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**AGWAY ENERGY PRODUCTS**  
ROUTE 7, SOUTH  
MIDDLEBURY, VERMONT

Environmental  
Engineering

MAY 3 10 56 AM '99

VTDEC Site #91-1159

# **SITE STATUS REPORT**

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**SUPPLEMENTARY SOIL & WATER QUALITY INVESTIGATION**

April 27, 1999

KDAI Project No. 9632-002



**KD ASSOCIATES, INC.**

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**Environmental Consulting & Laboratory Services**

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## **1.0 INTRODUCTION**

The following is a report on activities completed by K-D Associates, Inc. of South Burlington, VT to monitor the nature, degree and extent of petroleum contamination in soil and groundwater at Agway Energy Products in Middlebury, Vermont. The site is located on the west side of Route 7 approximately 2 miles south of the village of Middlebury (see U.S.G.S. Topographic Map Section and Site Sketch, Appendix 1, page 1&2).

### **1.1 Background**

The Agway Energy Products facility in Middlebury, Vermont was listed as an active hazardous site by the Vermont Agency of Natural Resources - Hazardous Materials Management Division (VANR-HMMD) in November 1991 following the discovery of petroleum contamination in soil during the removal of a 3000 gallon underground storage tank. Since that time, Agway Energy Products has engaged the services of several consulting firms to define the degree and extent of the petroleum contamination in the subsurface environment and assess the potential for impact to sensitive receptors.

In August 1996, Agway Energy Products retained the services of K-D Associates, Inc. (KDAI) of South Burlington, VT to monitor the re-piping and replacement of three underground storage tanks, design a transportation and off-site treatment proposal for petroleum contaminated soils, and prepare a work plan for the additional investigative site work requested by the SMS. Since this date KDAI has continued to monitor the groundwater wells on a quarterly basis to determine the severity and extent of contamination on this site.

### **1.2 Scope of Work**

The work plan provided for the sampling and laboratory analysis of sixteen of the sixteen existing monitoring wells. The samples were to be analyzed for BTEX and MTBE compounds via EPA Method 8021B.

Authorization to proceed with the work plan proposed by KDAI was given by SMS Project Manager Michael Young in March of 1999.

## **2.0 GROUNDWATER QUALITY SAMPLING RESULTS**

The groundwater monitoring well array was sampled by KDAI on March 30, 1999. Groundwater samples were collected from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6,

MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-15, MW-16, and MW-19. The results of the groundwater quality sampling are summarized in Table 2 (see Appendix 2, page 1) and the individual laboratory report forms for the groundwater sample analyses are also included in Appendix 3.

All the water quality samples were collected in 40 ml VOA containers equipped with Teflon septa and stored in a cooler on ice until delivery to the laboratory. All samples were analyzed in the laboratory for purgeable aromatic hydrocarbons (BTEX and MTBE) via EPA 8021B.

## **2.1 Sampling Methodology and Procedures**

Prior to sampling, the groundwater monitoring wells were subjected to a PID headspace screening, water level measurements and free-product checks were made, and then the wells were developed (through the removal of four to five well volumes of groundwater) to insure that fresh groundwater was sampled. The wells were developed and sampled using disposable neoprene plastic bailers. The well development water was placed in a 5 gallon bucket and inspected for evidence of petroleum sheens. Upon completion of the well development procedure, the groundwater samples were collected and placed in the sample containers. Quality Assurance/Quality Control (QA/QC) of the sample handling procedures included the preparation and analysis of a Trip Blank sample, a Field Blank sample and a Duplicate sample (taken at MW-5). The QA/QC results are included in Appendix 3.

## **2.2 Field Measurements and Observations**

The well point elevation data, water level measurements, and groundwater elevation data are tabulated on the attached Table 2 (see Appendix 1, page 3). Depths to the water table at the site as measured on March 30, 1999 ranged from 0.20 ft. at MW-13 (the western-most monitoring well), to 4.69 feet at MW-12 (a northern point near the property boundary). Overall water levels recorded in March 1999 were approximately 1.34 feet higher than those recorded in December 1998.

Contouring of the water table (using water level measurements and well point elevations of the groundwater monitoring wells) indicates that in March 1999 groundwater was flowing in a predominately northerly direction (see Water Table Contour Map, Appendix 1, page 4) but that there appears to be a radial pattern flowing outward from the area between monitoring wells MW-

1 and MW-3. This trend in groundwater flow correlates with high water tables at this site. These periods of seasonally high water table conditions have previously coincided with increases in the concentration of petroleum contaminants in monitoring wells at the southern and eastern margins of the site. However, this correlation is not apparent during this round of sampling and most of the monitoring wells with normally high contaminant concentrations show decreased contamination during this round of monitoring.

The groundwater level contouring describes a relative shallow water table gradient (0.5%) in the vicinity of the underground storage tanks and dispensing pump island. Steeper water table gradients (up to 2.5%) are indicated at the southern, eastern, and northern margins of the site. Groundwater flow at the eastern margin of the site may be influenced by the deep drainage ditches paralleling the adjoining highway (Route 7).

The interface probe product gauging performed prior to sampling did not detect measurable product on top of the water columns in any of the wells, however, small flecks of sheen were observed on top of bailed water at MW-1. The pre-sampling PID screening of the monitoring well headspaces yielded vapor levels ranging from 408 ppm in well MW-8 (located just north of the approximate contaminant source area) to 0 ppm in six wells scattered about the property. The PID headspace screening results are provided in Table 1 (see Appendix 1, page 3) and depicted on the attached PID Headspace Vapors map (Appendix 1, page 5).

### **2.3 Groundwater Sampling Results**

The groundwater quality sampling results are summarized in Table 2 located in Appendix 2 (page 1) and depicted on the attached Benzene Distribution Map and Total BTEX/MTBE Distribution Map (Appendix 2, pages 2 and 3). Copies of the laboratory reports (from Endyne, Inc. of Williston, VT) are also included in Appendix 3.

The EPA Method 8021B assays indicate that levels of Benzene and MTBE were found in the groundwater at monitoring well MW-1, MW-5, MW-6, MW-8, and MW-9 exceeding the VTDEC Ground Water Enforcement Standard limits (GWES).

For the first time, the laboratory method EPA 8021B was used to include 1,2,4, Trimethyl Benzene and 1,3,5 Trimethyl Benzene which are regulated in groundwater at 5 and 4 ppb, respectively. The same five wells (MW-1, MW-5, MW-6, MW-8, and MW-9) where detectable Benzene and MTBE levels were found also showed elevated levels of 1,2,4 Trimethyl Benzene and 1,3,5 Trimethyl Benzene.

Comparison of the March 1999 sampling results with the results of the December 1998 sampling indicates a marked reduction in Benzene concentrations in groundwater at well locations MW-1, MW-5, MW-6, MW-8, and MW-16. However, there was a marked increase of Benzene at MW-9. During this round of sampling, there were no detectable levels of any tested contaminants found at MW-2, MW-4, MW-7, MW-10, MW-11, MW-12, MW-13, MW-15, MW-16 or MW-19. Elevated levels of MTBE were detected at MW-3, but were still considered below Groundwater Enforcement Standards for the State of Vermont.

The concentration and distribution of BTEX and MTBE compounds in groundwater as depicted on the attached contaminant distribution maps (see Appendix 2, pages 2 and 3) indicates that the concentration of petroleum contaminants fall in a linear pattern running north-south along the front of the Agway Energy Products building.

The highest concentration of BTEX compounds detected in groundwater at the site (23,250 ug/L total BTEX) is at monitoring well MW-8 which is approximately 25 feet due north of the former 3000 gallon gasoline UST at the southeast corner of the Agway office building (referred to as Release #1). An associated concentration of contaminants is found at monitoring well MW-1 (total BTEX 7,022 ug/L) in the approximate region of the former UST. Because of the close proximity of these two monitoring wells to each other and to the former UST, it is believed that the former UST is the source of contamination at these two sites. The concentrations of BTEX contaminants at MW-8, are approximately half of their concentrations in December 1998. However, concentrations of BTEX contaminants are higher at MW-5 and MW-6, north of MW-8. This may indicate that the contamination plume is slowly extending north with the general groundwater flow.

A second concentration of contamination is found at MW-9 on the southeast corner of the property. Total BTEX at this site was found to be 11,057 ppb. This site has almost 48 times the concentration of Benzene found at the next highest site (9600 ug/L at MW-9 and <200 ug/L at MW-8). There was a 2000 gallon diesel fuel UST removed from this site in 1993 and the contamination at MW-9 is believed to be caused by leaks associated with this tank (referred to as Release #2). This may be questioned because of the elevated levels of MTBE at MW-9 (3210 ppb). This "anti-knock" compound is not found in diesel fuel. The contaminants near MW-9 do seem to be somewhat isolated and do not appear moving in the groundwater column in any direction.

It appears that, although somewhat erratic, contamination caused by the 3000 gallon gasoline tank (Release #1) seems to be headed in a generally northwestern direction. Monitoring wells to the east, west, and northeast do not show indications of elevated concentrations of contaminants. The contaminants that are detected in these areas are well below the state enforcement standards.

## 2.4 Groundwater Quality Trends

In Appendix 2 (pages 4 - 9) are tables and graphs which summarize BTEX and MTBE results and water level measurements for wells MW-1, MW-5, MW-6, MW-8, MW-9, and MW-12. These wells were selected for water quality trend analysis based on their location and long sampling record.

Previous comparison of the BTEX concentration trends with the water level changes indicated that a direct correlation between seasonal water table fluctuations and fluctuations in BTEX concentrations existed in groundwater at monitoring well MW-1 near the site of the gasoline release. Prior data also suggested the BTEX concentrations in the outlying monitoring wells appear to respond indirectly to the changes in water levels (i.e., high water levels coincide with lower BTEX concentrations and vice versa). However, this relationship did not appear during this March 1999 round of sampling. The overall trend at MW-1, MW-8, and MW-6 indicates that contaminants are slowly declining over time. High groundwater at these sites, during this round, correlate with a decrease in contaminants, unlike previous quarters.

The monitoring well around the corner of the building (MW-5) does not follow the same pattern as the other wells in the area. High concentrations appear in 'pulses' at the site. This is indicated by high concentrations followed by very low concentrations that do not correlate to the water table or quarterly sampling regime. It is still assumed that the foundation of the building may be creating unpredictable groundwater flow patterns, perhaps caused by backwater pooling and other flow patterns.

MW-9 is the only well that has displayed increasing contaminants over the last two years and it appears to be unrelated to water levels.

## 3.0 STATUS OF OFF-SITE TREATMENT OF CONTAMINATED SOIL

On 16 November, 1996 KDAI submitted an Off-Site Soil Treatment Request Form to the Waste Management Division (WMD) for approval to transport and treat approximately 185 cubic yards of petroleum contaminated soil:  $\pm$  180 cubic yards of soil from the August 1996 gasoline UST replacement, and  $\pm$  5 cubic yards from a diesel UST closure at the Agway MTS facility (VT DEC Site #96-2016). WMD approval was granted on 14 November, 1996 for relocating the soil three miles south of Agway on the property of Mr. Richard Naylor of Salisbury, VT.

The soil was moved to the Naylor property between 04 and 08 January, 1997 and polyencapsulated in accordance with the Work Plan submitted and the "Agency Guidelines for Petroleum Contaminated Soil and Debris".

The stockpiled soil was not monitored during this round of sampling. The next round of sampling and maintenance is scheduled for June 1999.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater sampling results indicate that contaminants from Release #1 have slowly migrated from the UST release site toward the north-northwest and during high water periods, in a radial direction from the site. The north-northwest contaminant flow is evidenced by the slowly increasing contaminant levels observed at MW-8, MW-5, and MW-6.

Concentrations of contaminants were lower in March 1999 than those seen in December 1998 as well as September 1998. The renewed presence of a product sheen on top of the water column at MW-1 suggests that there is still a very high concentration of contaminants in the central locations of the site (Release #1), but it appears that the core of contamination is moving northward. Concentrations at MW-8 were almost double those appearing at MW-1. However, even though concentrations are highest at MW-8, the concentration of contaminants at this site from the previous quarter declined by 50% (BTEX concentrations were 23,250 ppb in March 1999, down from 43,995 ppb in December 1998).

