AGWAY / McEWING FUELS

134 Main Street
Essex Junction, Vermont

VTDEC Site #93-1476

SITE STATUS REPORT

GROUNDWATER QUALITY SAMPLING

October 26, 1998

Prepared for:

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1.0 INTRODUCTION

The following is a report on the results of the first round of monitoring and sampling activities completed by K-D Associates, Inc. (KDAI) at the Agway / McEwing Fuels site in Essex Junction, Vermont. The Agway / McEwing Fuels site is located on the northwest side of Route 7 (Main Street) in the village of Essex Junction (see U.S.G.S. Topographic Map Section - Site Map, Appendix 1, page 1). Over the past 50 years, the business use of this property has been associated with petroleum storage. In 1990, Agway Energy Products (Agway) purchased the business assets and equipment of the former business on site (McEwing Fuels) and leased the property while operating its fuel storage/delivery business.

1.1 Project Overview

During the June 25, 1998 removal of two 20,000 gallon underground storage tanks (USTs), soil and groundwater contamination was discovered in the excavation areas. At the conclusion of the removal process, KDAI reported that additional investigative efforts were recommended to assess the degree and extent of contamination. KDAI subsequently submitted a Site Investigation Expressway Notification Form to the Sites Management Section (SMS) of the Vermont Agency of Natural Resources - Waste Management Division. The "Expressway" process allows for the timely implementation of a Site Investigation without the submittal of a work plan or written authorization from the SMS, provided the work is completed in accordance with SMS guidance documents. SMS Expressway approval was granted by Mr. Bob Butler on August 7, 1998. KDAI's work plan included at least five soil borings across the site, including locations within the former tank beds and areas believed to be hydraulically upgradient and downgradient of the former USTs. Groundwater samples from the shallow water table would then be collected and analyzed for petroleum compounds (primarily BTEX) via EPA Method 602. The purpose of this soil boring/groundwater sampling was to evaluate soil and groundwater quality conditions and define the limits of contamination on site.

KDAI initiated the on-site work plan on September 7, 1998. Based on field information and favorable drilling conditions, a total of ten soil borings were advanced with six of the borings converted to permanent groundwater monitoring wells. Because the business use of this site has had a history of petroleum storage and this site previously was an active DEC Site, two of the groundwater samples were chosen to have an additional analysis of Total Petroleum Hydrocarbons (Method 8100 TPH) with hydrocarbon aging to determine if historical releases continue to have an impact on site. This Site Status Report uses the resulting laboratory data, water table measurements, and historical site information.

2.0 SOIL BORING / MONITORING WELL INSTALLATION

Based on the 50 year history of petroleum storage at this site, our investigation focused on evaluating soil and groundwater conditions in the vicinity of the former USTs on site. Depth to groundwater was anticipated to be approximately 5 feet below ground surface (bgs), and therefore all soil borings were completed by hand bucket auger. All down-hole tools were cleaned (decontaminated) prior to use with a soap solution followed by a clean water rinse.

A total of 10 soil borings were completed on September 7, 1998, with six borings completed with the installation of 2" PVC monitoring wells. (see Site Map, Appendix 1, page 2 for locations). Monitoring wells were developed by aggressive bailing after installation. Soil samples recovered during the boring operation were logged and screened for the presence of volatile organic compounds (vapors) with a photoionization detector or PID (Photovac MicroTip with 10.6 eV lamp). The PID was calibrated on site to a benzene equivalent standard (Isobutylene 100 ppm in air). Samples were placed in self-sealing plastic bags for headspace sampling. Soil Boring Logs can be found in Appendix 2, pages 3 - 12.

The strategy and goals of the soil boring/well installation program were: 1) to satisfy the SMS's requirements for Site Investigations and determine if Corrective Action is warranted, and 2) to evaluate the degree and extent of contamination as it relates to the period of time that Agway occupied the site. The siting of the soil boring/monitoring well locations included one boring in each of the two recently removed 20,000 gallon tank beds, one located hydraulically upgradient of the UST sites, and at least two borings located hydraulically downgradient of the UST sites. After discovering dramatically different soil and water table information from the first two downgradient borings, one additional well and four additional borings were installed. A brief description of the rational used to site each borings and a summary of fields results are as follows:

<u>MW-1</u> The first soil boring completed, MW-1 was located 53 feet west of the "Rear Shed" which served as the fuel dispensing area where diesel fuel delivery trucks were filled when dispatched to deliver to customers. Based on groundwater flow observed during the recent UST removal, this site was selected to serve as the upgradient groundwater point. Saturated soil indicating the shallow water table was encountered at 4.0 feet bgs. No elevated PID readings were noted throughout this boring. The well was completed with 0.010 in. slot PVC well screen set across the water table.

<u>MW-2 and MW-3</u> MW-2 was located within the former 20,000 gallon diesel UST site, and MW-3 was located within the former 20,000 gallon No. 2 oil UST site. Both well sites were chosen to represent "worst case" conditions as the contamination on site is assumed to originate

from spills and/or from tank piping leaks. Soil types encountered do not represent the native types and strata because all of the soil and non-native backfill which was removed during the UST removals was replaced indiscriminately. Saturated mixed soil was encountered at 2.0 feet bgs during the installation of both wells. Elevated PID readings noted included a peak of 88 ppm from a composite sample representing 3.0' - 7.5' at MW-2, and a peak reading of 135 ppm from 2.0-3.0' at MW-3. Both borings did not extend beyond the depth of the UST excavation (14.0') due to the risk of breaking through the clay impeding layer observed during the UST removals. Each well was completed with 0.010 in. slot PVC well screen set across the water table.

MW-4 This boring was located near the southeast corner of the property to serve as a downgradient water table control point. It was the first boring which did not encounter a stiff, grey clay layer noted in the previous borings approximately 3 feet below the surface. Instead, this boring remained dry through silty clay until a tan, medium soft clay was encountered at 8.0'. No elevated PID readings were noted throughout this boring. The well was completed with 0.010 in. slot PVC well screen set across the water table.

SB-5, SB-6, SB-7, SB-10 These soil borings were sited north and south of the expected west-to-east path of contaminant migration to determine if there was a lateral flow component and/or if the surface drainage may have affected the spread of contamination. With the exception of SB-7 (28.7 ppm peak), no detectable PID readings (<0.1 ppm) were noted during the installation these borings. No permanent well materials were installed.

