991 | MW-2 | 50 | 33 | 22 | 110 | -- | 430 | -- | -- | -- |
| | MW-3 | 29 | 3.3 | 9.7 | 34 | -- | 110 | -- | -- | -- |
| August 1990 | MW-2 | 21 | 3.9 | 7.2 | 28 | -- | 180 | -- | -- | -- |
| | MW-3 | 55 | 3.8 | 20 | 59 | -- | 290 | -- | -- | -- |
| | MW-4 | ND | ND | ND | ND | -- | ND | ND | ND | -- |
| Maximum Contaminant Level (MCL) | | 1 | 150 | 700 | 1750 | NA | NA | NA | NA | Chlorobenzene - NA<br>Chloroform - NA<br>cis-1,2-Dichloroethene 6.0<br>trans-1,2-Dichloroethene 10.0<br>1,2-Dichloroethane 0.5<br>Tetrachloroethene 5.0<br>Trichloroethene 5.0 |

ND = None Detected

-- = Not Analyzed

NA = Not Available

1 = TPHg values have demonstrated to represent Perchloroethane presence

2 = MTBE by EPA 8015/8020

3 = MTBE by EPA 8260

MCLs from California Code of Regulations Title 22, Article 5.5

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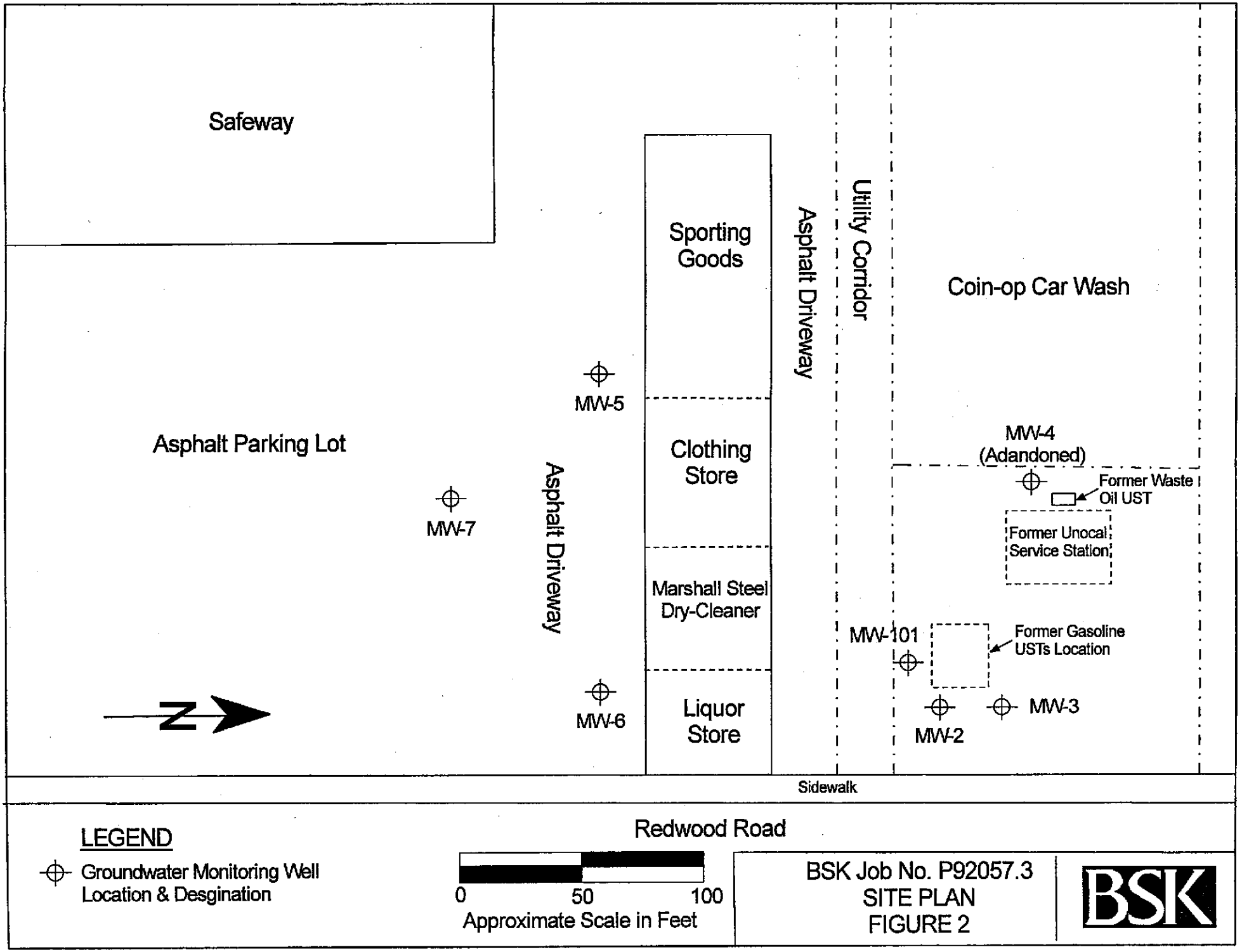
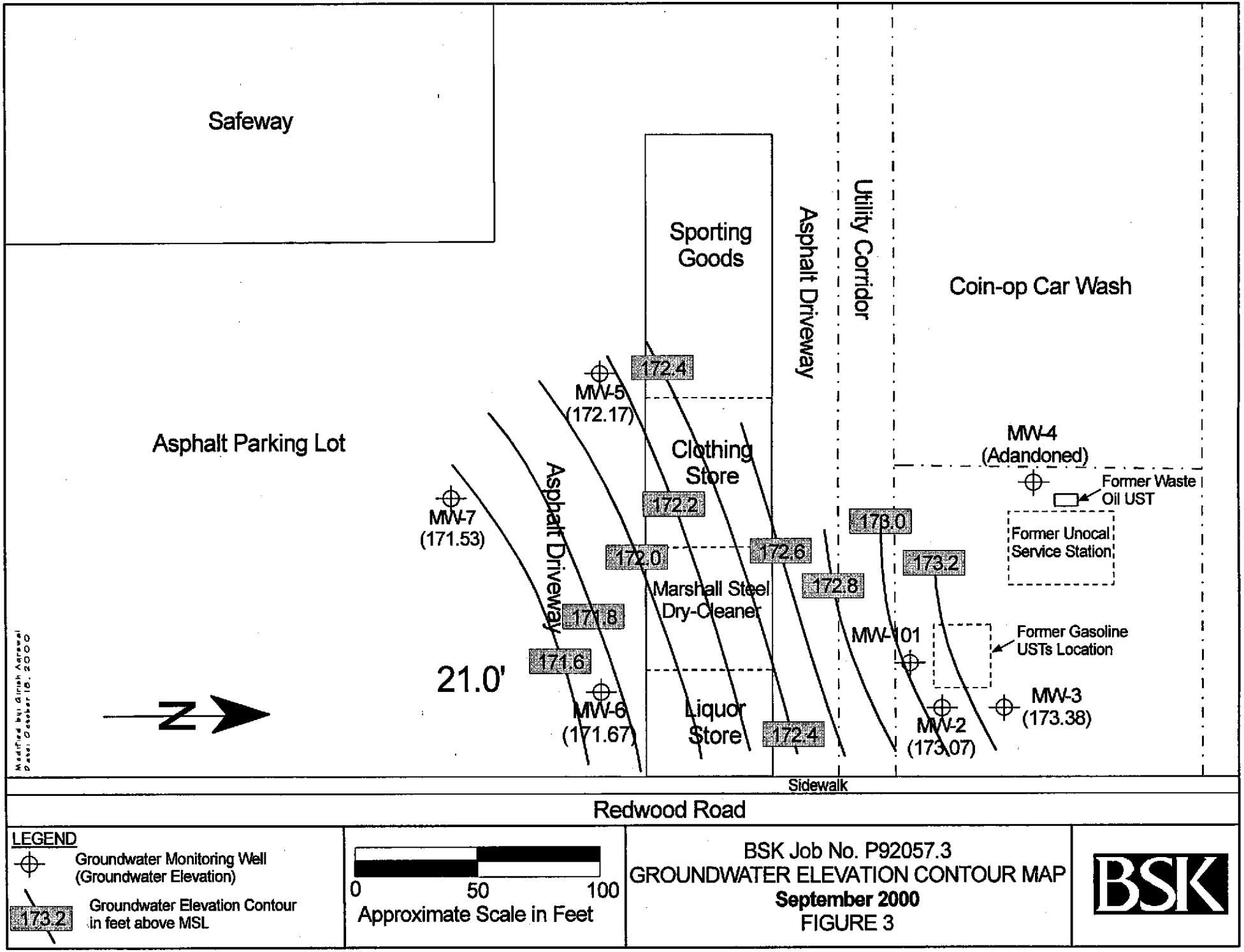
| | | |
|---|---|---|
| Semi-Annual<br>Groundwater Monitoring Report<br>Former Unocal 76 Service Station<br>20405 and 20629 Redwood Road<br>Castro Valley, California | VICINITY MAP<br>FIGURE: 1<br>BSK Job No. P92057.3 | BSK |


Safeway
Sporting Goods
Clothing Store
Marshall Steel Dry-Cleaner
Liquor Store
Asphalt Driveway
Utility Corridor
Asphalt Driveway
Coin-op Car Wash
Asphalt Parking Lot
MW-5
MW-7
MW-6
MW-4 (Adandoned)
Former Waste Oil UST
Former Unocal Service Station
MW-101
Former Gasoline USTs Location
MW-2
MW-3
N
Sidewalk
Redwood Road
LEGEND
Groundwater Monitoring Well Location & Desgination
0
50
100
Approximate Scale in Feet
BSK Job No. P92057.3
SITE PLAN
FIGURE 2
BSK