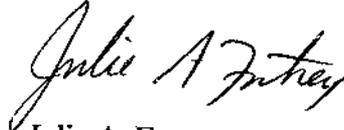
The exception to the pattern of decreasing contamination on the subject property is MW-9 where contamination levels at MW-9 (Release #2) are not declining, they are increasing. However, there is no evidence of plume migration. The presence of elevated levels of MTBE at MW-9 does raise questions regarding the source of contamination. It is possible that contamination is both migrating from the first spill (near MW-1) towards the site as well as receiving contamination from a second spill of diesel. The presence of MTBE, a substance not found in diesel, supports this theory. Groundwater flow during high water periods does indicate that groundwater does flow from MW-1 towards MW-9.

In closing, **KDAI** recommends the continuation of the quarterly groundwater program. The next scheduled round of quarterly sampling is due in June 1999 and would include sampling the partial semi-annual monitoring well array as well as monitoring and maintaining the off-site stockpiled soil. A work plan/cost estimate will be submitted for your review and approval.

Respectfully,



Bryan Schultz,  
Principal

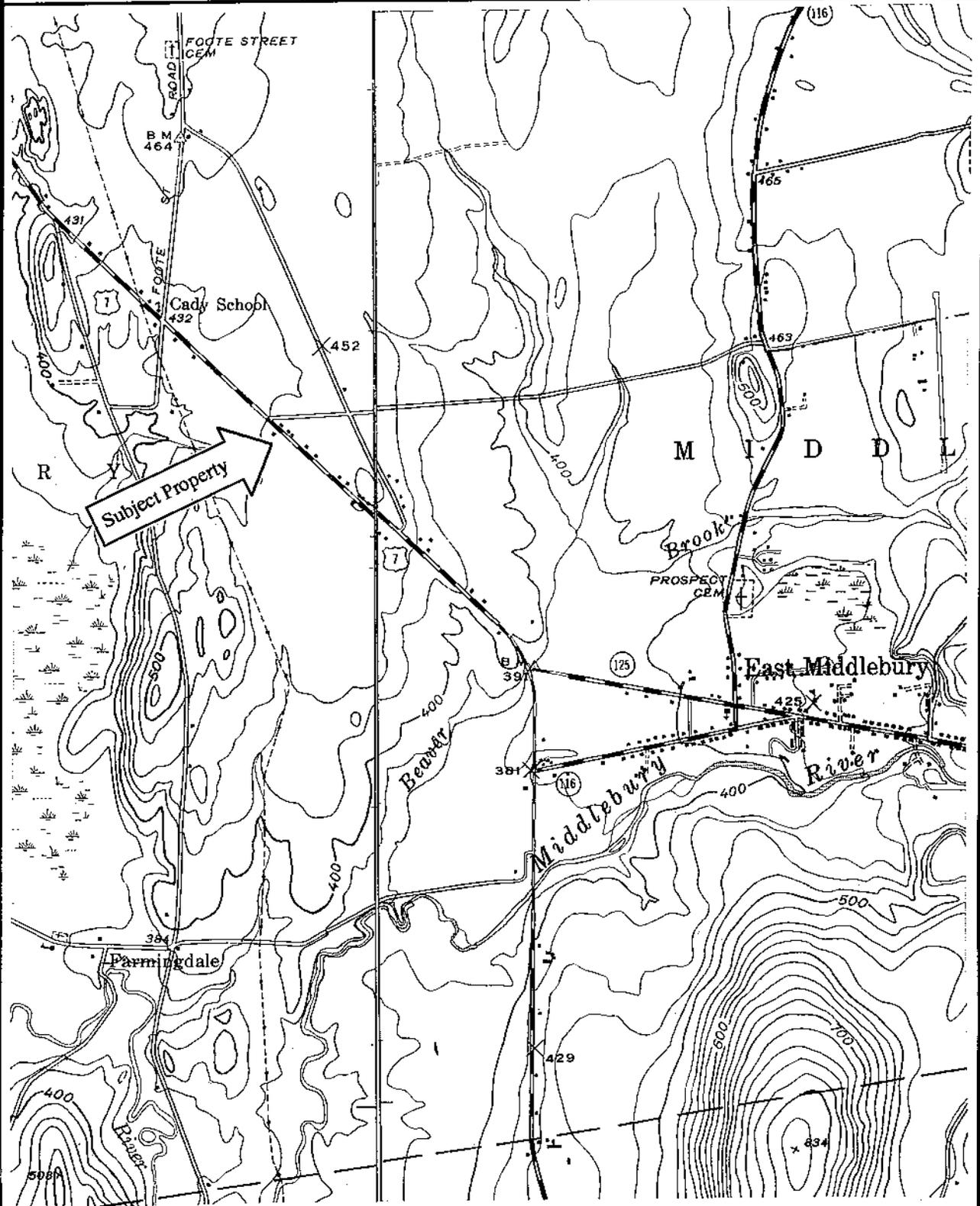


Julie A. Fortney,  
Project Scientist

cc: Richard Williams, Agway Energy Products  
Michelle Thurston, Agway Energy Products  
file 9632-002

**APPENDIX 1**

**U.S.G.S TOPOGRAPHIC MAP SECTION - SITE MAP**  
**AGWAY ENERGY PRODUCTS, ROUTE 7, MIDDLEBURY, VT**



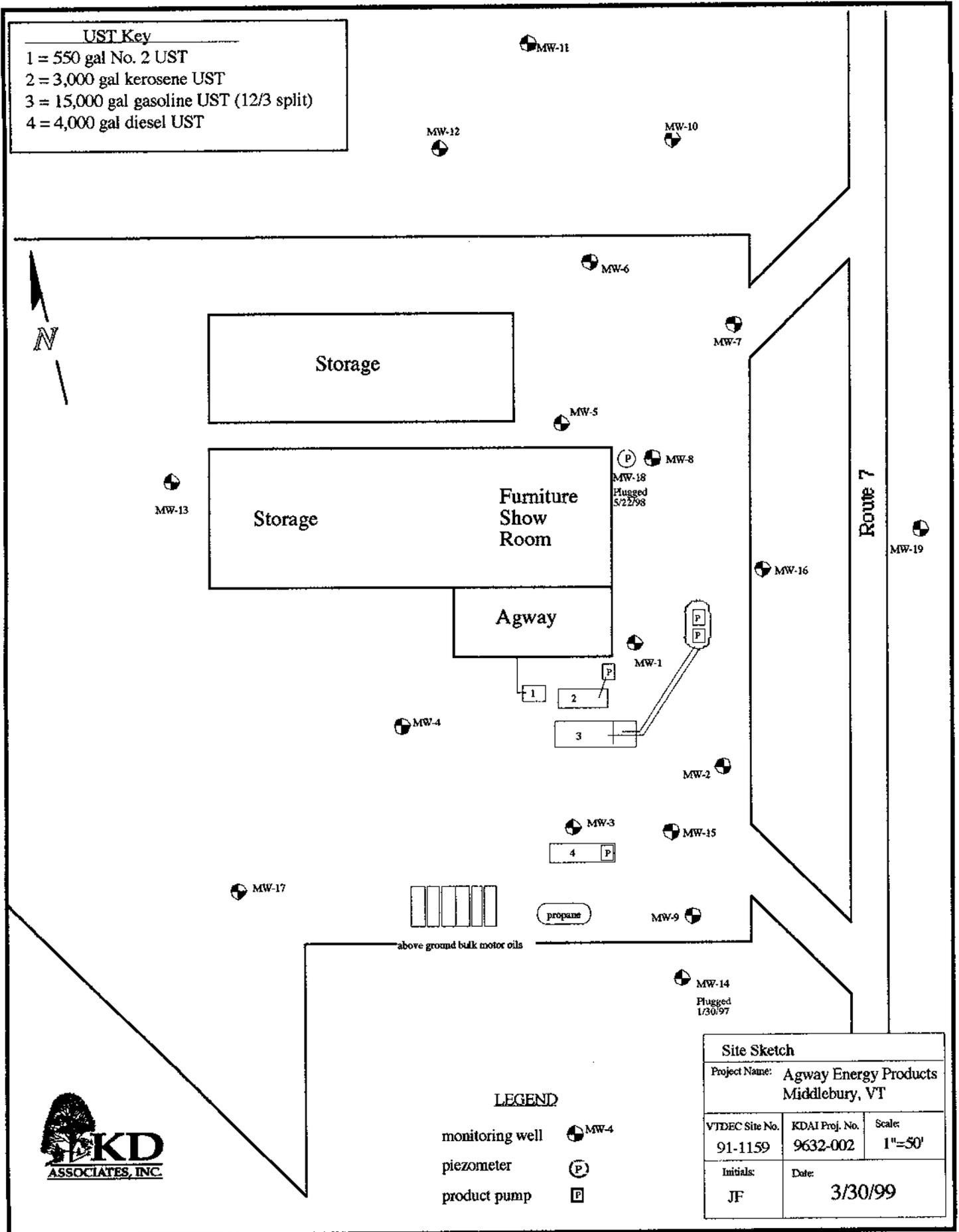
**Scale:** 1: 24,000  
**Contour Interval:** 20 ft.  
**Map Source:**  
U.S.G.S. Cornwall Quadrangle, 1983  
U.S. Geological Survey

**Prepared:** March 22, 1997

**K-D ASSOCIATES, INC.**  
1350 Shelburne Road, Suite 209  
South Burlington, Vermont 05403

**UST Key**

- 1 = 550 gal No. 2 UST
- 2 = 3,000 gal kerosene UST
- 3 = 15,000 gal gasoline UST (12/3 split)
- 4 = 4,000 gal diesel UST



**LEGEND**

- monitoring well  MW-4
- piezometer  P
- product pump  P

**Site Sketch**

|   |                            |                  |
|---|----------------------------|------------------|
| Project Name: <b>Agway Energy Products Middlebury, VT</b> |                            |                  |
| VTDEC Site No.<br>91-1159                                 | KDAI Proj. No.<br>9632-002 | Scale:<br>1"=50' |
| Initials:<br>JF   | Date:<br>3/30/99           |                  |