MW-8 and MW-9 These well locations were chosen to serve as downgradient water table control points. MW-8 was installed at the eastern property boundary and, similar to MW-4, did not encounter the stiff, grey clay layer observed at the tank sites. When no detectable PID readings were noted, KDAI elected to install MW-9 at a point approximately midway between MW-8 and MW-3 (a point known to exhibit contamination). MW-9 was the last point to encounter the impeding clay layer at near surface depths (± 2.0' bgs). Elevated PID readings were also noted during this boring (9.9 ppm at 1.5' bgs).

3.0 GROUNDWATER QUALITY SAMPLING

The groundwater monitoring well array at the Agway / McEwing site was sampled by KDAI on September 8, 1998. A site plan depicting the location of the monitoring wells is provided in Appendix 1, page 2. The results of the groundwater quality sampling are summarized in Table 2 (see Appendix 2, page 1). The individual laboratory report forms for the groundwater sample analyses are provided in Appendix 3.

All 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) via EPA Method 602. Additionally, two samples were also analyzed for TPH and hydrocarbon aging by Method 8100.

3.1 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 three 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 calibrated 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/Field Blank sample and a Duplicate sample. The QA/QC results are included in Appendix 3.

3.2 Field Measurements and Observations

The monitoring well array was surveyed by KDAI on September 10, 1998 establishing the location and elevation of all monitoring wells. The well point elevation data, water level measurements, and groundwater elevation data are tabulated on the attached Table 1 (see Appendix 1, page 5). Depths to the water table at the site ranged from 1.32 feet at well MW-9 near the eastern side of the site to 3.56 feet at well MW-1 at the western side of the site.

Contouring of the water table (using water level measurements and well point elevations of the groundwater monitoring wells) indicates that groundwater flow is predominantly west to east at a gradient of 0.036 feet/foot (see Groundwater Contour Map, Appendix 1, page 4).

The interface probe product gauging performed prior to sampling yielded no detectable free-phase

product in any of the monitoring wells at the site. The pre-sampling PID screening of the monitoring well headspaces yielded vapor levels ranging from 49.1 ppm in well MW-2 (located in the former diesel UST area) to less than 1 ppm in well MW-1 (located upgradient of the source area). The PID headspace screening results are provided in Table 2 (see Appendix 2, page 1).

3.3 Groundwater Sampling Results

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

The EPA Method 602 assays indicate that groundwater at monitoring well locations MW-2 and MW-3 contain detectable levels of BTEX compounds, but none exceed the VTDEC Ground Water Enforcement Standard limits (GWES). These two monitoring locations represent sample points within the excavation areas of the former 20,000 gallon diesel and 20,000 gallon No. 2 oil USTs. Notably, no BTEX contaminants were detected in groundwater sampled at any other up-gradient or down-gradient monitoring well site, and thus it appears that the contamination is largely confined to the tank site proper.

The concentration and distribution of BTEX compounds in groundwater as depicted on the attached contaminant distribution map (see Appendix 2, page 2) shows a limited area of petroleum contaminants on the property. Total Petroleum Hydrocarbon (TPH) analysis from MW-2 and MW-3 indicates concentrations of 7.25 ppm and 6.78 ppm respectively. Carbon aging, a laboratory technique limited in its accuracy to ±5 years, has determined that the contamination at these sampling sites is greater than 20 years old.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater elevation survey indicates that the direction of groundwater flow at this Agway site is primarily northwest to southeast. The relatively shallow water table and moderate gradient (0.036 ft/ft) does not appear to be affected by underground structures and/or utility line trenches. There are two culverts on site buried less than 1 foot below grade which moved storm water from the driveway to a shallow swale across the southern side of the property. These culverts are situated above the water table and are not believed to influence the flow of groundwater or migration of contamination.

The results of the PID soil vapor screening conducted during the soil boring activity indicates that the potential for exposure to the contamination resident in the soil at the site is minimal, provided that the present grade is not changed. Elevated PID readings were detected during the UST removals (up to 240 ppm) and during the installation of MW-2 and MW-3 (up to 96 ppm) in the soil from 1 - 2 feet below grade, and could pose a contact hazard if excavated. The ground floor of the Office Building was screened using the PID, but no detectable readings (<0.1 ppm) were recorded. The nearest neighboring structures are approximately 300 feet east and south of the release area. These buildings were not tested because the borings/wells that lie between the source and these structures (MW4, MW-8, SB-6 and SB-10) produced no detectable PID readings. This area is served by municipal water supply, and there are no surface waters within 1000 feet of this site.

Groundwater quality sampling results indicate that an area of petroleum contamination exists in and around the former 20,000 gallon diesel and 20,000 gallon No. 2 oil UST sites. The contaminant plume does not appear to have migrated from the UST release site(s). No free-phase product was detected in any of the monitoring wells at the site, and the concentration of BTEX dissolved in groundwater at well MW-2 and MW-3 did not exceed the VANR Ground Water Enforcement Standard limits.

In conclusion, there is evidence of localized contamination in soil and groundwater at this Agway site. Based on information to date, it appears that historical and repeated spills/releases to the surface and leaking UST piping have contributed to the contamination observed and detected on site. Prior to the recent UST removals, this property had previously been an active VTDEC Site. KDAI made an attempt to review the SMS file on this site, however, the file could not be located by the Waste Management Division's Document Control Officer. Based on the contamination's carbon aging results it appears that release(s) and/or activities prior to Agway's use of the site may have had the greater impact on water quality.

The low groundwater contaminant levels are somewhat surprising considering levels recorded in the soil by PID during the UST removals and the PID headspace readings in the wells prior to sampling. Therefore, we recommend that monitoring of groundwater conditions at the site be continued with at least one more round of sampling on a quarterly basis.