Safeway
Sporting Goods
Asphalt Driveway
Utility Corridor
Coin-op Car Wash
Asphalt Parking Lot
MW-5
(172.17)
172.4
Clothing Store
MW-4
(Adandoned)
Former Waste Oil UST
MW-7
(171.53)
172.2
173.0
Former Unocal Service Station
Asphalt Driveway
172.0
172.6
173.2
172.8
Marshall Steel Dry-Cleaner
171.8
MW-101
Former Gasoline USTs Location
171.6
21.0'
MW-6
(171.67)
Liquor Store
172.4
MW-2
(173.07)
MW-3
(173.38)
N
Modified by Girish Agrawal
Date: October 16, 2000
Sidewalk
Redwood Road
LEGEND
Groundwater Monitoring Well (Groundwater Elevation)
173.2
Groundwater Elevation Contour in feet above MSL
0
50
100
Approximate Scale in Feet
BSK Job No. P92057.3
GROUNDWATER ELEVATION CONTOUR MAP
September 2000
FIGURE 3
BSK

BSK Job No. P92057.3
Date: September 2000
Figure No. 4.1

# WELL FIELD LOG

**Well Observation:** **Date:** 9/17/2000
**Sample Collection:** **Date:** 9/17/2000

**Project Name:** Groundwater Monitoring
**Location:** Nahas/Former Union 76
**Personnel:** FRG/JG
**Weather:** Clear, Warm

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-2 | Date Purged | 9/17/2000 |
| Depth to Water - feet( TOC) | 10.40 | Purge Method | Submersible Pump |
| Well Depth (feet) | 28.85 | | |
| Water Volume (gallons) | 3.0 | Purge Begin | 12:09 |
| Reference Elevation - feet(TOC) | +183.47 | Purge End | 12:18 |
| Groundwater Elevation (feet) | 173.07 | Purge Rate | 1.33 gpm |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None Observed
**Bottom:** None Observed
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 12:12 | 3.0 | 759 | 7.1 | 75 | Light brown tint |
| 12:14 | 6.0 | 721 | 7.0 | 75 | Clearing |
| 12:15 | 9.0 | 719 | 6.9 | 75 | Clearing |
| 12:18 | 12.0 | 720 | 6.9 | 75 | Clear |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 12:25 | BTEX/MTBE & TPHg | 2-40ml glass VOC with HCl | 11 feet |

**Field Notes:**

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BSK Job No. P92057.3
Date: September 2000
Figure No. 4.2

# WELL FIELD LOG

**Well Observation:** **Date:** 9/17/2000
**Sample Collection:** **Date:** 9/17/2000

**Project Name:** Groundwater Monitoring
**Location:** Nahas/Former Union 76
**Personnel:** FRG/JG
**Weather:** Clear, Warm

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-3 | Date Purged | 9/17/2000 |
| Depth to Water - feet(TOC) | 10.65 | Purge Method | Submersible Pump |
| Well Depth (feet) | 28.85 | | |
| Water Volume (gallons) | 2.9 | Purge Begin | 12:57 |
| Reference Elevation - feet(TOC) | +184.03 | Purge End | 13:05 |
| Groundwater Elevation (feet) | 173.38 | Purge Rate | 1.5 gpm |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None Observed
**Bottom:** None Observed
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 12:59 | 3 | 987 | 7.2 | 80 | Light brown tint |
| 13:01 | 6 | 989 | 7.0 | 76 | Clearing |
| 13:03 | 9 | 970 | 7.1 | 74 | Clear |
| 13:05 | 12 | 969 | 7.1 | 74 | Clear |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 13:10 | BTEX/MTBE & TPHg | 2-40ml glass VOC with HCl | 11 feet |

**Field Notes:**

BSK

BSK Job No. P92057.3
Date: September 2000
Figure No. 4.3

# WELL FIELD LOG

**Well Observation:** **Date:** 9/17/2000
**Sample Collection:** **Date:** 9/17/2000

**Project Name:** Groundwater Monitoring
**Location:** Nahas/Former Union 76
**Personnel:** FRG/JG
**Weather:** Clear, Warm

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-101 | Date Purged | 9/17/2000 |
| Depth to Water - feet(TOC) | 11.35 | Purge Method | Submersible Pump |
| Well Depth (feet) | 29.5 | | |
| Water Volume (gallons) | 12 | Purge Begin | 13:42 |
| Reference Elevation - feet(TOC) | — | Purge End | 14:18 |
| Groundwater Elevation (feet) | — | Purge Rate | 1.5 gpm |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None observed, slight gasoline odor
**Bottom:** Dark gray at very bottom, slight gasoline odor
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 13:47 | 12 | 698 | 7.2 | 82 | Dark gray |
| 13:52 | 24 | 716 | 7.0 | 78 | Clearing |
| 14:09 | 36 | 786 | 7.2 | 78 | Clearing |
| 14:18 | 48 | 789 | 7.2 | 78 | — |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 14:30 | BTEX/MTBE & TPHg | 2-40ml glass VOC with HCl | 14 feet |

**Field Notes:**

BSK

BSK Job No. P92057.3
Date: September 2000
Figure No. 4.4

# WELL FIELD LOG

**Well Observation:** **Date:** 9/17/2000
**Sample Collection:** **Date:** 9/17/2000

**Project Name:** Groundwater Monitoring
**Location:** Nahas/Former Union 76
**Personnel:** FRG/JG
**Weather:** Clear, Warm