# TABLE 1

## Groundwater Elevation Measurements Agway Energy Products, Route 7, Middlebury

VT DEC Site # 91-1159

Sampling Date: 30 March, 1999

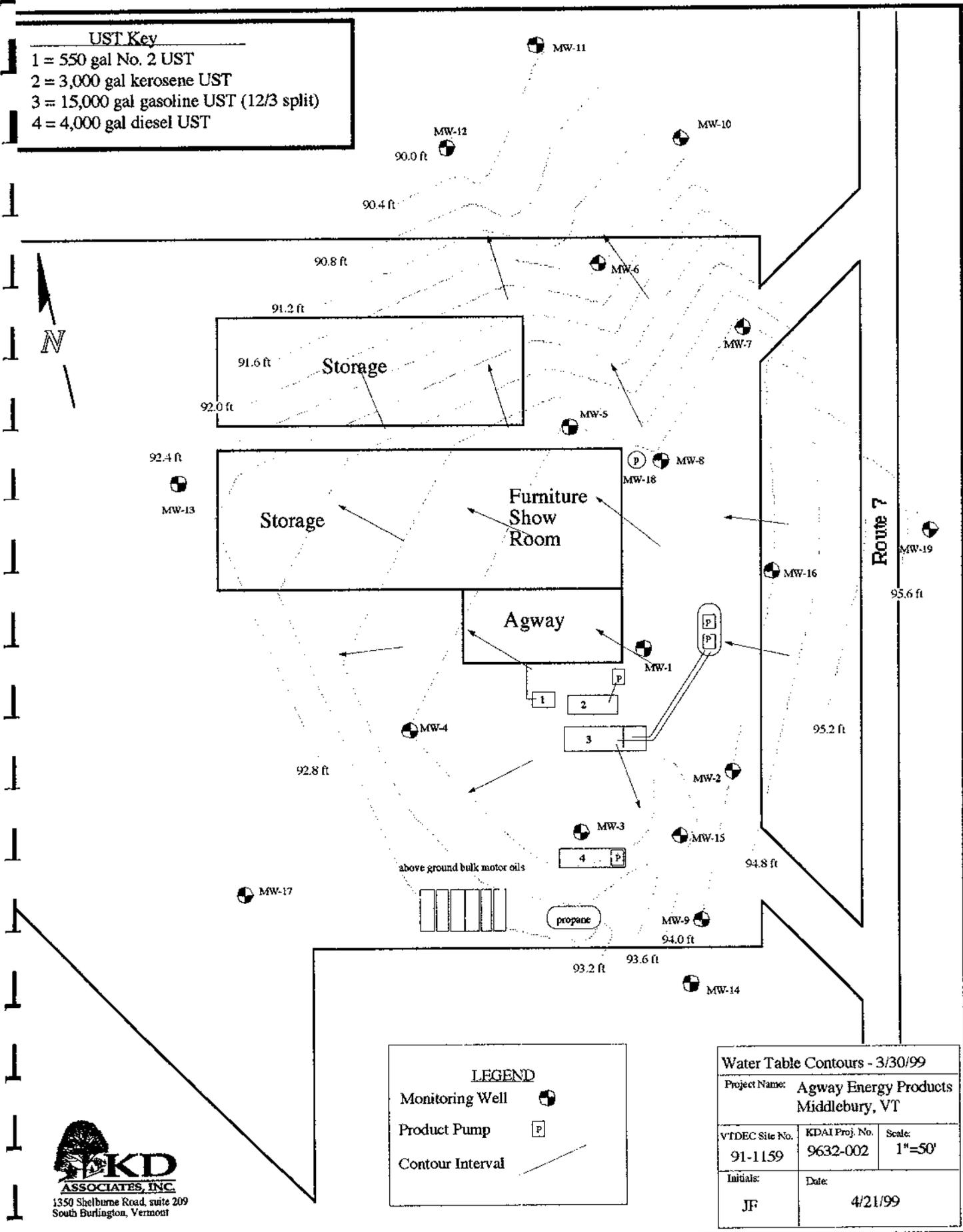
| Well ID      | Elevation T.O. Casing | Depth to Groundwater | Groundwater Elevation | Headspace via PID |
|--------------|-----------------------|----------------------|-----------------------|-------------------|
| MW-1         | 96.84                 | 2.57                 | 94.27                 | 168.00            |
| MW-2         | 96.94                 | 2.55                 | 94.39                 | 0.40              |
| MW-3         | 95.70                 | 1.33                 | 94.37                 | 0.00              |
| MW-4         | 94.98                 | 0.98                 | 94.00                 | 0.00              |
| MW-5         | 96.39                 | 2.36                 | 94.03                 | 18.90             |
| MW-6         | 94.82                 | 1.90                 | 92.92                 | 3.80              |
| MW-7         | 96.22                 | 2.05                 | 94.17                 | 0.40              |
| MW-8         | 96.75                 | 2.67                 | 94.08                 | 408.00            |
| MW-9         | 96.52                 | 1.92                 | 94.60                 | 14.10             |
| MW-10        | 95.29                 | 3.87                 | 91.42                 | 0.00              |
| MW-11        | 93.88                 | 3.58                 | 90.30                 | 0.00              |
| MW-12        | 94.66                 | 4.69                 | 89.97                 | 0.00              |
| MW-13        | 92.82                 | 0.25                 | 92.57                 | 0.00              |
| MW-14        | n/s                   | n/s                  | n/s                   | n/s               |
| MW-15        | 96.64                 | 2.82                 | 93.82                 | 1.20              |
| MW-16        | 96.87                 | 2.49                 | 94.38                 | 0.30              |
| MW-17 (SB-1) | 94.30                 | n/s                  | n/s                   | n/s               |
| MW-19        | 96.77                 | 1.01                 | 95.76                 | 0.30              |

### Notes:

All measurements given in decimal feet  
Elevations are relative to an on-site benchmark of 100.00 feet  
n/s = not sampled

**UST Key**

- 1 = 550 gal No. 2 UST
- 2 = 3,000 gal kerosene UST
- 3 = 15,000 gal gasoline UST (12/3 split)
- 4 = 4,000 gal diesel UST



**LEGEND**

- Monitoring Well
- Product Pump
- Contour Interval

**Water Table Contours - 3/30/99**

Project Name: Agway Energy Products  
Middlebury, VT

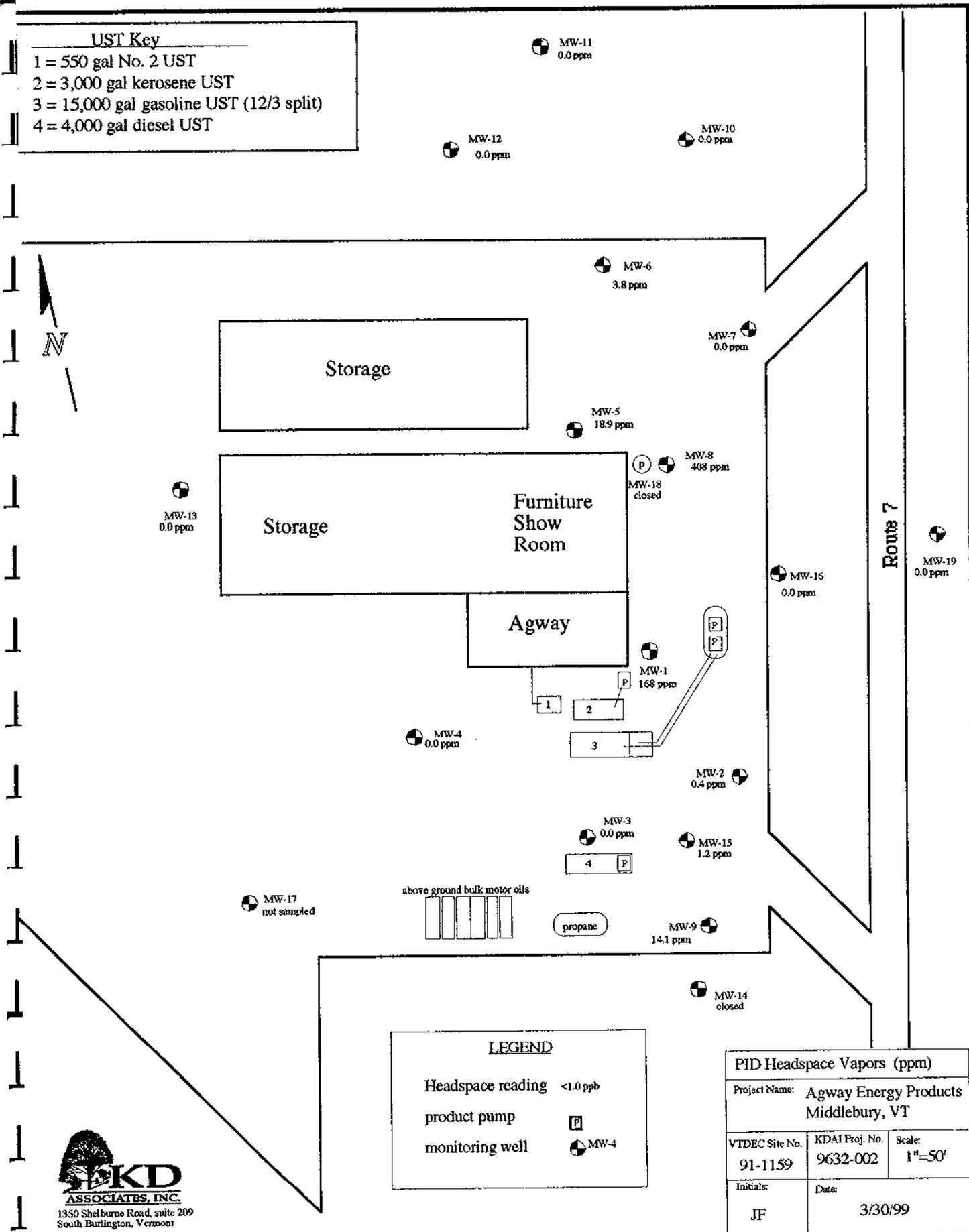
|                |                |        |
|----------------|----------------|--------|
| VTDEC Site No. | KDAI Proj. No. | Scale: |
| 91-1159        | 9632-002       | 1"=50' |

|           |         |
|-----------|---------|
| Initials: | Date:   |
| JF        | 4/21/99 |



**UST Key**

- 1 = 550 gal No. 2 UST
- 2 = 3,000 gal kerosene UST
- 3 = 15,000 gal gasoline UST (12/3 split)
- 4 = 4,000 gal diesel UST



**LEGEND**

- Headspace reading <1.0 ppb
- product pump [P]
- monitoring well [MW-4 symbol]

**PID Headspace Vapors (ppm)**

|   |                            |                  |
|---|----------------------------|------------------|
| Project Name: Agway Energy Products<br>Middlebury, VT |                            |                  |
| VTDEC Site No.<br>91-1159                             | KDAI Proj. No.<br>9632-002 | Scale:<br>1"=50' |
| Initials:<br>JF                                       | Date:<br>3/30/99           |                  |



**APPENDIX 2**

**TABLE 2**

**AGWAY ENERGY PRODUCTS  
Route 7 South, Middlebury, Vermont**

**BTEX and MTBE Concentrations in Groundwater - EPA Method 8021B  
30 March, 1999**

Sampling Location/Contaminant Concentrations in parts per billion (ppb)

| PARAMETER               | VTDEC Limit | MW-1            | MW-2 | MW-3 | MW-4 | MW-5             | MW-6            | MW-7 | MW-8             | MW-9             | MW-10 | MW-11 | MW-12 | MW-13 | MW-15 | MW-16 | MW-17 | MW-18 | MW-19 |
|-------------------------|-------------|-----------------|------|------|------|------------------|-----------------|------|------------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| BENZENE                 | 5           | <100            | <1   | <1   | <1   | <100             | 51.5            | <1   | <200             | 9600             | <1    | <1    | <1    | <1    | <1    | <1    | ----  | **    | <1    |
| TOLUENE                 | 1000        | 334             | <1   | <1   | <1   | 948              | 140             | <1   | 3450             | 6150             | <1    | <1    | <1    | <1    | <1    | <1    | ----  | **    | <1    |
| ETHYLBENZENE            | 700         | 152             | <1   | <1   | <1   | 154              | 1260            | <1   | <200             | 1060             | <1    | <1    | <1    | <1    | <1    | <1    | ----  | **    | <1    |
| XYLENE                  | 10000       | 5410            | <1   | <1   | <1   | 13900            | 6830            | <1   | 21500            | 6360             | <1    | <1    | <1    | <1    | <1    | <1    | ----  | **    | <1    |
| MTBE                    | 50          | <1000           | <10  | 48.6 | <10  | <1000            | <500            | <10  | <2000            | 3210             | <10   | <10   | <10   | <10   | <10   | <10   | ----  | **    | <10   |
| 1,3,5 Trimethyl Benzene | 4           | <del>1000</del> | <1   | <1   | <1   | 1310             | 1010            | <1   | 1750             | 427              | <1    | <1    | <1    | <1    | <1    | <1    | ----  | **    | <1    |
| 1,2,4 Trimethyl Benzene | 5           | <del>4000</del> | <1   | <1   | <1   | 2990             | 2910            | <1   | 4290             | 1200             | <1    | <1    | <1    | <1    | <1    | <1    | ----  | **    | <1    |
| TOTAL BTEX              | 11705       | 7022            | 0    | <1   | <1   | <del>15364</del> | <del>9100</del> | 0    | <del>23250</del> | <del>11057</del> | 0     | 0     | 0     | 0     | 0     | 0     | ----  | **    | 0     |
|                         |             | 5,896           |      |      |      | 15,002           | 8261            |      | 24,950           | 23,170           |       |       |       |       |       |       |       |       |       |
| UIPs                    |             | >10             | 0    | >10  | 0    | >10              | >10             | 0    | >10              | >10              | 0     | 0     | 0     | 0     | 0     | 0     | ----  | **    | 0     |

Notes: \*\* MW-18 plugged and abandoned on 5/22/98  
 TBQ = Trace Below Quantitation  
 <1 = detection limit  
 UIP = Unidentified Peaks (non-target compounds)  
 n/s = not sampled during this round of sampling  
 408 = above VT DEC Limits

**UST Key**

- 1 = 550 gal No. 2 UST
- 2 = 3,000 gal kerosene UST
- 3 = 15,000 gal gasoline UST (12/3 split)
- 4 = 4,000 gal diesel UST