Respectfully submitted,

Bryan Schultz,
Principal

Julie A. Fortney,
Project Scientist

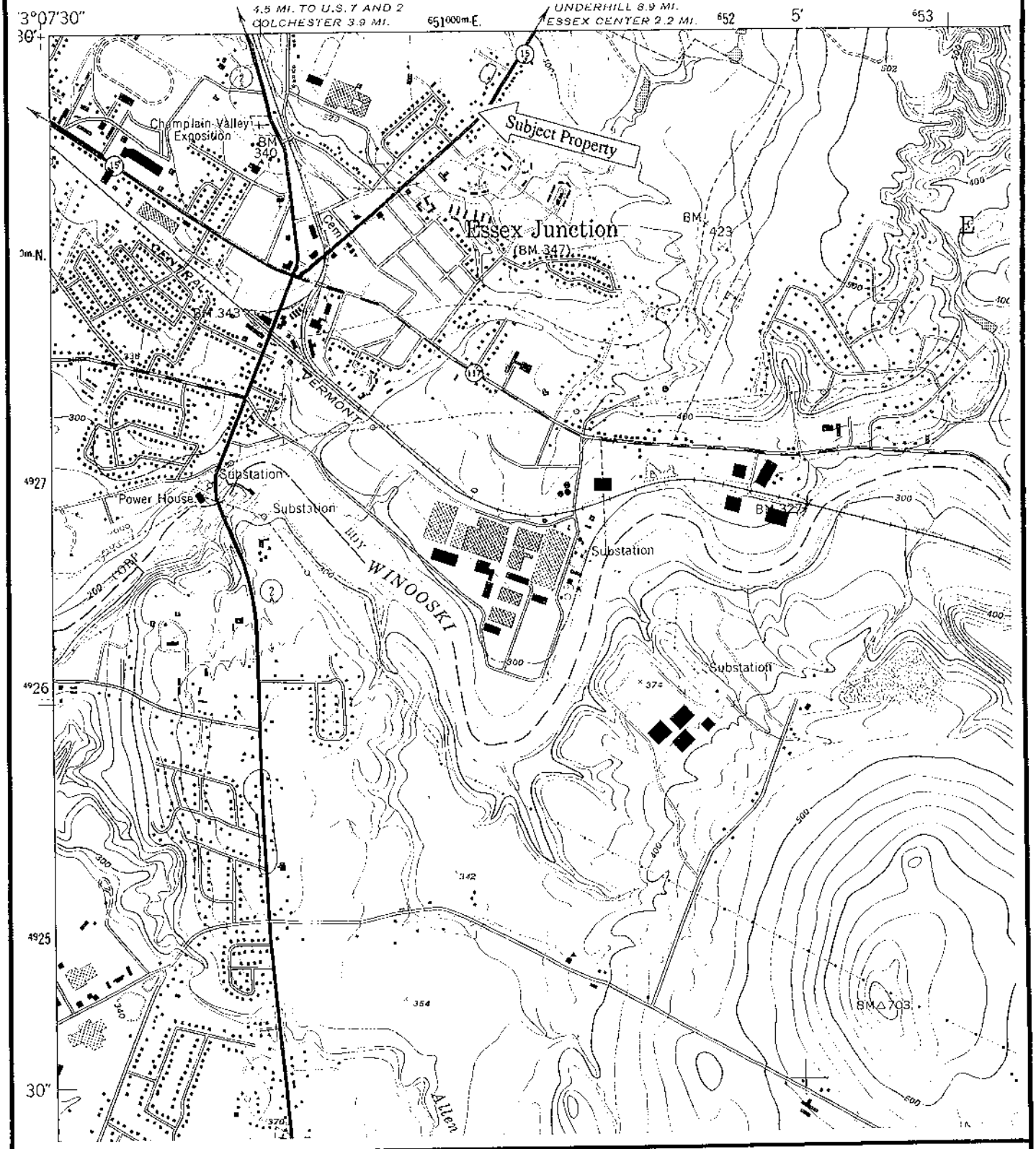
cc: Richard Williams, Agway Energy Products
Susan Alexander, Agway Energy Products