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-5 | Date Purged | 9/17/2000 |
| Depth to Water - feet(TOC) | 11.75 | Purge Method | Submersible Pump |
| Well Depth (feet) | 34.5 | | |
| Water Volume (gallons) | 3.7 | Purge Begin | 10:41 |
| Reference Elevation - feet(TOC) | +183.92 | Purge End | 10:52 |
| Groundwater Elevation (feet) | 172.17 | Purge Rate | 1.5 gpm |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None Observed
**Bottom:** None Observed
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (micromhos) | pH | TEMP (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 10:44 | 4 | 773 | 7.4 | 76 | Light brown tint |
| 10:46 | 8 | 843 | 6.9 | 69 | Clearing |
| 10:49 | 12 | 759 | 6.9 | 70 | Clearing |
| 10:52 | 16 | 745 | 6.9 | 70 | — |

## SAMPLE COLLECTION DATA

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 11:00 | BTEX/MTBE & TPHg | 2-40ml glass VOC with HCl | 12 feet |

**Field Notes:**

BSK

BSK Job No. P92057.3
Date: September 2000
Figure No. 4.5

# WELL FIELD LOG

**Well Observation:** **Date:** 9/17/2000
**Sample Collection:** **Date:** 9/17/2000

**Project Name:** Groundwater Monitoring
**Location:** Nahas/Former Union 76
**Personnel:** FRG/JG
**Weather:** Clear, Warm

**WELL INFORMATION:**

| | | | |
|---|---|---|---|
| Well Number | MW-6 | Date Purged | 9/17/2000 |
| Depth to Water - feet(TOC) | 11.93 | Purge Method | Submersible Pump |
| Well Depth (feet) | 26.78 | | |
| Water Volume (gallons) | 2.4 | Purge Begin | 11:24 |
| Reference Elevation - feet(TOC) | +183.60 | Purge End | 11:30 |
| Groundwater Elevation (feet) | 171.67 | Purge Rate | 1.5 gpm |
| Measurement Technique | Solinst Electric Well Sounder | | |

**IMMISCIBLE LAYERS:**

**Top:** None Observed
**Bottom:** None Observed, Light Brown Tint
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

**WELL DEVELOPMENT/PURGE DATA:**

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 11:26 | 2.5 | 878 | 6.9 | 77 | Light brown tint |
| 11:27 | 5.0 | 908 | 6.9 | 75 | Light brown tint |
| 11:28 | 7.5 | 924 | 6.9 | 75 | Clearing |
| 11:30 | 10.0 | 925 | 6.9 | 75 | Clearing |

**SAMPLE COLLECTION DATA**

**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 11:35 | BTEX/MTBE & TPHg | 2-40ml glass VOC with HCl | 12 feet |

**Field Notes:**

BSK

BSK Job No. P92057.3
Date: September 2000
Figure No. 4.6

# WELL FIELD LOG

**Well Observation:** **Date:** 9/17/2000
**Sample Collection:** **Date:** 9/17/2000

**Project Name:** Groundwater Monitoring
**Location:** Nahas/Former Union 76
**Personnel:** FRG/JG
**Weather:** Clear, Warm

## WELL INFORMATION:

| | | | |
|---|---|---|---|
| Well Number | MW-7 | Date Purged | 9/17/2000 |
| Depth to Water - feet(TOC) | 10.89 | Purge Method | Submersible Pump |
| Well Depth (feet) | 28.0 | | |
| Water Volume (gallons) | 2.7 | Purge Begin | 14:48 |
| Reference Elevation - feet(TOC) | +182.42 | Purge End | 14:57 |
| Groundwater Elevation (feet) | 171.53 | Purge Rate | 1.33 gpm |
| Measurement Technique | Solinst Electric Well Sounder | | |

## IMMISCIBLE LAYERS:

**Top:** None Observed
**Bottom:** None Observed
**Detection Method:** Visual
**Collection Method:** Clear Point-Source Bailer

## WELL DEVELOPMENT/PURGE DATA:

| TIME | VOLUME REMOVED (gallons) | ELECTRICAL CONDUCTIVITY (micromhos) | pH | TEMP. (°F) | COLOR/COMMENTS |
|---|---|---|---|---|---|
| 14:50 | 3 | 1,061 | 7.1 | 82 | Light brown tint |
| 14:52 | 6 | 1,066 | 6.9 | 81 | Clear |
| 14:54 | 9 | 1,047 | 6.9 | 78 | Clear |
| 14:57 | 12 | 1,045 | 6.9 | 78 | Clear |