Storage

Storage Furniture Show Room

Agway

above ground bulk motor oils

propane

Route 7

**LEGEND**

Benzene concentration 7110 ppb

product pump

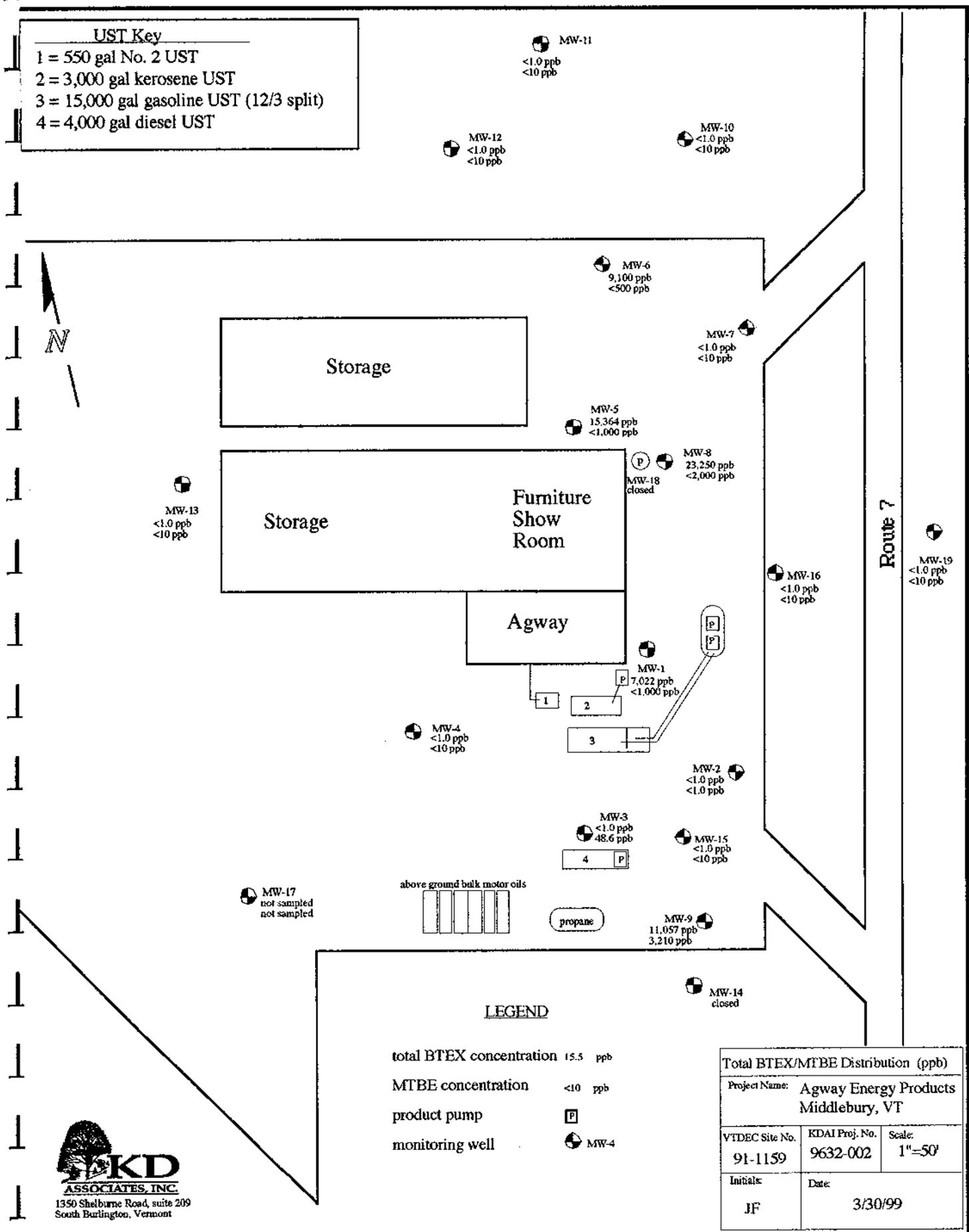
monitoring well

| Benzene Distribution (ppb)                         |                            |                  |
|--|----------------------------|------------------|
| Project Name: Agway Energy Products Middlebury, VT |                            |                  |
| VTDEC Site No.<br>91-1159                          | KDAI Proj. No.<br>9632-002 | Scale:<br>1"=50' |
| Initials:<br>JF                                    | Date:<br>3/30/99           |                  |



**UST Key**

- 1 = 550 gal No. 2 UST
- 2 = 3,000 gal kerosene UST
- 3 = 15,000 gal gasoline UST (12/3 split)
- 4 = 4,000 gal diesel UST



**LEGEND**

- total BTEX concentration 15.5 ppb
- MTBE concentration <10 ppb
- product pump [P]
- monitoring well [MW-4 symbol]

**Total BTEX/MTBE Distribution (ppb)**

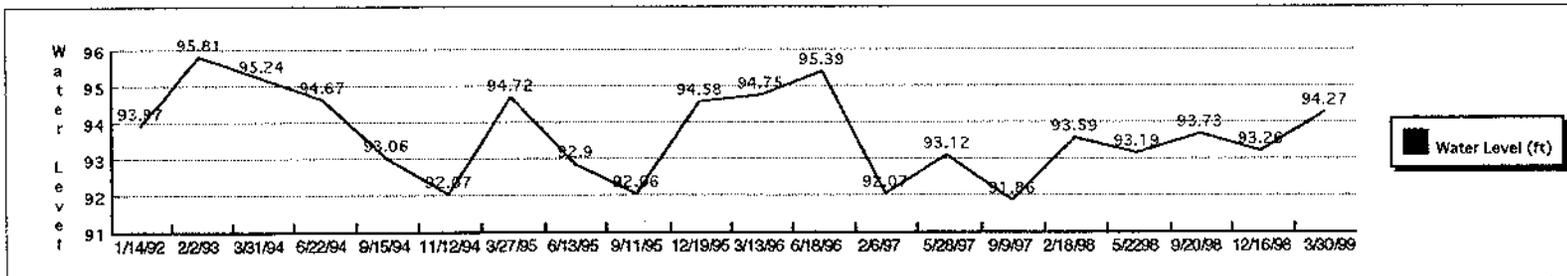
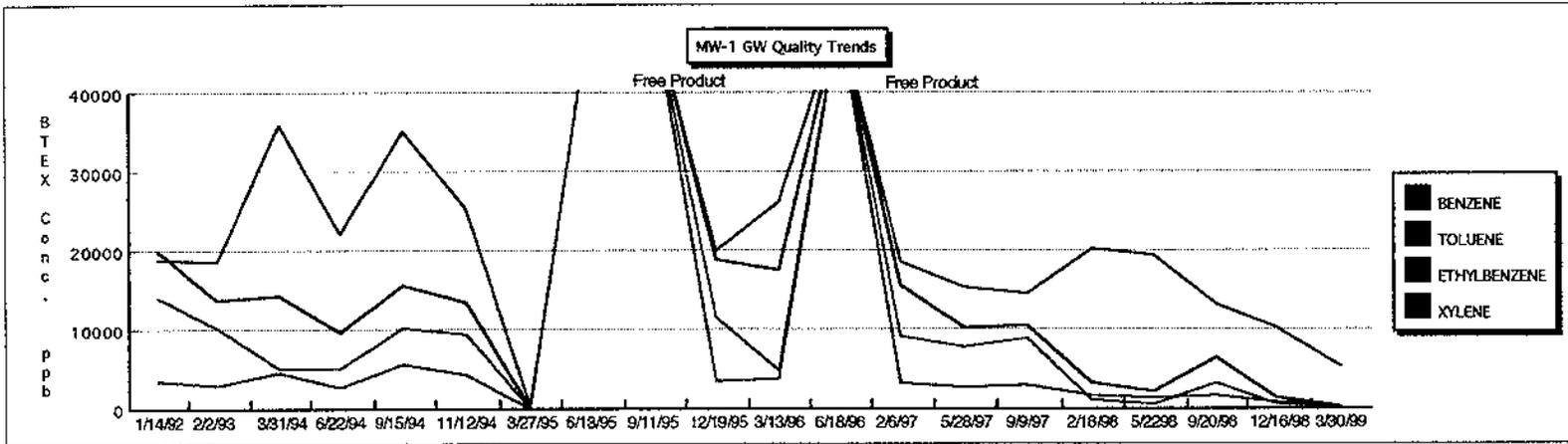
|   |                            |                  |
|---|----------------------------|------------------|
| Project Name: Agway Energy Products<br>Middlebury, VT |                            |                  |
| VTDEC Site No.<br>91-1159                             | KDAI Proj. No.<br>9632-002 | Scale:<br>1"=50' |
| Initials:<br>JF                                       | Date:<br>3/30/99           |                  |



## AGWAY ENERGY PRODUCTS Groundwater Quality Trends

MONITORING WELL MW-1      Results in ug/L

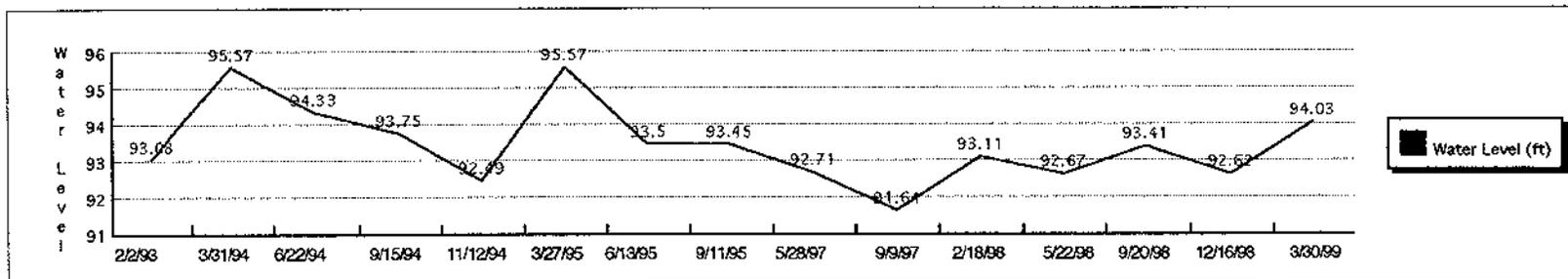
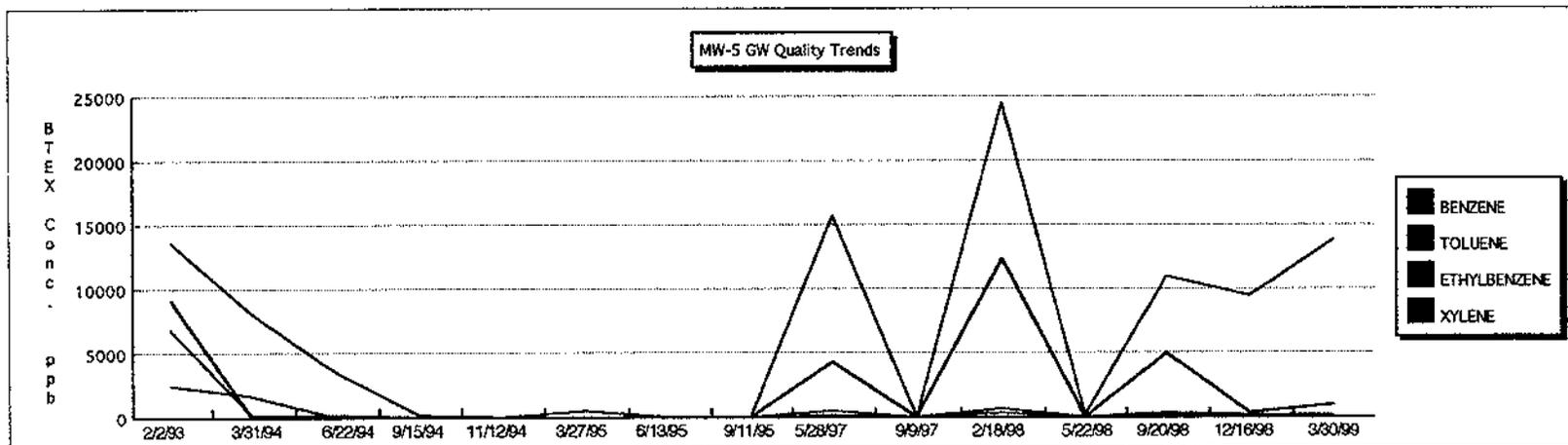
| PARAMETER        | 1/14/92 | 2/2/93 | 3/31/94 | 6/22/94 | 9/15/94 | 11/12/94 | 3/27/95 | 6/13/95 | 9/11/95 | 12/19/95 | 3/13/96 | 6/18/96 | 2/6/97 | 5/28/97 | 9/9/97 | 2/18/98 | 5/22/98 | 9/20/98 | 12/16/98 | 3/30/99     |
|------------------|---------|--------|---------|---------|---------|----------|---------|---------|---------|----------|---------|---------|--------|---------|--------|---------|---------|---------|----------|-------------|
| BENZENE          | 14000   | 10200  | 5110    | 5030    | 10200   | 9430     | 77      | FP      | FP      | 11700    | 4940    | NS      | 9160   | 7800    | 8990   | 1060    | 501     | 3310    | 408      | <100        |
| TOLUENE          | 20000   | 13800  | 14200   | 9630    | 15800   | 13400    | 6.9     | FP      | FP      | 19000    | 17700   | NS      | 15800  | 10400   | 10600  | 3140    | 2080    | 6620    | 1250     | 334         |
| ETHYLBENZENE     | 3600    | 2950   | 4540    | 2820    | 5790    | 4210     | 100     | FP      | FP      | 3540     | 3890    | NS      | 3110   | 2800    | 2880   | 1750    | 1330    | 1690    | 836      | 152         |
| XYLENE           | 18800   | 18600  | 35900   | 22100   | 35100   | 25500    | 169     | FP      | FP      | 19900    | 26200   | NS      | 18600  | 15300   | 14500  | 20400   | 19400   | 13300   | 10300    | 5410        |
| MTBE             | ---     | 2850   | ND      | BDL     | BDL     | BDL      | BDL     | FP      | FP      | <2000    | BDL     | NS      | <2000  | <2000   | <2000  | <1000   | <1000   | <1000   | <1000    | <1000       |
| TOTAL BTEX       | 45550   | 59750  | NS      | 39500   | 66890   | 52540    | 352.9   | FP      | FP      | 54140    | 52730   | FP      | 46670  | 36300   | 36970  | 26350   | 23311   | 24920   | 12794    | 7022 / 5896 |
| Water Level (ft) | 93.97   | 95.81  | NS      | 94.67   | 93.06   | 92.07    | 94.72   | 92.9    | 92.06   | 94.58    | 94.75   | 95.39   | 92.07  | 93.12   | 91.86  | 93.59   | 93.19   | 93.73   | 93.26    | 94.27       |