Enclosures

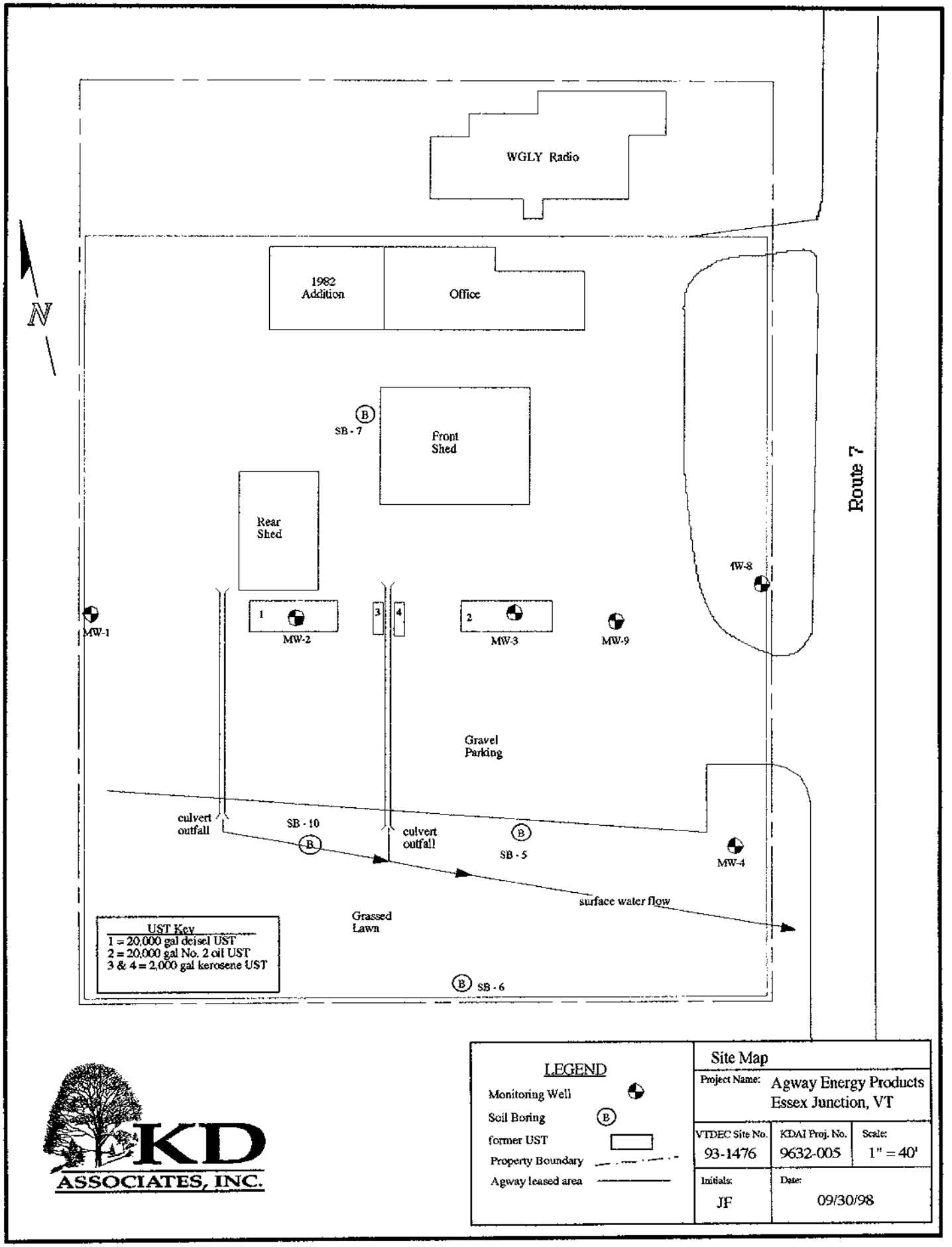
2vx/Agway-Essex rept1/bs

APPENDIX 1

Vicinity Map



Site: AGWAY / McEWING FUELS 134 Main Street Essex Junction, Vermont	KDAI Project No. 9632-005 Date: 10-01-98 Initial: BS	Scale: 1:24,000 Source: U.S.G.S. 7.5 minute topo Essex Jct., VT Quadrangles