## SAMPLE COLLECTION DATA

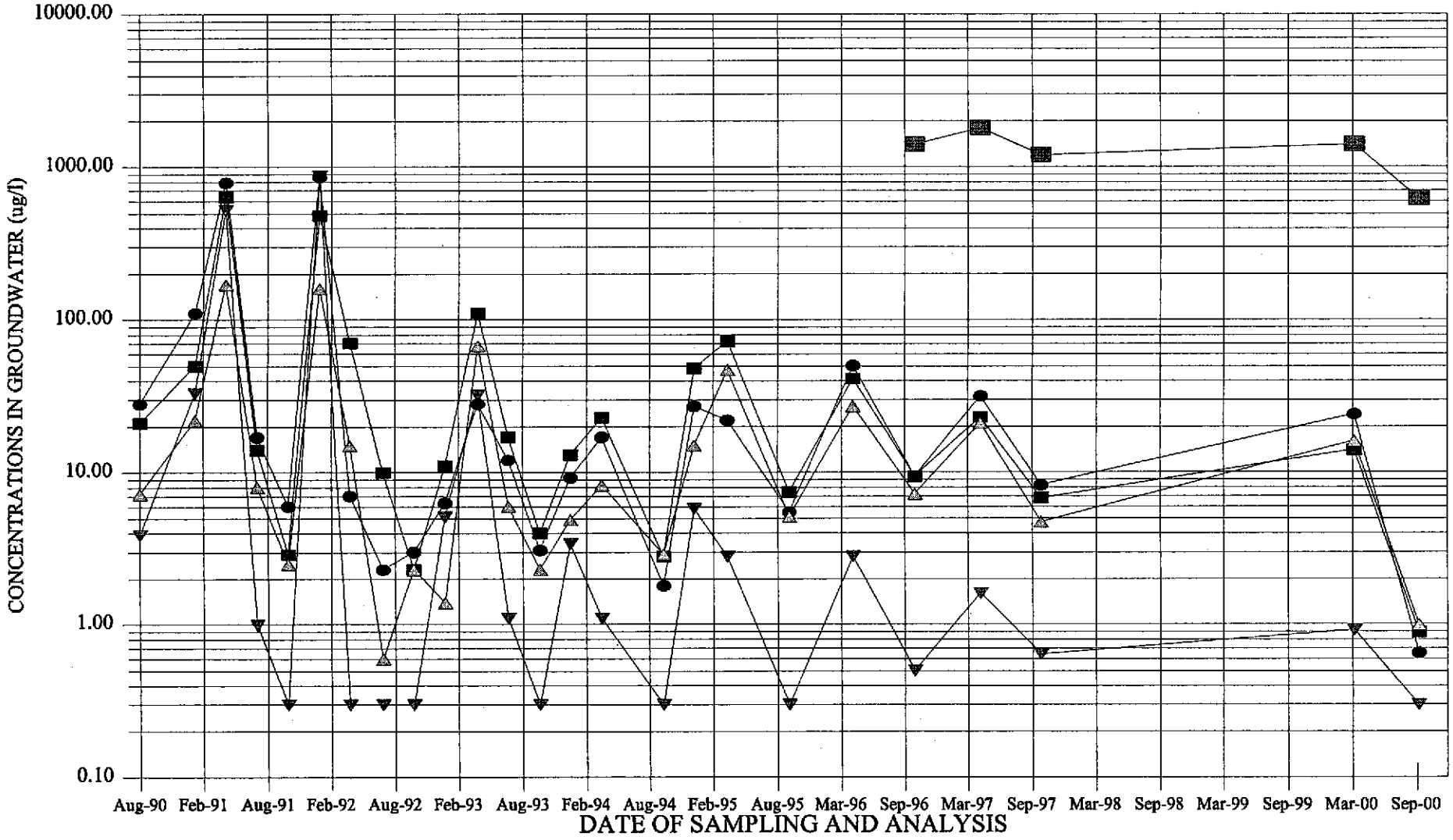
**Sampling Equipment:** Teflon Bailer

| TIME | ANALYSIS | AMOUNT/CONTAINER USED | SAMPLE INTERVAL |
|---|---|---|---|
| 15:05 | BTEX/MTBE & TPHg | 2-40ml glass VOC with HCL | 12 feet |