## AGWAY ENERGY PRODUCTS Groundwater Quality Trends

MONITORING WELL MW-5 Results in ug/L

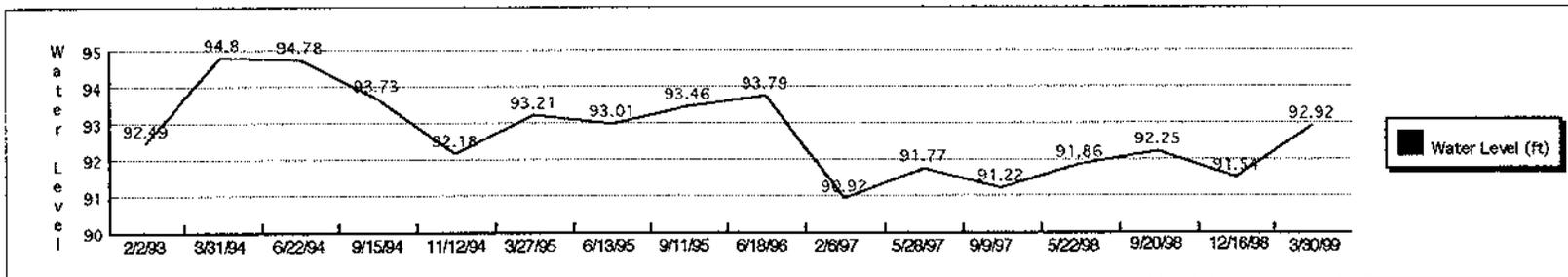
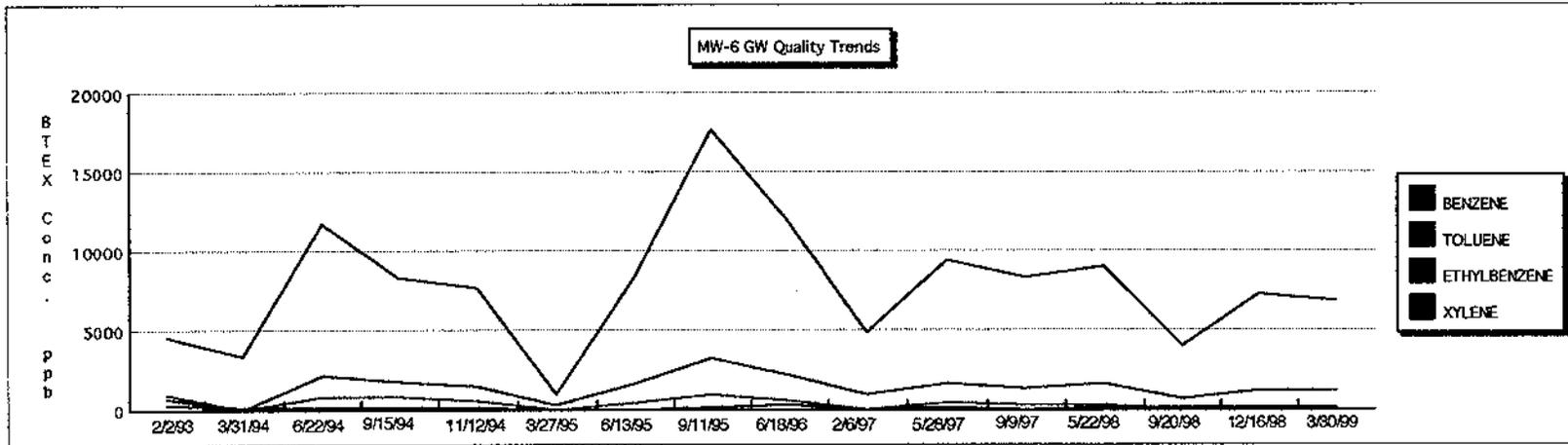
| PARAMETER        | 1/14/92 | 2/2/93 | 3/31/94 | 6/22/94 | 9/15/94 | 11/12/94 | 3/27/95 | 6/13/95 | 9/11/95 | 12/19/95 | 3/13/96 | 6/18/96 | 2/6/97 | 5/28/97 | 9/9/97 | 2/18/98 | 5/22/98 | 9/20/98 | 12/16/98 | 3/30/99                 |
|------------------|---------|--------|---------|---------|---------|----------|---------|---------|---------|----------|---------|---------|--------|---------|--------|---------|---------|---------|----------|-------------------------|
| BENZENE          |         | 6810   | 244     | 161     | 16      | BDL      | 13.3    | BDL     | 2.7     | NS       | NS      | NS      | NS     | 482     | 1.4    | 633     | BDL     | 260     | 117      | <100                    |
| TOLUENE          |         | 9230   | ND      | 134     | BDL     | BDL      | 43.9    | BDL     | BDL     | NS       | NS      | NS      | NS     | 4260    | BDL    | 12400   | 27      | 4950    | 372      | 948                     |
| ETHYLBENZENE     |         | 2500   | 1590    | BDL     | 18.3    | BDL      | 7       | 1.5     | 1.1     | NS       | NS      | NS      | NS     | 100     | BDL    | 317     | BDL     | 210     | 223      | 154                     |
| XYLENE           |         | 13600  | 8230    | 3460    | 236     | 45.6     | 579     | 8.3     | 7.1     | NS       | NS      | NS      | NS     | 15700   | 3.2    | 24500   | 183     | 11000   | 9490     | 13900                   |
| MTBE             |         | 2030   | ND      | BDL     | BDL     | BDL      | BDL     | BDL     | BDL     | NS       | NS      | NS      | NS     | <1000   | BDL    | <2000   | <10     | <1000   | <1000    | <1000                   |
| TOTAL BTEX       |         | 32140  | 10064   | 3755    | 270     | 45.6     | 643.2   | 9.8     | 10.9    | NS       | NS      | NS      | NS     | 20442   | 4.6    | 37850   | 210     | 16420   | 10202    | <del>15304</del> 15,002 |
| Water Level (ft) |         | 93.08  | 95.57   | 94.33   | 93.75   | 92.49    | 95.57   | 93.5    | 93.45   | NS       | NS      | NS      | NS     | 92.71   | 91.64  | 93.11   | 92.67   | 93.41   | 92.62    | 94.03                   |



## AGWAY ENERGY PRODUCTS Groundwater Quality Trends

MONITORING WELL MW-6 Results in ug/L

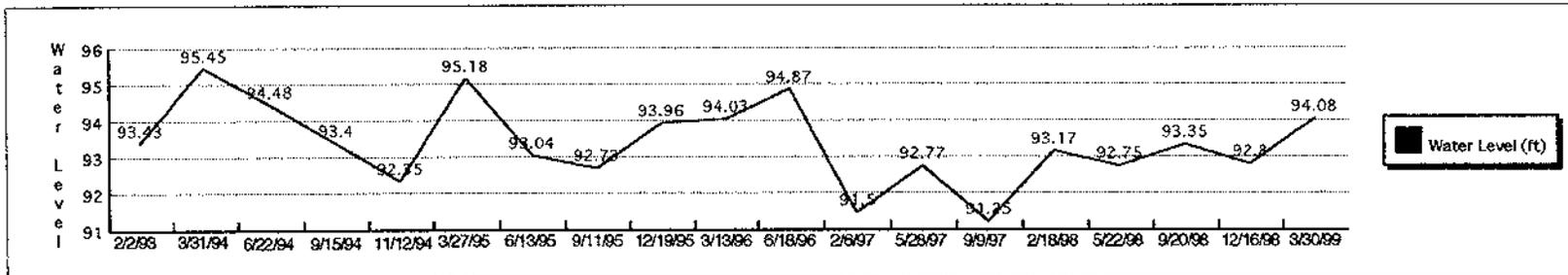
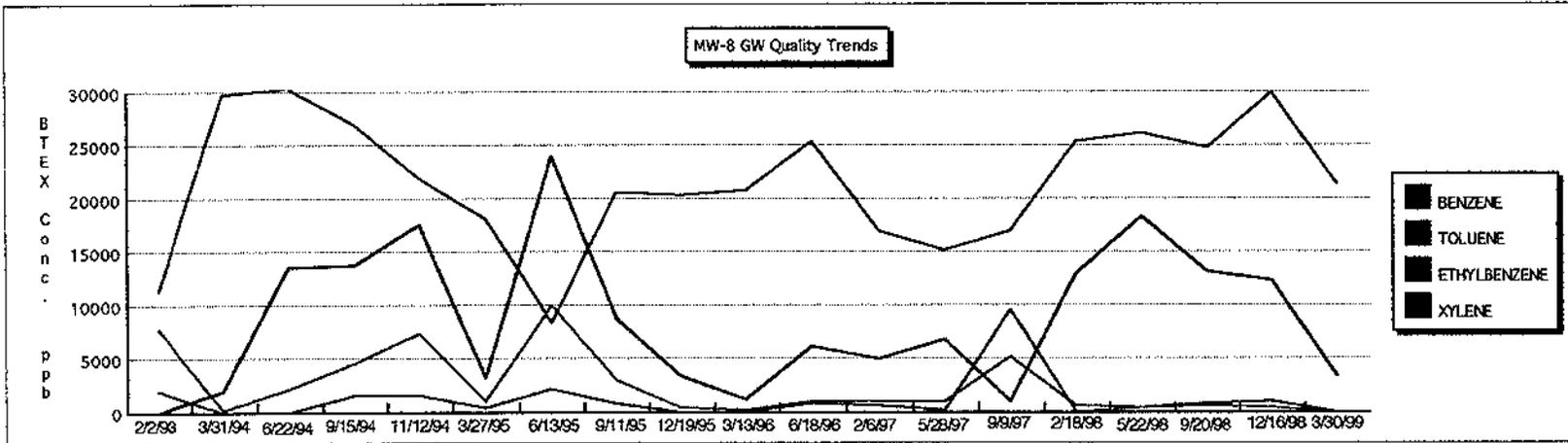
| PARAMETER        | 1/14/92 | 2/2/93 | 3/31/94 | 6/22/94 | 9/15/94 | 11/12/94 | 3/27/95 | 6/13/95 | 9/11/95 | 12/19/95 | 3/13/96 | 6/18/96 | 2/6/97 | 5/28/97 | 9/9/97 | 2/18/98 | 5/22/98 | 9/20/98 | 12/16/98 | 3/30/99              |
|------------------|---------|--------|---------|---------|---------|----------|---------|---------|---------|----------|---------|---------|--------|---------|--------|---------|---------|---------|----------|----------------------|
| BENZENE          |         | 691    | 23      | 759     | 745     | 511      | BDL     | 345     | 902     | NS       | NS      | 474     | 8Q<20  | 361     | 293    | NS      | 284     | 63.8    | 105      | 51.5                 |
| TOLUENE          |         | 223    | 169     | 87      | 134     | 114      | BDL     | 66.4    | 197     | NS       | NS      | 222     | <200   | 112     | <100   | NS      | 151     | 69.4    | 113      | 140                  |
| ETHYLBENZENE     |         | 932    | BDL     | 2170    | 1720    | 1460     | 221     | 1570    | 3230    | NS       | NS      | 2150    | 951    | 1590    | 1410   | NS      | 1580    | 711     | 1230     | 1260                 |
| XYLENE           |         | 4590   | 3390    | 11700   | 8400    | 7710     | 896     | 8350    | 17700   | NS       | NS      | 11800   | 4830   | 9410    | 8440   | NS      | 9000    | 4070    | 7260     | 6830                 |
| MTBE             |         | 121    | ND      | BDL     | BDL     | BDL      | BDL     | BDL     | BDL     | NS       | NS      | BDL     | <2000  | <1000   | <1000  | NS      | <500    | <1000   | <500     | <500                 |
| TOTAL BTEX       |         | 6436   | 3582    | 14176   | 10999   | 9795     | 1117    | 10331   | 22029   | NS       | NS      | 14646   | 5981   | 11473   | 10243  | NS      | 11015   | 4914.2  | 8708     | <del>9700</del> 8281 |
| Water Level (ft) |         | 92.49  | 94.8    | 94.78   | 93.73   | 92.18    | 93.21   | 93.01   | 93.46   | NS       | NS      | 93.79   | 90.92  | 91.77   | 91.22  | NS      | 91.86   | 92.25   | 91.54    | 92.92                |