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LEGEND

Monitoring Well

Soil Boring

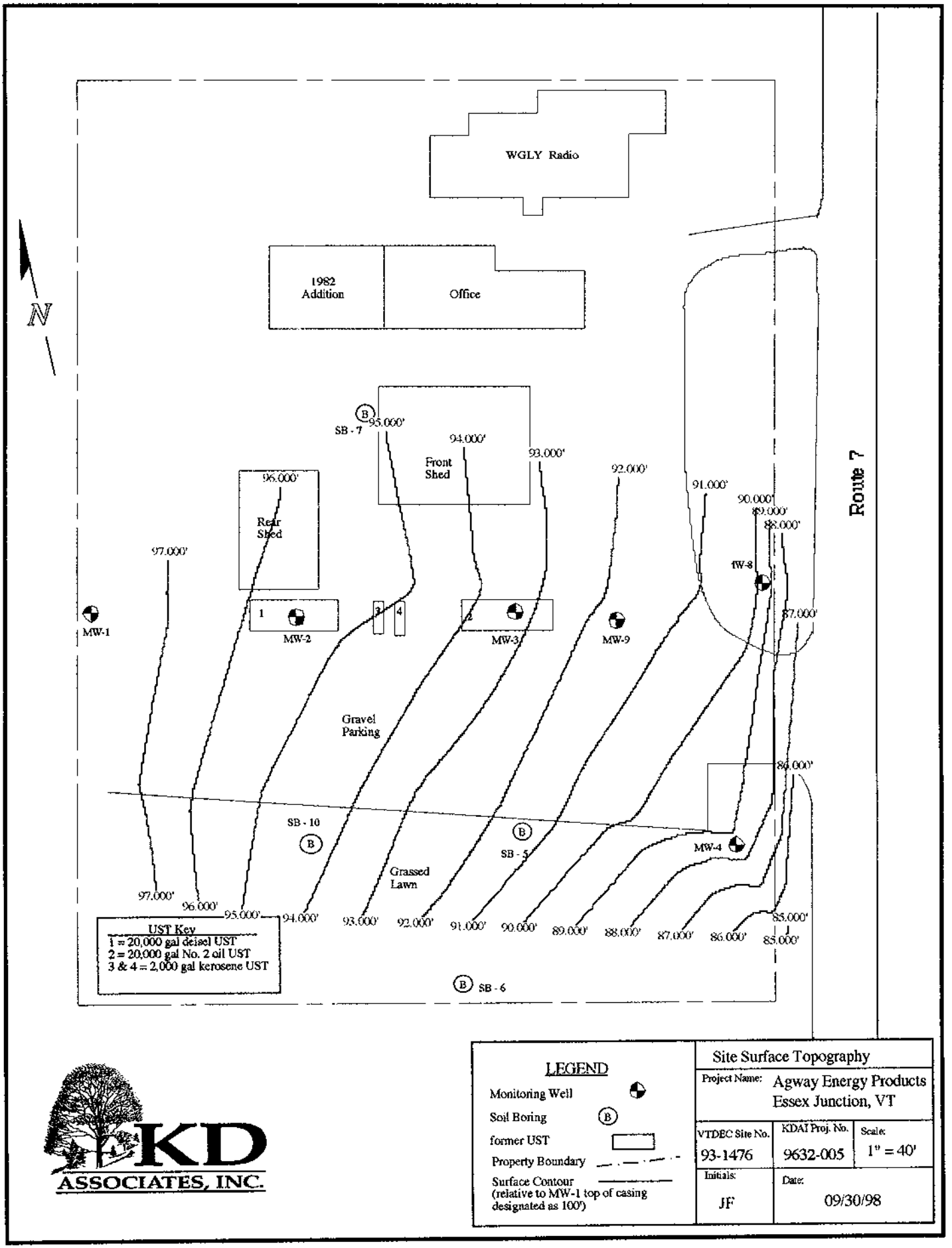
former UST

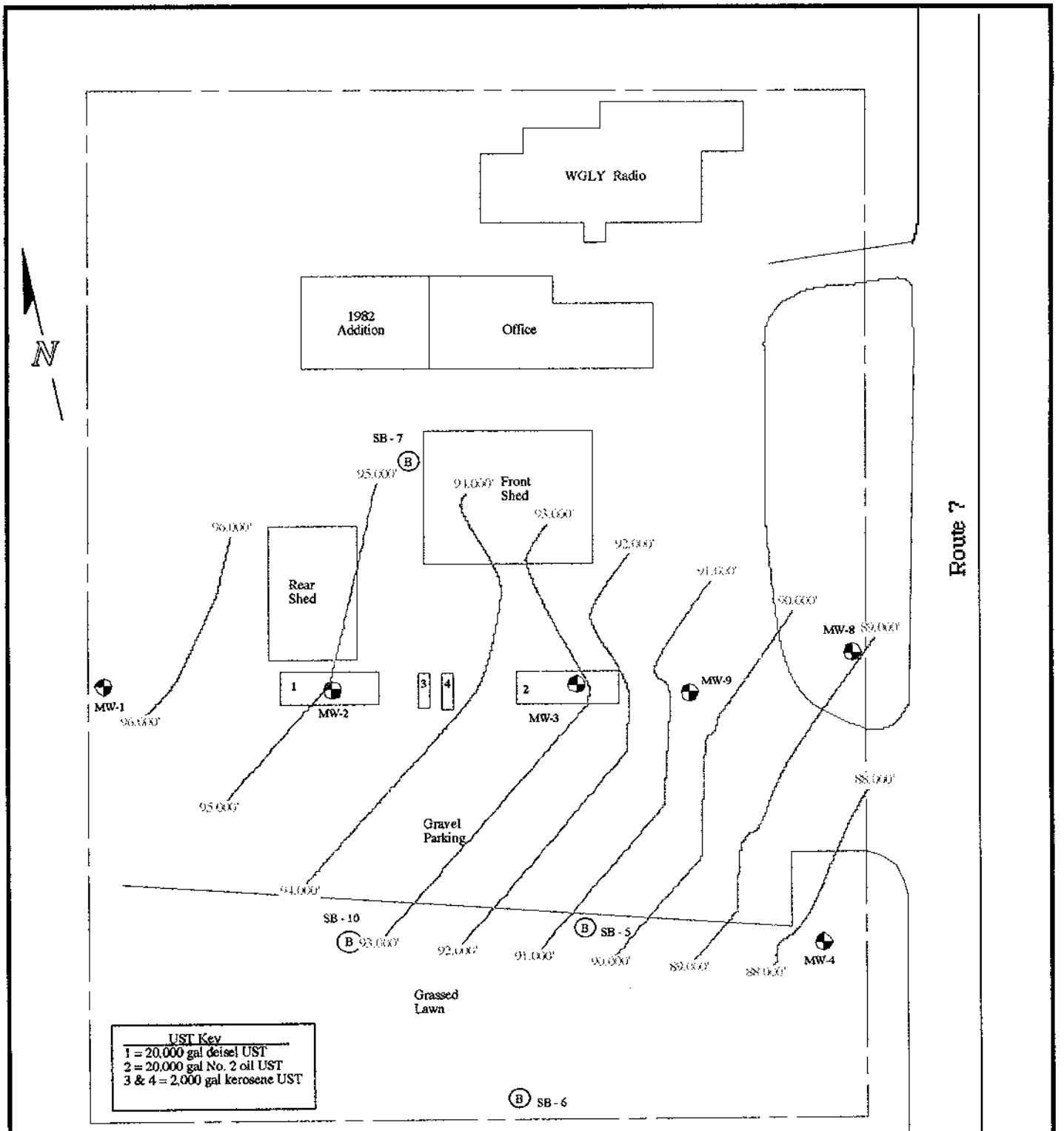
Property Boundary

Agway leased area

Site Map

Project Name: Agway Energy Products Essex Junction, VT		
VTDEC Site No. 93-1476	KDAI Proj. No. 9632-005	Scale: 1" = 40'
Initials: JF	Date: 09/30/98	


WGLY Radio
1982 Addition
Office
N
Route 7
Front Shed
Rear Shed
Gravel Parking
Grassed Lawn
SB - 7
SB - 10
SB - 5
SB - 6
MW-1
MW-2
MW-3
MW-4
MW-8
MW-9
95.000'
94.000'
93.000'
92.000'
91.000'
90.000'
89.000'
88.000'
87.000'
86.000'
85.000'
97.000'
96.000'
UST Key
1 = 20,000 gal diesel UST
2 = 20,000 gal No. 2 oil UST
3 & 4 = 2,000 gal kerosene UST
LEGEND
Monitoring Well
Soil Boring
former UST
Property Boundary
Surface Contour
(relative to MW-1 top of casing designated as 100')
Site Surface Topography
Project Name: Agway Energy Products
Essex Junction, VT
VTDEC Site No. 93-1476
KDAI Proj. No. 9632-005
Scale: 1" = 40'
Initials: JF
Date: 09/30/98
KD ASSOCIATES, INC.



KD ASSOCIATES, INC.

LEGEND

Monitoring Well

Soil Boring (B)

former UST

Property Boundary

Groundwater Contour (relative to MW-1 top of casing designated as 100')

Groundwater Contours

Project Name: Agway Energy Products Essex Junction, VT		
VTDEC Site No. 93-1476	KDAI Proj. No. 9632-005	Scale: 1" = 40'
Initials: JF	Date: 09/30/98	

TABLE 1

Groundwater Elevation Measurements
Agway / McEwing Fuels, Route 15, Essex Junction, VT

VT DEC Site # 93-1476

Sampling Date: 2 September, 1998

Well ID	Elevation T.O. Casing	Depth to Groundwater	Groundwater Elevation
MW-1	100.00	3.56	96.44
MW-2	98.12	3.15	94.97
MW-3	95.39	2.04	93.35
MW-4	90.94	3.22	87.72
MW-8	91.58	2.60	88.98
MW-9	91.79	1.32	90.47

Shallow!

Notes:

All measurements given in decimal feet.
Elevations are relative to an on-site benchmark of 100.00 feet.