**Field Notes**

BSK

# BTEX/MTBE CONCENTRATIONS IN GROUNDWATER(MW-2)



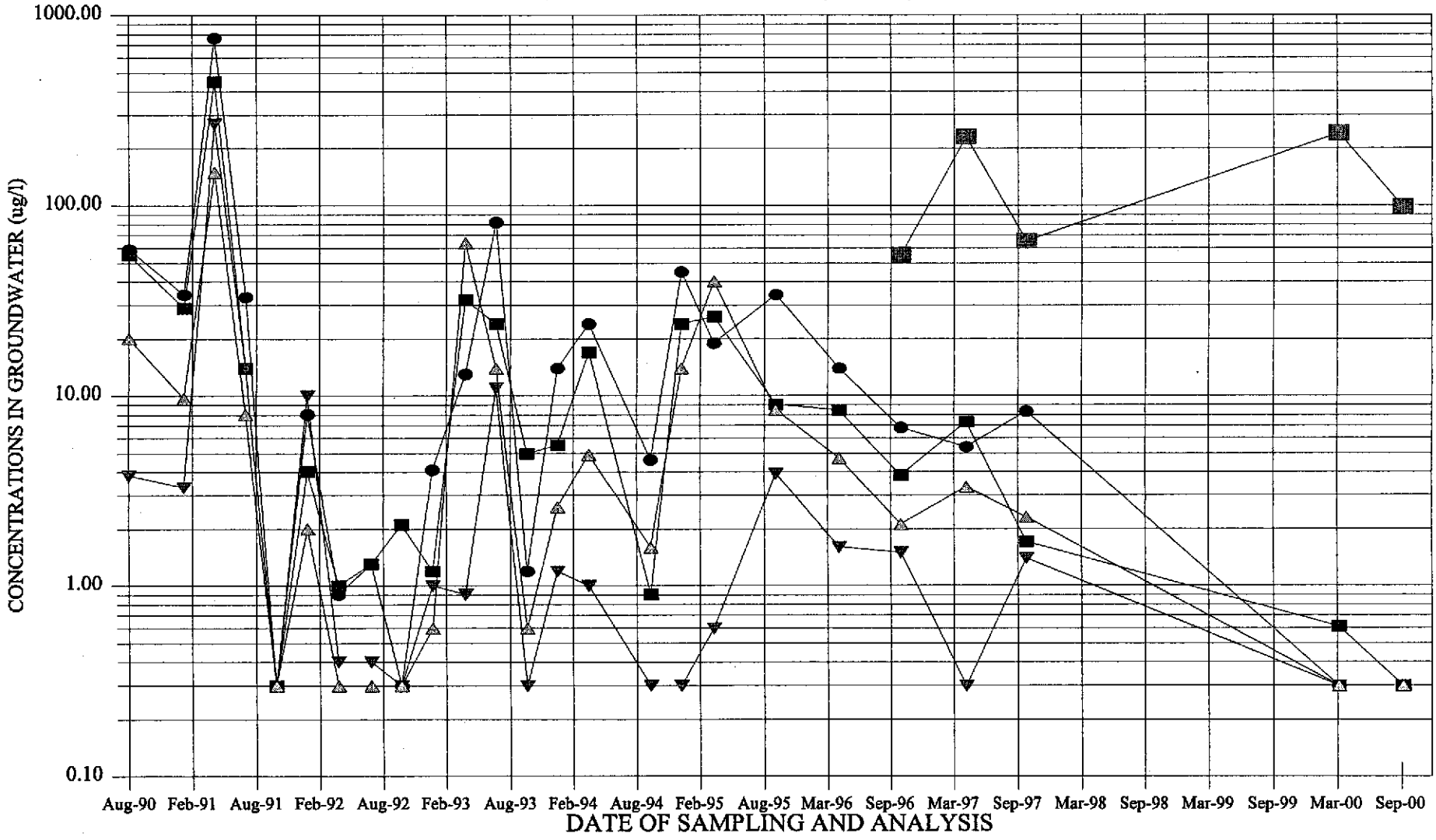

BSK Job No. P92057.3

SEPTEMBER 2000

FIGURE 5

BSK

# BTEX/MTBE CONCENTRATIONS IN GROUNDWATER(MW-3)




BSK Job No. P92057.3

SEPTEMBER 2000

FIGURE 6

BSK

# APPENDIX "A"

# CHEMICAL TEST DATA SHEETS
# AND
# PROJECT CHAIN-OF-CUSTODY RECORD
# (7 SHEETS)

BSK ANALYTICAL LABORATORIES

RECEIVED OCT 1 3 2000

# Cover Letter

10/04/2000

Alex Y. Eskandari
BSK and Associates - Pleasanton
1181 Quarry Lane Suite 300
Pleasanton, CA 94566

BSK Submission Number: 2000090667

Dear Alex Y. Eskandari:

BSK Analytical Laboratories adheres to a quality assurance plan that has been approved by the State of California Department of Health Services. Our Environmental Laboratory Accreditation Program (ELAP) certification number is 1180.

BSK Analytical Laboratories has prepared this certificate of analysis in response to your request for analytical services. All information was taken from your Chain of Custody or related correspondence. BSK completed all sample handling and analytical procedures within the Laboratory's standard acceptability criteria with any exceptions noted below.

If additional clarification of any information is required, please contact our Client Services Department at (800)877-8310 or (559)497-2888.

Sincerely,

BSK Analytical Laboratories

Authorizing Signature(s)

Juliane Adams
Organic Laboratory Supervisor

Ko Yang
Inorganic Laboratory Supervisor

Cynthia Pigman
QA/QC Supervisor

BSK ANALYTICAL LABORATORIES

Alex Y. Eskandari
BSK and Associates - Pleasanton
1181 Quarry Lane Suite 300
Pleasanton, CA 94566

# Certificate of Analysis

Report Issue Date: 10/04/2000

**BSK Submission #: 2000090667**

**BSK Sample ID #: 62772**

Project ID: P92057 Project Desc: Nahas
Submission Comments:

Sample Type: Liquid
Sample Description: MW-2
Sample Comments:

Date Sampled: 09/17/2000
Time Sampled: 1225
Date Received: 09/20/2000

## Organics

| Analyte | Method | Result | Units | PQL | Dilution | DLR | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| TPH as Gasoline | EPA 8015(M) | **180** | µg/L | 50 | 1 | 50 | 09/22/2000 | 09/22/2000 |
| Methyl-t-Butyl Ether | EPA 8015/8020 | **620** | µg/L | 5 | 20 | 100 | 09/23/2000 | 09/23/2000 |
| Benzene | EPA 8020 | **0.89** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Ethylbenzene | EPA 8020 | **1.0** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Toluene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Total Xylenes | EPA 8020 | **0.65** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Cover Letter for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code: 