## AGWAY ENERGY PRODUCTS Groundwater Quality Trends

MONITORING WELL MW-8 Results in ug/L

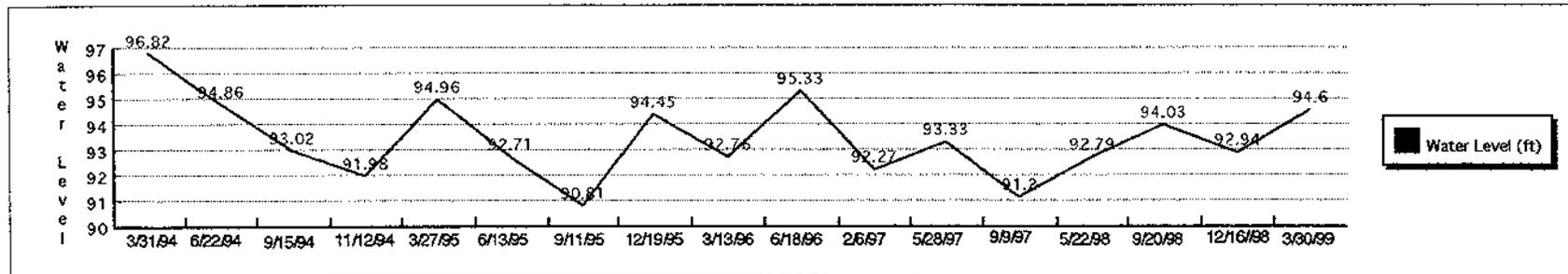
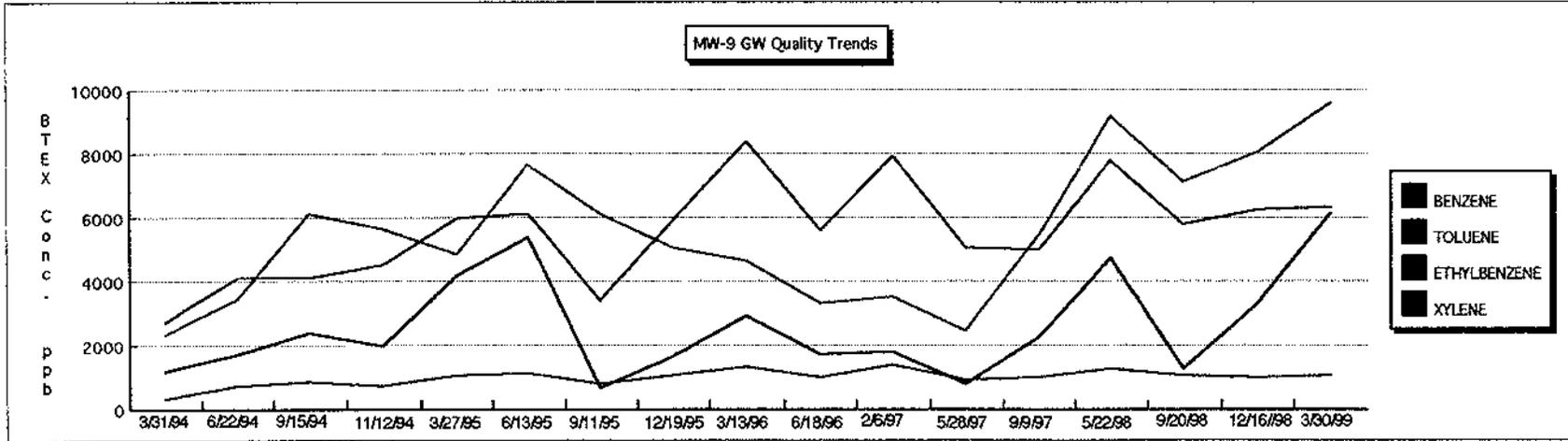
| PARAMETER        | 2/2/93 | 3/31/94 | 6/22/94 | 9/15/94 | 11/12/94 | 3/27/95 | 6/13/95 | 9/11/95 | 12/19/95 | 3/13/96 | 6/18/96 | 2/6/97 | 5/28/97 | 9/9/97 | 2/18/98 | 5/22/98 | 9/20/98 | 12/16/98 | 3/30/99     |
|------------------|--------|---------|---------|---------|----------|---------|---------|---------|----------|---------|---------|--------|---------|--------|---------|---------|---------|----------|-------------|
| BENZENE          | 7810   | 258     | 2220    | 4540    | 7400     | 993     | 10100   | 2910    | 465      | 130     | 984     | 908    | 955     | 5210   | 695     | 301     | 538     | 354      | <200        |
| TOLUENE          | ND     | 2040    | 13600   | 13800   | 17600    | 3300    | 24100   | 8900    | 3470     | 1230    | 6130    | 5050   | 6770    | 1030   | 13100   | 18400   | 13200   | 12500    | 3450        |
| ETHYLBENZENE     | 2090   | 50      | BDL     | 1520    | 1600     | 346     | 2150    | 886     | BDL      | BDL     | 899     | 658    | 200     | 9590   | TR<200  | 316     | 757     | 941      | <200        |
| XYLENE           | 11500  | 29900   | 30500   | 27100   | 22100    | 18300   | 8350    | 20700   | 20400    | 20800   | 25400   | 17000  | 15200   | 17000  | 25500   | 26200   | 24800   | 30200    | 21500       |
| MTBE             | 1470   | ND      | BDL     | BDL     | BDL      | BDL     | BDL     | BDL     | <2000    | BDL     | BDL     | <1000  | <2000   | <2000  | <2000   | <2000   | <2000   | <2000    | <2000       |
| TOTAL BTEX       | 21400  | 32248   | 46320   | 46950   | 48700    | 22939   | 58350   | 33396   | 24335    | 22160   | 33413   | 23616  | 22925   | 92830  | 39295   | 45217   | 29295   | 43995    | 23250.49 SD |
| Water Level (ft) | 93.43  | 95.45   | 94.48   | 93.4    | 92.35    | 95.18   | 93.04   | 92.73   | 93.96    | 94.03   | 94.87   | 91.5   | 92.77   | 91.25  | 93.17   | 92.75   | 93.35   | 92.8     | 94.08       |



## AGWAY ENERGY PRODUCTS Groundwater Quality Trends

MONITORING WELL MW-9 Results in ug/L

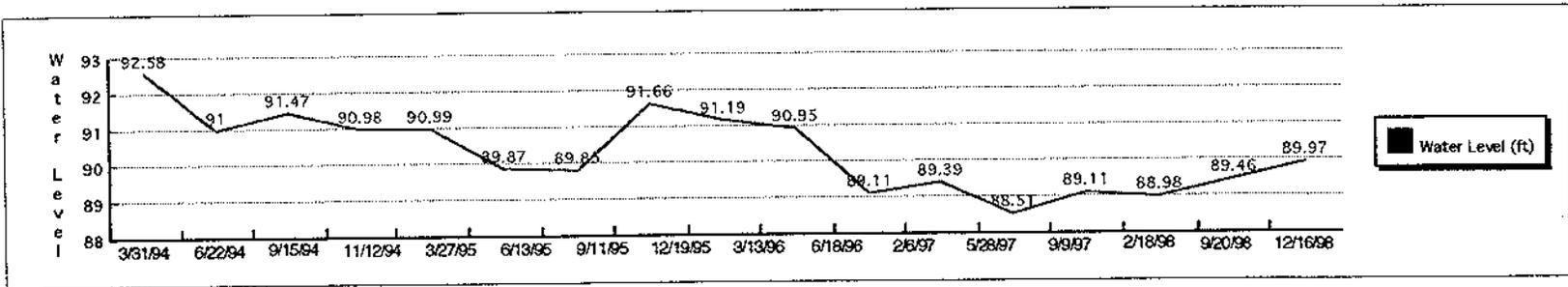
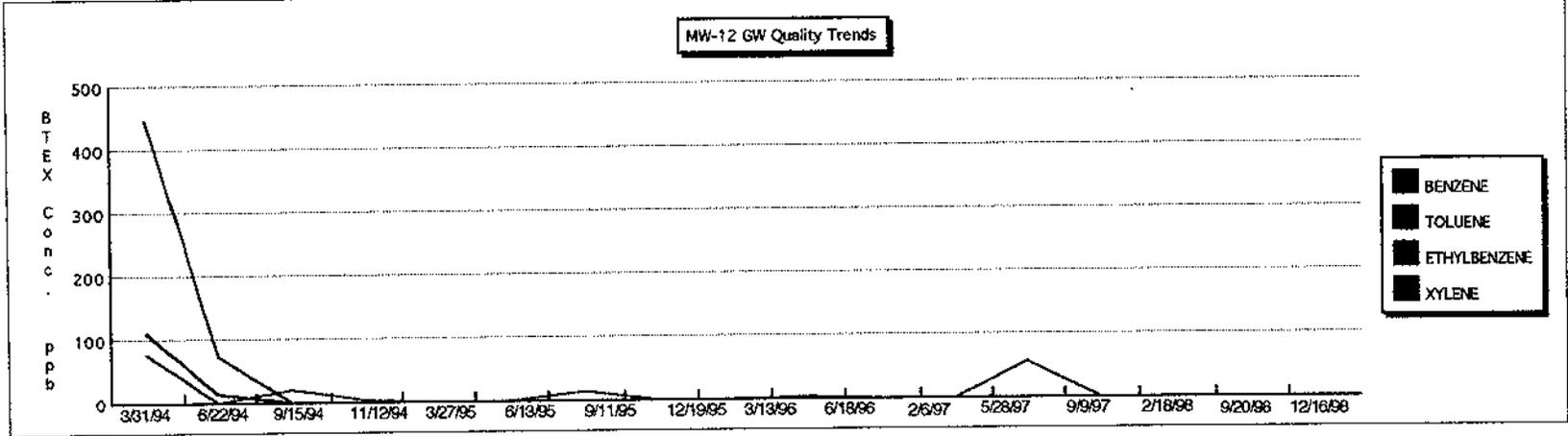
| PARAMETER        | 3/31/94 | 6/22/94 | 9/15/94 | 11/12/94 | 3/27/95 | 6/13/95 | 9/11/95 | 12/19/95 | 3/13/96 | 6/18/96 | 2/6/97 | 5/28/97 | 9/9/97 | 2/18/98 | 5/22/98 | 9/20/98 | 12/16/98 | 3/30/99                 |
|------------------|---------|---------|---------|----------|---------|---------|---------|----------|---------|---------|--------|---------|--------|---------|---------|---------|----------|-------------------------|
| BENZENE          | 2340    | 3490    | 6140    | 5700     | 4860    | 7690    | 6130    | 5090     | 4660    | 3310    | 3510   | 2470    | 5460   | NS      | 9230    | 7110    | 8080     | 9600                    |
| TOLUENE          | 1200    | 1710    | 2390    | 2000     | 4210    | 5420    | 678     | 1700     | 2910    | 1720    | 1830   | 813     | 2250   | NS      | 4750    | 1300    | 3320     | 6150                    |
| ETHYLBENZENE     | 358     | 723     | 860     | 758      | 1050    | 1130    | 815     | 1100     | 1350    | 1020    | 1400   | 948     | 1000   | NS      | 1300    | 1040    | 1020     | 1060                    |
| XYLENE           | 2730    | 4160    | 4160    | 4530     | 6030    | 6130    | 3370    | 5910     | 8400    | 5580    | 7960   | 5070    | 5030   | NS      | 7800    | 5810    | 6280     | 6360                    |
| MTBE             | 657     | BDL     | 768     | 600      | BDL     | 3650    | 2900    | <1000    | BDL     | BDL     | <1000  | <1000   | 2210   | NS      | <1000   | 2830    | 3360     | 3210                    |
| TOTAL BTEX       | 6628    | 10083   | 14010   | 12988    | 16150   | 20380   | 10893   | 13800    | 17320   | 11630   | 14700  | 9301    | 13740  | NS      | 23080   | 15260   | 18700    | 11657 <sup>23,190</sup> |
| Water Level (ft) | 96.82   | 94.86   | 93.02   | 91.98    | 94.96   | 92.71   | 90.81   | 94.45    | 92.76   | 95.33   | 92.27  | 93.33   | 91.2   | NS      | 92.79   | 94.03   | 92.94    | 94.6                    |