APPENDIX 2

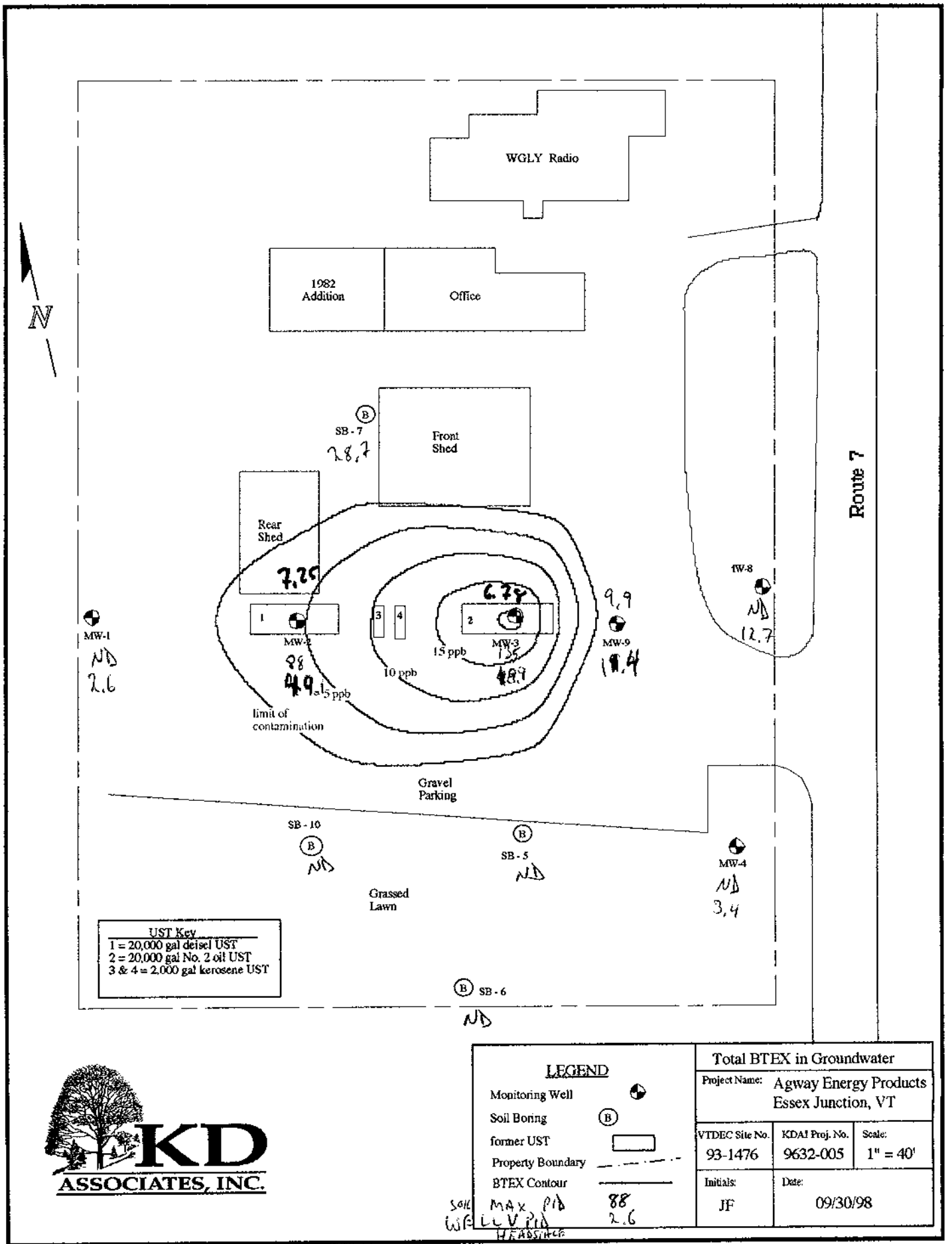
TABLE 2

Agway / McEwing Fuels - Essex Junction
Groundwater Quality Summary Table - EPA Method 602
14 September, 1998

Results in µg/L (ppb)

PARAMETER	MW-1	MW-2	MW-3	MW-4	MW-8	MW-9	Duplicate (MW-9)	Blank
BENZENE	<1	<1	<1	<1	<1	<1	<1	<1
TOLUENE	<1	<1	<1	<1	<1	<1	<1	<1
ETHYLBENZENE	<1	<1	5.8	<1	<1	<1	<1	1
XYLENE	<1	4.1	15.9	<1	<1	<1	<1	<1
MTBE	<10	<10	<10	<10	<10	<10	<10	<10
TOTAL BTEX	<1	4.1	21.4	<1	<1	<1	<1	1
Headspace (ppm)								
via PID	2.6	49.1	18.9	3.4	12.7	11.4		

Notes: <1 = below detection limit
UIP = Unidentified Peaks



SOIL MAX PID 88
WELL PID 2.6
HEADSPACE

 TPH 7.25

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CONTAMINANT SITE INVESTIGATION
AGWAY/McEWING FUELS
Route 15, Essex Junction, Vermont

SOIL BORING LOG

Date: September 7, 1998
Drilling Method: Hand bucket auger
PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

MW-1

SOIL BORING at MW-1

Location: 53 feet west of southwest corner of the former garage in the southwest corner of the property

Sample Interval	Soil Description
Surface - 0.5'	Dry organic soil, roots, and debris
0.5' - 2.5'	Dry, organics (roots and debris) mixed with gravel and loamy soil (fine to medium sand), dark brown
2.5' - 4.0'	Damp, loamy soil with increasing clay content as depth increases, almost no rocks or pebbles, medium brown with increasing grey as clay increases
4.0' - 7.0'	Saturated, clay with some medium and fine granules mixed in, light brown to light grey

Well Construction:

Pipe: 1" sch. 40 PVC, flush-coupled, F480 thread
Screen: 5' section 0.010" factory slot screen
Screen Interval: 2.0' - 6.5' bgs
Sand pack: Native fill
Well Protector: PVC Pipe cover 2.5 feet above ground

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CONTAMINANT SITE INVESTIGATION
AGWAY/McEWING FUELS
Route 15, Essex Junction, Vermont

SOIL BORING LOG

Date: September 7, 1998
Drilling Method: Hand bucket auger
PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

MW-2

SOIL BORING at MW-2
Location: 4 feet due south of the center of the former garage in the southwest corner of the property

Sample Interval	Soil Description	
Surface - 1.0'	Dry packed gravel and sand	
1.0' - 2.0'	Damp, with gravel and fine to medium sand, grey to increasing black	PID = 65 ppm
2.0' - 3.0'	Saturated, Coarse sand (dark grey to black)	PID = 32 ppm
3.0' - 7.5'	Saturated, grey clay with some medium and fine granules mixed in, (blackened) subsamples produced sheen when kneaded by hand	PID = 88 ppm