BSK ANALYTICAL LABORATORIES

Alex Y. Eskandari
BSK and Associates - Pleasanton
1181 Quarry Lane Suite 300
Pleasanton, CA 94566

# Certificate of Analysis

Report Issue Date: 10/04/2000

**BSK Submission #: 2000090667**

**BSK Sample ID #: 62773**

Project ID: P92057 Project Desc: Nahas
Submission Comments:

Sample Type: Liquid
Sample Description: MW-3
Sample Comments:

Date Sampled: 09/17/2000
Time Sampled: 1310
Date Received: 09/20/2000

## Organics

| Analyte | Method | Result | Units | PQL | Dilution | DLR | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| TPH as Gasoline | EPA 8015(M) | **ND** | µg/L | 50 | 1 | 50 | 09/22/2000 | 09/22/2000 |
| Methyl-t-Butyl Ether | EPA 8015/8020 | **98** | µg/L | 5 | 1 | 5 | 09/22/2000 | 09/22/2000 |
| Benzene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Ethylbenzene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Toluene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Total Xylenes | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Cover Letter for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

BSK ANALYTICAL LABORATORIES

Alex Y. Eskandari
BSK and Associates - Pleasanton
1181 Quarry Lane Suite 300
Pleasanton, CA 94566

# Certificate of Analysis

Report Issue Date: 10/04/2000

**BSK Submission #: 2000090667**

**BSK Sample ID #: 62770**

Project ID: P92057 Project Desc: Nahas
Submission Comments:

Sample Type: Liquid
Sample Description: MW-5
Sample Comments:

Date Sampled: 09/17/2000
Time Sampled: 1100
Date Received: 09/20/2000

## Organics

| Analyte | Method | Result | Units | PQL | Dilution | DLR | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| TPH as Gasoline | EPA 8015(M) | **ND** | µg/L | 50 | 1 | 50 | 09/22/2000 | 09/22/2000 |
| Methyl-t-Butyl Ether | EPA 8015/8020 | **ND** | µg/L | 5 | 1 | 5 | 09/22/2000 | 09/22/2000 |
| Benzene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Ethylbenzene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Toluene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Total Xylenes | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Cover Letter for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

BSK ANALYTICAL LABORATORIES

Alex Y. Eskandari
BSK and Associates - Pleasanton
1181 Quarry Lane Suite 300
Pleasanton, CA 94566

# Certificate of Analysis

Report Issue Date: 10/04/2000

**BSK Submission #: 2000090667**

**BSK Sample ID #: 62771**

Project ID: P92057 Project Desc: Nahas

Submission Comments:

Sample Type: Liquid
Sample Description: MW-6
Sample Comments:

Date Sampled: 09/17/2000
Time Sampled: 1135
Date Received: 09/20/2000

## Organics

| Analyte | Method | Result | Units | PQL | Dilution | DLR | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| TPH as Gasoline | EPA 8015(M) | **54** | µg/L | 50 | 1 | 50 | 09/22/2000 | 09/22/2000 |
| Methyl-t-Butyl Ether | EPA 8015/8020 | **170** | µg/L | 5 | 10 | 50 | 09/22/2000 | 09/22/2000 |
| Benzene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Ethylbenzene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Toluene | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |
| Total Xylenes | EPA 8020 | **ND** | µg/L | 0.3 | 1 | 0.3 | 09/22/2000 | 09/22/2000 |

LUFT Comments

| | |
|---|---|
| TPH as Gasoline | Individual peaks inconsistent with fuel fingerprint |

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Cover Letter for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

BSK ANALYTICAL LABORATORIES

Alex Y. Eskandari
BSK and Associates - Pleasanton
1181 Quarry Lane Suite 300
Pleasanton, CA 94566

# Certificate of Analysis

Report Issue Date: 10/04/2000

**BSK Submission #: 2000090667**

**BSK Sample ID #: 62775**

Project ID: P92057 Project Desc: Nahas

Submission Comments:

Sample Type: Liquid
Sample Description: MW-7
Sample Comments:

Date Sampled: 09/17/2000
Time Sampled: 1505
Date Received: 09/20/2000

## Organics

| Analyte | Method | Result | Units | PQL | Dilution | DLR | Prep Date | Analysis Date |
|---|---|---|---|---|---|---|---|---|
| TPH as Gasoline | EPA 8015(M) | **770** | µg/L | 50 | 1 | 50 | 09/25/2000 | 09/25/2000 |
| Methyl-t-Butyl Ether | EPA 8015/8020 | **ND** | µg/L | 5 | 1 | 5 | 09/25/2000 | 09/25/2000 |
| Benzene | EPA 8020 | **3.0** | µg/L | 0.3 | 1 | 0.3 | 09/25/2000 | 09/25/2000 |
| Ethylbenzene | EPA 8020 | **13** | µg/L | 0.3 | 1 | 0.3 | 09/25/2000 | 09/25/2000 |
| Toluene | EPA 8020 | **0.32** | µg/L | 0.3 | 1 | 0.3 | 09/25/2000 | 09/25/2000 |
| Total Xylenes | EPA 8020 | **27** | µg/L | 0.3 | 1 | 0.3 | 09/25/2000 | 09/25/2000 |