## AGWAY ENERGY PRODUCTS Groundwater Quality Trends

MONITORING WELL MW-12      Results in ug/L

| PARAMETER        | 3/31/94 | 6/22/94 | 9/15/94 | 11/12/94 | 3/27/95 | 6/13/95 | 9/11/95 | 12/19/95 | 3/13/96 | 6/18/96 | 2/6/97 | 5/28/97 | 9/9/97 | 2/18/98 | 5/22/98 | 9/20/98 | 12/16/98 | 3/30/99 |
|------------------|---------|---------|---------|----------|---------|---------|---------|----------|---------|---------|--------|---------|--------|---------|---------|---------|----------|---------|
| BENZENE          | ND      | BDL     | 19.9    | 1.8      | BDL     | BDL     | 13.7    | BDL      | 1.5     | 2.7     | <1     | <1      | 56.3   | <1      | NS      | 8.9     | <1       | <1      |
| TOLUENE          | 111     | 13      | BDL     | BDL      | BDL     | BDL     | BDL     | BDL      | BDL     | BDL     | <1     | <1      | <2     | <1      | NS      | <1      | <1       | <1      |
| ETHYLBENZENE     | 78      | BDL     | BDL     | BDL      | BDL     | BDL     | BDL     | BDL      | BDL     | BDL     | <1     | <1      | <2     | <1      | NS      | <1      | <1       | <1      |
| XYLENE           | 448     | 75      | BDL     | BDL      | BDL     | BDL     | BDL     | BDL      | BDL     | BDL     | <1     | <1      | <2     | <1      | NS      | <1      | <1       | <1      |
| MTBE             | ND      | 141     | 164     | 120      | 120     | 156     | 121     | 13.6     | 142     | 97.7    | <10    | <10     | 191    | <10     | NS      | 29.7    | <10      | <10     |
| TOTAL BTEX       | 637     | 88      | 20      | 1.8      | BDL     | BDL     | 13.7    | BDL      | 1.5     | 2.7     | BDL    | BDL     | 56.3   | BDL     | NS      | 8.9     | BDL      | BDL     |
| Water Level (ft) | 92.58   | 91      | 91.47   | 90.98    | 90.99   | 89.87   | 89.85   | 91.66    | 91.19   | 90.95   | 89.11  | 89.39   | 88.51  | 89.11   | 88.98   | 89.44   | 89.46    | 89.97   |



**APPENDIX 3**



18 February, 1999

Mr. Richard Williams  
Agway Energy Products  
P.O. Box 4852  
Syracuse, NY 13221-4852

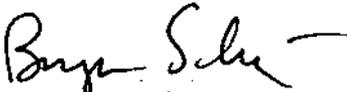
Re: Quarterly Groundwater Quality Monitoring  
Route 7 Agway, Middlebury, VT  
VT DEC Site #91-1159

Dear Mr. Williams;

Please find enclosed a work plan /cost estimate for the 1st Quarter 1999 sampling round of groundwater quality monitoring now due at the above referenced site. As suggested in Michael Young's (Sites Management Section, Department of Environmental Conservation) February 4th letter, we will be sampling in the month of March to keep on our quarterly schedule.

Upon DEC approval, our tentative sample date for this round is 2-3 March, 1999. As with the previous sampling rounds, the majority of the cost will be covered by the Petroleum Cleanup Fund (PCF) provided by the Vermont Department of Environmental Conservation. If you have any questions, please feel free to contact me.

Respectfully,

  
Bryan Schultz

cc: file 9632-003

Enclosures



18 February, 1999

Mr. Michael Young  
Sites Management Section  
VT Dept. of Environmental Conservation  
103 South Main / West Building  
Waterbury, VT 05671-0404

Re: Quarterly Groundwater Quality Monitoring  
Route 7 Agway, Middlebury, VT  
VT DEC Site #91-1159

Dear Mr. Young;

Please find enclosed a work plan /cost estimate for the 1st Quarter 1999 sampling round of groundwater quality monitoring now due at the above referenced site. As recommended in your 04 February, 1999 letter to Agway, this round will include sampling of all existing groundwater monitoring wells (MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-15, MW-16, and MW-19). All samples will be analyzed for BTEX and MTBE compounds via EPA Method 8021B. To continue the consistency of the yearly regime of monitoring, the off-site soil stockpile will not be screened via PID to monitor the reduction of contamination due to winter conditions that may result in soil too frozen to accurately monitor. The stockpiled soil monitoring will continue during the 2nd Quarter of monitoring scheduled for June 1999 at which time necessary repairs to the polyencapsulation will also be made.

With your approval, our tentative sample date for this round is 2 March, 1999. If you have any questions, please feel free to contact me.

Respectfully,

Julie A. Fortney  
kdai@together.net

cc: file 9632-003  
Richard Williams, Agway

Enclosures



# State of Vermont

Department of Fish and Wildlife  
Department of Forests, Parks and Recreation  
Department of Environmental Conservation  
State Geologist  
RELAY SERVICE FOR THE HEARING IMPAIRED  
1-800-253-0191 TDD>Voice  
1-800-253-0195 Voice>TDD

AGENCY OF NATURAL RESOURCES  
Department of Environmental Conservation  
Waste Management Division  
103 South Main Street/West Office Building  
Waterbury, VT 05671-0404  
Phone: (802) 241-3887  
Fax: (802) 241-3296

February 4, 1999

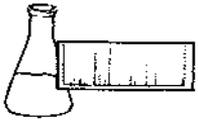
RICHARD WILLIAMS  
AGWAY ENERGY PRODUCTS  
P.O. BOX 4852  
SYRACUSE, NY 13221-4852

RE: Agway Energy Products, Middlebury, Vermont, Site # 91-1159

Dear Mr. Williams:

The Sites Management Section (SMS) has received and reviewed the Site Status Report, Supplementary Soil and Groundwater Quality Investigation, dated January 19, 1999 for the above referenced site. On December 16 and 29, 1998 KD Associates conducted photoionization detector (PID) screening of stockpiled soil and monitor well head space and groundwater gauging and sampling of nine (9) monitor wells. Based on the information contained in the report, the SMS has concluded the following:

- Free phase petroleum was not detected in any of the monitor wells sampled. Petroleum sheens or specks were noted on purge water from monitor wells MW-1, MW-5, MW-6 and MW-8.
- Benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) were detected at various concentrations in groundwater samples collected from the site. Ground Water Enforcement Standards (GWES) for all BTEX compounds were exceeded in the sample collected from monitor well MW-1 and MW-8. The GWES for benzene, toluene and ethylbenzene was exceeded in the sample collected from monitor well MW-9 while the GWES for benzene and ethyl benzene was exceeded in the sample collected from monitor well MW-6. The GWES for MTBE was exceeded in sample MW-9.
- Due to elevated detection limits for MTBE, the GWES may have been exceeded in groundwater samples collected from monitor wells MW-1, MW-5, MW-6, and MW-8.
- Depth to groundwater varied from 3.28 to 5.20 feet below ground surface (BGS).
- PID screening of stockpiled soils detected elevated total organic vapor readings from 0.2 parts per million (ppm) to 3.7 ppm.



**ENDYNE, INC.**

Laboratory Services

32 James Brown Drive  
Williston, Vermont 05495  
(802) 879-4333  
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: K-D Associates, Inc.  
PROJECT NAME: 9632-003/Ag-Midd  
REPORT DATE: April 12, 1999  
DATE SAMPLED: March 30, 1999

ORDER ID: 1769  
REF.#: 136,041 - 136,059

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated sample preservation with HCl. However, samples 136045, 136046 and 136052 were found to have a neutral pH.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

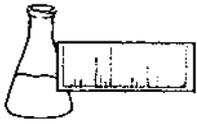
Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures



### EPA METHOD 8021B--PURGEABLE AROMATICS

CLIENT: K-D Associates, Inc.

DATE RECEIVED: March 30, 1999

PROJECT NAME: 9632-003/Ag-Midd

REPORT DATE: April 12, 1999

CLIENT PROJ. #: 9632-003

ORDER ID: 1769

| Ref. #:                 | 136,041      | 136,042      | 136,043      | 136,044      | 136,045      |
|-------------------------|--------------|--------------|--------------|--------------|--------------|
| Site:                   | Trip Blank   | Field Blank  | MW-1         | MW-2         | MW-3         |
| Date Sampled:           | 3/30/99      | 3/30/99      | 3/30/99      | 3/30/99      | 3/30/99      |
| Time Sampled:           | 8:00         | 8:40         | 4:15         | 3:15         | 2:10         |
| Sampler:                | J. Fortney   |
| Date Analyzed:          | 4/9/99       | 4/9/99       | 4/9/99       | 4/9/99       | 4/8/99       |
| UIP Count:              | 0            | 0            | >10          | 0            | >10          |
| Dil. Factor (%):        | 100          | 100          | 1            | 100          | 100          |
| Surr % Rec. (%):        | 82           | 83           | 85           | 86           | 89           |
| Parameter               | Conc. (ug/L) |
| MTBE                    | TBQ <10      | <10          | <1000        | <10          | 48.6         |
| Benzene                 | <1           | <1           | <100         | <1           | <1           |
| Toluene                 | TBQ <1       | <1           | 334.         | <1           | <1           |
| Ethylbenzene            | <1           | <1           | 152.         | <1           | <1           |
| Xylenes                 | <1           | <1           | 5,410.       | <1           | <1           |
| 1,3,5 Trimethyl Benzene | <1           | <1           | 1,460.       | <1           | <1           |
| 1,2,4 Trimethyl Benzene | <1           | <1           | 4,000.       | <1           | <1           |
| Naphthalene             | <1           | <1           | 428.         | <1           | <1           |

| Ref. #:                 | 136,046      | 136,047      | 136,048      | 136,049      | 136,050      |
|-------------------------|--------------|--------------|--------------|--------------|--------------|
| Site:                   | MW-4         | MW-5         | MW-6         | MW-7         | MW-8         |
| Date Sampled:           | 3/30/99      | 3/30/99      | 3/30/99      | 3/30/99      | 3/30/99      |
| Time Sampled:           | 1:30         | 10:30        | 11:15        | 11:40        | 12:00        |
| Sampler:                | J. Fortney   |
| Date Analyzed:          | 4/9/99       | 4/9/99       | 4/9/99       | 4/9/99       | 4/9/99       |
| UIP Count:              | 0            | >10          | >10          | 0            | >10          |
| Dil. Factor (%):        | 100          | 1            | 2            | 100          | 0.5          |
| Surr % Rec. (%):        | 84           | 93           | 86           | 84           | 93           |
| Parameter               | Conc. (ug/L) |
| MTBE                    | <10          | <1000        | <500         | <10          | <2000        |
| Benzene                 | <1           | <100         | 51.5         | <1           | <200         |
| Toluene                 | <1           | 948.         | 140.         | <1           | 3,450.       |
| Ethylbenzene            | <1           | 154.         | 1,260.       | <1           | TBQ <200     |
| Xylenes                 | <1           | 13,900.      | 6,830.       | <1           | 21,500.      |
| 1,3,5 Trimethyl Benzene | <1           | 1,310.       | 1,010.       | <1           | 1,750.       |
| 1,2,4 Trimethyl Benzene | <1           | 2,990.       | 2,910.       | <1           | 4,290.       |
| Naphthalene             | <1           | 400.         | 366.         | <1           | 637.         |

Note: UIP = Unidentified Peaks    TBQ = Trace Below Quantitation    NI = Not Indicated



### EPA METHOD 8021B--PURGEABLE AROMATICS

CLIENT: K-D Associates, Inc.