Well Construction:
Pipe: 1" sch. 40 PVC, flush-coupled, F480 thread
Screen: 5' section 0.010" factory slot screen
Screen Interval: 2.0' - 7.0' bgs
Sand pack: Native fill
Well Protector: PVC pipe cover 2.5 feet above ground

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CONTAMINANT SITE INVESTIGATION
AGWAY/McEWING FUELS
Route 15, Essex Junction, Vermont

SOIL BORING LOG

Date: September 7, 1998
Drilling Method: Hand bucket auger
PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

MW-3

SOIL BORING at MW-3

Location: 30 feet due south of the southeast corner of the former garage in the southeast corner of the property

Sample Interval	Soil Description	
Surface - 1.0'	Dry packed gravel and sand	
1.0' - 2.0'	Damp, with gravel and fine to medium sand, grey to increasing black	PID = 96 ppm
2.0' - 3.0'	Saturated, Coarse sand (dark grey to black)	PID = 135 ppm
3.0' - 7.5'	Saturated, grey clay with some medium and fine granules mixed in, (blackened)	PID = 56 ppm

Well Construction:

Pipe: 1" sch. 40 PVC, flush-coupled, F480 thread
Screen: 0.010" factory slot screen
Screen Interval: 2.0 - 7.0 feet bgs
Sand pack: Native fill
Well Protector: PVC pipe cover approx 1.5 feet above ground

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CONTAMINANT SITE INVESTIGATION
AGWAY/McEWING FUELS
Route 15, Essex Junction, Vermont

SOIL BORING LOG

Date: September 7, 1998
Drilling Method: Hand bucket auger
PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

MW-4

SOIL BORING at MW-4

Location: 75 feet south of Monitoring Well #8, southwest of a large white pine next to the southern driveway

Sample Interval	Soil Description
Surface - 1.0'	Dry, organics (roots and debris) mixed with gravel and loamy soil (fine to medium sand), dark brown
1.0' - 2.0'	Dry, sandy loam (medium to fine particles) with and increasing clay lens with depth, light brown in color
2.0' - 5.0'	Dry, clay (fine partiles), medium brown
5.0' - 7.8'	Dry, hard clay with some brown and tan mottling layers
7.8' - 8.0'	Saturated, clay with coarse sand and pebbles, tan
8.0' - 10.0'	Saturated, heavy clay, tan

Well Construction:

Pipe: 1" sch. 40 PVC, flush-coupled, F480 thread
Screen: 0.010" factory slot screen
Screen Interval: 4.5 - 9.5 feet bgs
Sand pack: Native fill and play sand
Well Protector: PVC pipe cover approx 1.9 feet above ground

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SOIL BORING LOG

Date: September 7, 1998
Drilling Method: Hand bucket auger
PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

SB-5

SOIL BORING at SB-5
Location: 30 feet south of Soil Boring #9, at the edge of the gravel lot approx. 2 feet into grass.

Sample Interval	Soil Description
Surface - 0.75'	Dry, organics (roots and debris) mixed with gravel and loamy soil (fine to medium sand), dark brown
0.75' - 4.0'	Dry, sandy loam (medium to fine particles) with and increasing clay lens with depth, medium brown in color
4.0' - 4.5'	Dry, clay (fine partiles), light brown in color

Well Construction:
NONE: backfilled with auger spoils

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Route 15, Essex Junction, Vermont

SOIL BORING LOG

Date: September 7, 1998
Drilling Method: Hand bucket auger
PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

SB-6

SOIL BORING at SB-6
Location: 75 feet south of Monitoring Well #3, in the grass field within a patch of wetland grasses and sedges

Sample Interval	Soil Description
Surface - 1.0'	Dry, organics (roots and debris) mixed with gravel and loamy soil (fine to medium sand), dark brown
1.0' - 4.0'	Dry, sandy loam (medium to fine particles) with and increasing clay lens with depth, medium brown in color
4.0' - 4.8'	Dry, clay (fine partiles), light brown in color

Well Construction:
NONE: backfilled with auger spoils

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AGWAY/McEWING FUELS
Route 15, Essex Junction, Vermont

SOIL BORING LOG

Date: September 7, 1998
Drilling Method: Hand bucket auger
PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

MW-7

SOIL BORING at MW-7
Location: 24 feet northeast of Rear Shed

Sample Interval	Soil Description	
Surface - 0.33'	Dry packed gravel	
0.33' - 2.0'	Dry, coarse sand with wood and tar paper scraps	PID= 28.7 ppm at 2.0'
2.0' - 5.0'	Wet, tan mottled clay with occasional wood pieces	PID= 5.7 ppm at 5.0'

Well Construction:
NONE: backfilled with auger spoils

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SOIL BORING LOG

Date: September 7, 1998
Drilling Method: Hand bucket auger
PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

MW-8

SOIL BORING at MW-8

Location: 85 feet due east of Monitoring Well #2, Near the mailboxes by the southern driveway

Sample Interval	Soil Description
Surface - 1.0'	Dry, organics (roots and debris) mixed with gravel and loamy soil (fine to medium sand), dark brown
1.0' - 2.0'	Dry, sandy loam (medium to fine particles) with and increasing clay lens with depth, light brown in color
2.0' - 5.0'	Dry, clay (fine partiles), medium brown
5.0' - 8.0'	Dry, hard clay with some brown and tan mottling layers
8.0' - 10.0'	Saturated, heavy clay, tan

Well Construction:

Pipe: 1" sch. 40 PVC, flush-coupled, F480 thread
Screen: 0.010" factory slot screen
Screen Interval: 4.5 - 9.5 feet bgs
Sand pack: Native fill and play sand
Well Protector: PVC pipe cover approx 1.0 feet above ground

K-D Associates, Inc.