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Cover Letter for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

BSK ANALYTICAL LABORATORIES

Alex Y. Eskandari
BSK and Associates - Pleasanton
1181 Quarry Lane Suite 300
Pleasanton, CA 94566

# Certificate of Analysis

Report Issue Date: 10/09/2000

**BSK Submission #: 2000090667**

**BSK Sample ID #: 62774**

Project ID: P92057 Project Desc: Nahas
Submission Comments:

Sample Type: Liquid
Sample Description: MW-101
Sample Comments:

Date Sampled: 09/17/2000
Time Sampled: 1430
Date Received: 09/20/2000

## Organics

| Analyte | Method | Result | Units | PQL | Dilution | DLR | Prep Date | Analysis Date | |
|---|---|---|---|---|---|---|---|---|---|
| TPH as Gasoline | EPA 8015(M) | **12000** | µg/L | 50 | 40 | 2000 | 09/23/2000 | 09/23/2000 | |
| Methyl-t-Butyl Ether | EPA 8015/8020 | **1600** | µg/L | 5 | 40 | 200 | 09/23/2000 | 09/23/2000 | |
| Benzene | EPA 8020 | **1100** | µg/L | 0.3 | 40 | 12 | 09/23/2000 | 09/23/2000 | |
| Ethylbenzene | EPA 8020 | **2900** | µg/L | 0.3 | 40 | 12 | 09/23/2000 | 09/23/2000 | |
| Toluene | EPA 8020 | **35** | µg/L | 0.3 | 40 | 12 | 09/23/2000 | 09/23/2000 | |
| Total Xylenes | EPA 8020 | **400** | µg/L | 0.3 | 40 | 12 | 09/23/2000 | 09/23/2000 | |
| Methyl-t-Butyl Ether | EPA 8260 | **1800** | µg/L | 5 | 100 | 500 | 10/06/2000 | 10/06/2000 | H |

mg/L: Milligrams/Liter (ppm)
mg/Kg: Milligrams/Kilogram (ppm)
µg/L: Micrograms/Liter (ppb)
µg/Kg: Micrograms/Kilogram (ppb)
%Rec: Percent Recovered (surrogates)

PQL: Practical Quantitation Limit
DLR: Detection Limit for Reporting : PQL x Dilution
ND: None Detected at DLR

H: Analyzed outside of hold time
P: Preliminary result
S: Suspect result. See Cover Letter for comments.
E: Analysis performed by External laboratory. See External Laboratory Report attachments.

Report Authentication Code:

ANALYTICAL BSK LABORATORIES
*Environmental Services*

1414 Stanislaus Street
Fresno, CA 93706
(209) 485-8310
(800) 877-8310
*(209) 485-6935 FAX*

2000090667 09/20/2000
BSK_P TAT: Standard
920010

# Chain of Custody

BSK Log Number: 920010

Analytical Due Date:

as for LAB use only

| | | |
|---|---|---|
| Client Name: Nahas | Report Attention: Alex Eskandari | Phone # |
| Address: c/o BSK - P | Project, Quote or PO #: P92057.3 | FAX # |
| City, State, Zip | Copy to: | System # |

Sampled by: FRG

Requested Analyses

| LAB use only Sample # | Type | # Cont. | Date Sampled | Time Sampled | Sample Description/Location | Comment or Station Code | TPH-G, BTEX | MTBE* | *Confirm High MTBE Concentrations with 8260 MTBE | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | L | 2 | 9/17/00 | 11:00 | MW-5 | ~~02769~~ 02770 | X | X | | | | | | | | | |
| 2 | | | | 11:35 | MW-6 | 02771 | X | X | | | | | | | | | |
| 3 | | | | 12:25 | MW-2 | 02772 | X | X | | | | | | | | | |
| 4 | | | | 13:10 | MW-3 | 02773 | X | X | | | | | | | | | |
| 5 | | | | 14:30 | MW-101 | 02774 | X | X | | | | | | | | | |
| 6 | L | 2 | ↓ | 15:05 | MW-7 | 02775 | X | X | | | | | | | | | |

Matrix Type: L - Liquid S - Solid G - Gas
Type of Hazards Associated with Samples:

Additional Services:
Rush Priority: [ ] - 2 Day [ ] - 5 Day
[ ] - Formal Chain of Custody [ ] - QC Data package

Additional Services Authorized by:

(Signature)

Payment Received with Delivery
Date: _____ Amount: $ _____
Check # _____ Initials _____
Reciept # _____

| | Signature | Print Name | Company | Date | Time |
|---|---|---|---|---|---|
| Requested / Relinquished by: | Francis R. Gregoras | Francis R. Gregoras | BSK - P | 9/17/00 | 4:00 |
| Received / Relinquished by: | Alex Y. Eskandari | Alex Y. Eskandari | BSK - P | 9/18/00 | 5:00 |
| Received / Relinquished by: | | | | | |
| Received / Relinquished by: | | | | | |
| Received for Laboratory by: | | LISA WALL | BSK | 9-20-00 | 9:30 |