DATE RECEIVED: March 30, 1999

PROJECT NAME: 9632-003/Ag-Midd

REPORT DATE: April 12, 1999

CLIENT PROJ. #: 9632-003

ORDER ID: 1769

| Ref. #:                 | 136,051        | 136,052      | 136,053      | 136,054      | 136,055      |
|-------------------------|----------------|--------------|--------------|--------------|--------------|
| Site:                   | Duplicate MW-8 | MW-9         | MW-10        | MW-11        | MW-12        |
| Date Sampled:           | 3/30/99        | 3/30/99      | 3/30/99      | 3/30/99      | 3/30/99      |
| Time Sampled:           | 12:05          | 2:50         | 9:00         | 9:20         | 9:50         |
| Sampler:                | J. Fortney     | J. Fortney   | J. Fortney   | J. Fortney   | J. Fortney   |
| Date Analyzed:          | 4/9/99         | 4/9/99       | 4/9/99       | 4/9/99       | 4/9/99       |
| UIP Count:              | >10            | >10          | 0            | 0            | 0            |
| Dil. Factor (%):        | 0.5            | 1            | 100          | 100          | 100          |
| Surr % Rec. (%):        | 90             | 86           | 86           | 83           | 78           |
| Parameter               | Conc. (ug/L)   | Conc. (ug/L) | Conc. (ug/L) | Conc. (ug/L) | Conc. (ug/L) |
| MTBE                    | <2000          | 3,210.       | <10          | <10          | <10          |
| Benzene                 | <200           | 9,600.       | <1           | <1           | <1           |
| Toluene                 | 3,350.         | 6,150.       | <1           | <1           | <1           |
| Ethylbenzene            | TBQ <200       | 1,060.       | <1           | <1           | <1           |
| Xylenes                 | 21,200.        | 6,360.       | <1           | <1           | <1           |
| 1,3,5 Trimethyl Benzene | 1,720.         | 427.         | <1           | <1           | <1           |
| 1,2,4 Trimethyl Benzene | 4,190.         | 1,200.       | <1           | <1           | <1           |
| Naphthalene             | 717.           | 521.         | <1           | <1           | <1           |

| Ref. #:                 | 136,056      | 136,057      | 136,058      | 136,059      |  |
|-------------------------|--------------|--------------|--------------|--------------|--|
| Site:                   | MW-13        | MW-15        | MW-16        | MW-19        |  |
| Date Sampled:           | 3/30/99      | 3/30/99      | 3/30/99      | 3/30/99      |  |
| Time Sampled:           | 1:05         | 2:30         | 3:40         | 4:00         |  |
| Sampler:                | J. Fortney   | J. Fortney   | J. Fortney   | J. Fortney   |  |
| Date Analyzed:          | 4/9/99       | 4/9/99       | 4/10/99      | 4/9/99       |  |
| UIP Count:              | 0            | 0            | 0            | 0            |  |
| Dil. Factor (%):        | 100          | 100          | 100          | 100          |  |
| Surr % Rec. (%):        | 83           | 87           | 84           | 90           |  |
| Parameter               | Conc. (ug/L) | Conc. (ug/L) | Conc. (ug/L) | Conc. (ug/L) |  |
| MTBE                    | <10          | <10          | <10          | <10          |  |
| Benzene                 | <1           | <1           | <1           | <1           |  |
| Toluene                 | <1           | <1           | <1           | <1           |  |
| Ethylbenzene            | <1           | <1           | <1           | <1           |  |
| Xylenes                 | <1           | <1           | <1           | <1           |  |
| 1,3,5 Trimethyl Benzene | <1           | <1           | <1           | <1           |  |
| 1,2,4 Trimethyl Benzene | <1           | <1           | <1           | <1           |  |
| Naphthalene             | <1           | <1           | <1           | <1           |  |

Note: UIP = Unidentified Peaks    TBQ = Trace Below Quantitation    NI = Not Indicated

CHAIN-OF-CUSTODY RECORD

30803

F 019

|                             |                                 |                            |
|-----------------------------|---------------------------------|----------------------------|
| Project Name: 7632 - 003    | Reporting Address: [unclear]    | Billing Address: [unclear] |
| Site Location: 40 - M.00    |                                 |                            |
| Endyne Project Number: 1769 | Company: [unclear]              | Sampler Name: [unclear]    |
|                             | Contact Name/Phone #: [unclear] | Phone #: 802-7996          |

| Lab #  | Sample Location | Matrix           | G<br>R<br>A<br>B | C<br>O<br>M<br>P | Date/Time | Sample Containers |           | Field Results/Remarks      | Analysis Required | Sample Preservation | Rush |
|--------|-----------------|------------------|------------------|------------------|-----------|-------------------|-----------|----------------------------|-------------------|---------------------|------|
|        |                 |                  |                  |                  |           | No.               | Type/Size |                            |                   |                     |      |
| 136041 | TRAP BLANK      | H <sub>2</sub> O | X                |                  | 3/30/99   | 2                 | 40ml      |                            | EPA 8021B         | HC1                 | No   |
| 136042 | FIELD BLANK     |                  |                  |                  |           |                   |           |                            |                   |                     |      |
| 136043 | MW-1            |                  |                  |                  | 4/15/99   |                   |           | lock room H <sub>2</sub> O |                   |                     |      |
| 136044 | MW-2            |                  |                  |                  | 5/12/99   |                   |           |                            |                   |                     |      |
| 136045 | MW-3            |                  |                  |                  | 2/10/99   |                   |           |                            |                   |                     |      |
| 136046 | MW-4            |                  |                  |                  | 1/10/99   |                   |           |                            |                   |                     |      |
| 136047 | MW-5            |                  |                  |                  | 10/30/98  |                   |           |                            |                   |                     |      |
| 136048 | MW-6            |                  |                  |                  | 11/15/98  |                   |           |                            |                   |                     |      |
| 136049 | MW-7            |                  |                  |                  | 11/10/98  |                   |           |                            |                   |                     |      |
| 136050 | MW-8            |                  |                  |                  | 11/00/98  |                   |           |                            |                   |                     |      |
| 136051 | MW-8 Duplicate  |                  |                  |                  | 11/05/98  |                   |           |                            |                   |                     |      |
| 136052 | MW-9            |                  |                  |                  | 2/10/99   |                   |           |                            |                   |                     |      |

|                                      |                                  |                        |
|--------------------------------------|----------------------------------|------------------------|
| Relinquished by: Signature [unclear] | Received by: Signature [unclear] | Date/Time 3/31/99 4:20 |
| Relinquished by: Signature           | Received by: Signature           | Date/Time              |

New York State Project: Yes  No  Requested Analyses

|    |   |    |                  |    |              |    |                    |    |                  |    |                      |
|----|---|----|------------------|----|--------------|----|--------------------|----|------------------|----|----------------------|
| 1  | pH  | 6  | TKN              | 11 | Total Solids | 16 | Metals (Specify)   | 21 | EPA 624          | 26 | EPA 8270 B/N or Acid |
| 2  | Chloride  | 7  | Total P          | 12 | TSS          | 17 | Coliform (Specify) | 22 | EPA 625 B/N or A | 27 | EPA 8010/8020        |
| 3  | Ammonia N   | 8  | Total Diss. P    | 13 | TDS          | 18 | COD                | 23 | EPA 418.1        | 28 | EPA 8080 Pest/PCB    |
| 4  | Nitrite N   | 9  | BOD <sub>5</sub> | 14 | Turbidity    | 19 | BTEX               | 24 | EPA 608 Pest/PCB |    |                      |
| 5  | Nitrate N   | 10 | Alkalinity       | 15 | Conductivity | 20 | EPA 601/602        | 25 | EPA 8240         |    |                      |
| 29 | TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides) |    |                  |    |              |    |                    |    |                  |    |                      |
| 30 | Other (Specify): EPA 8021B  |    |                  |    |              |    |                    |    |                  |    |                      |

**CHAIN-OF-CUSTODY RECORD**

|   |  |  |
|---|--|--|
| Project Name: 9632-003<br>Site Location: A-1-M100 | Reporting Address:<br>K.D. ASSOCIATES INC            | Billing Address:<br>SAME                         |
| Endyne Project Number:                            | Company: KDAI<br>Contact Name/Phone #: JULIE FORTNEY | Sampler Name: JULIE FORTNEY<br>Phone #: 862-7490 |

| Lab #  | Sample Location | Matrix           | G<br>R<br>A<br>B | C<br>O<br>M<br>P | Date/Time | Sample Containers |           | Field Results/Remarks | Analysis Required | Sample Preservation | Rush |
|--------|-----------------|------------------|------------------|------------------|-----------|-------------------|-----------|-----------------------|-------------------|---------------------|------|
|        |                 |                  |                  |                  |           | No.               | Type/Size |                       |                   |                     |      |
| 136053 | MW-10           | H <sub>2</sub> O | X                |                  | 1:00pm    | 2                 | 40ml      |                       | LVA80215          | HCl                 | No   |
| 136054 | MW-11           | ↓                | ↓                |                  | 4:10pm    | ↓                 | ↓         |                       | ↓                 | ↓                   | ↓    |
| 136055 | MW-12           | ↓                | ↓                |                  | 7:50pm    | ↓                 | ↓         |                       | ↓                 | ↓                   | ↓    |
| 136056 | MW-13           | ↓                | ↓                |                  | 1:05pm    | ↓                 | ↓         |                       | ↓                 | ↓                   | ↓    |
| 136057 | MW-15           | ↓                | ↓                |                  | 2:50pm    | ↓                 | ↓         |                       | ↓                 | ↓                   | ↓    |
| 136058 | MW-16           | ↓                | ↓                |                  | 3:10pm    | ↓                 | ↓         |                       | ↓                 | ↓                   | ↓    |
| 136059 | MW-19           | ↓                | ↓                |                  | 4:10pm    | ↓                 | ↓         |                       | ↓                 | ↓                   | ↓    |

|   |   |                         |
|---|---|-------------------------|
| Relinquished by: Signature <i>Julie A Fortney</i> | Received by: Signature <i>William Wallace</i> | Date/Time: 3/31/99 4:20 |
| Relinquished by: Signature                        | Received by: Signature                        | Date/Time               |

New York State Project: Yes  No  Requested Analyses

|      |   |    |                  |    |              |    |                    |    |                  |    |                      |
|------|---|----|------------------|----|--------------|----|--------------------|----|------------------|----|----------------------|
| 1    | pH  | 6  | TKN              | 11 | Total Solids | 16 | Metals (Specify)   | 21 | EPA 624          | 26 | EPA 8270 B/N or Acid |
| 2    | Chloride  | 7  | Total P          | 12 | TSS          | 17 | Coliform (Specify) | 22 | EPA 625 B/N or A | 27 | EPA 8010/8020        |
| 3    | Ammonia N   | 8  | Total Diss. P    | 13 | TDS          | 18 | COD                | 23 | EPA 418.1        | 28 | EPA 8080 Pest/PCB    |
| 4    | Nitrite N   | 9  | BOD <sub>5</sub> | 14 | Turbidity    | 19 | BTEX               | 24 | EPA 608 Pest/PCB |    |                      |
| 5    | Nitrate N   | 10 | Alkalinity       | 15 | Conductivity | 20 | EPA 601/602        | 25 | EPA 8240         |    |                      |
| 29   | TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides) |    |                  |    |              |    |                    |    |                  |    |                      |
| (30) | Other (Specify): EPA 8021 B   |    |                  |    |              |    |                    |    |                  |    |                      |