1350 Shelburne Road, Suite 209 South Burlington, VT 05403 Office: (802) 862-7490 FAX: (802) 660-2462

CONTAMINANT SITE INVESTIGATION
AGWAY/McEWING FUELS
Route 15, Essex Junction, Vermont

SOIL BORING LOG

Date: September 7, 1998

Drilling Method: Hand bucket auger

PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

SB-9

SOIL BORING at SB-9

Location: 10 feet due south of the southeast corner of the former garage in the southeast corner of the property

Sample Interval	Soil Description
Surface - 2.0"	Asphalt
2.0" - 8.0"	Dry packed gravel and sand
8.0" - 1.5'	Saturated, Silty soil (grey)
1.5' - 4.5'	Saturated, grey clay with some tan mottling

Well Construction:

Pipe: 1" sch. 40 PVC, flush-coupled, F480 thread

Screen: 0.010" factory slot screen

Screen Interval: 0.5 - 4.0 feet bgs

Sand pack: Native fill

Well Protector: PVC pipe cover approx 0.5 feet below ground

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CONTAMINANT SITE INVESTIGATION
AGWAY/McEWING FUELS
Route 15, Essex Junction, Vermont

SOIL BORING LOG

Date: September 7, 1998

Drilling Method: Hand bucket auger

PID: Photovac Microtip MP-100 w/ 10.6 eV lamp, 100 ppm isobutylene calibration standard

SB-10

SOIL BORING at SB-10

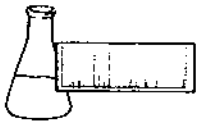
Location: 40 feet due south of Monitoring-Well #2, just past a small ditch surrounded by a cluster of trees

Sample Interval	Soil Description
Surface - 1.0'	Dry, organics (roots and debris) mixed with gravel and loamy soil (fine to medium sand), dark brown
1.0' - 3.0'	Dry, loamy soil (fine to medium sand), Medium to dark brown
3.0' - 3.75'	Moist, Silty soil mixed with increasing amounts of light brown clay
3.75' - 4.5'	Saturated, clay with some medium and fine granules mixed in, light brown to light grey

Well Construction:

NONE: backfilled with auger spoils

APPENDIX 3



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
PROJECT NAME: Essex-Agway
REPORT DATE: September 16, 1998
DATE SAMPLED: September 8, 1998

PROJECT CODE: KDAS1909
REF.#: 126,707 - 126,714

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 126708 and 126712 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

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ENDYNE, INC.

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EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: K-D Associates
PROJECT NAME: Essex-Agway
CLIENT PROJ. #: NI

DATE RECEIVED: September 8, 1998
REPORT DATE: September 16, 1998
PROJECT CODE: KDAS1909

Ref. #:	126,707	126,708	126,709	126,710	126,711
Site:	MW-1	MW-2	MW-3	MW-4	MW-8
Date Sampled:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Time Sampled:	12:58	1:45	1:40	1:05	1:10
Sampler:	J. Fortney	J. Fortney	J. Fortney	J. Fortney	J. Fortney
Date Analyzed:	9/14/98	9/15/98	9/15/98	9/14/98	9/14/98
UIP Count:	0	>10	>10	>10	0
Dil. Factor (%):	100	100	100	100	100
Surr % Rec. (%):	95	97	95	97	94
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)
MTBE	<10	<10	<10	<10	<10
Benzene	<1	<1	<1	<1	<1
Toluene	<1	<1	<1	<1	<1
Ethylbenzene	<1	<1	5.5	<1	<1
Xylenes	<1	4.1	15.9	<1	<1
Chlorobenzene	<1	<1	<1	<1	<1
1,3-Dichlorobenzene	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	<1	<1	<1	<1	<1
1,2-Dichlorobenzene	<1	<1	<1	<1	<1

Ref. #:	126,712	126,713	126,714		
Site:	SB-9	Duplicate SB-9	Field/Trip Blank		
Date Sampled:	9/8/98	9/8/98	9/8/98		
Time Sampled:	1:20	1:20	12:50		
Sampler:	J. Fortney	J. Fortney	J. Fortney		
Date Analyzed:	9/14/98	9/15/98	9/14/98		
UIP Count:	>10	>10	0		
Dil. Factor (%):	100	100	100		
Surr % Rec. (%):	102	96	95		
Parameter	Conc. (ug/L)	Conc. (ug/L)	Conc. (ug/L)		
MTBE	<10	<10	<10		
Benzene	<1	<1	<1		
Toluene	<1	<1	<1		
Ethylbenzene	<1	<1	<1		
Xylenes	<1	<1	<1		
Chlorobenzene	<1	<1	<1		
1,3-Dichlorobenzene	<1	<1	<1		
1,4-Dichlorobenzene	<1	<1	<1		
1,2-Dichlorobenzene	<1	<1	<1		

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

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32 James Brown Drive
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KDAS1910

126,707 — 126,716

CHAIN-OF-CUSTODY RECORD

27761

Project Name: Essex-Agway Site Location:	Reporting Address: Suite 209 1350 Shelburne Rd S. Burlington	Billing Address: Same
Endyne Project Number: KDAS1909	Company: KDAI Contact Name/Phone #: 862-7490	Sampler Name: JULIE FORTNEY Phone #: 862-7490

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
126,707	MW-1	H_2O			9/8 12:58	2	40mL		EPA 602	HCl	NO
126,708	MW-2				9/8 1:45				EPA 602 + TPH 8100 "aging"	HCl	
126,709	MW-3				9/8 1:40				EPA 602 + TPH 8100 "aging"	HCl	
126,710	MW-4				9/8 1:05				EPA 602	HCl	
126,711	MW-8				9/8 1:10					HCl	
126,712	SB-9				9/8 1:20					HCl	
126,713	Duplicate SB-9				9/8 1:20					HCl	
126,714	Field/Trip Blank	↓			9/8 12:50	↓	↓		↓	HCl	↓

Relinquished by: Signature Julie A Fortney	Received by: Signature	Date/Time 9/8/98 2:30
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ___ No X

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_5	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): TPH 8100 "AGING" for MW-2 and MW-3										

ENDYNE, INC.

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REPORT OF LABORATORY ANALYSIS

CLIENT: K-D Associates, Inc.
PROJECT NAME: Essex-Agway
DATE REPORTED: September 25, 1998
DATE SAMPLED: September 8, 1998

PROJECT CODE: KDAS1910
REF. #: 126,715 - 126,716

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody indicated sample preservation with HCl.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy were 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.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: September 25, 1998
CLIENT: K-D Associates, Inc.
PROJECT: Essex-Agway
PROJECT CODE: KDAS1910
COLLECTED BY: Julie Fortney
DATE SAMPLED: September 8, 1998
DATE RECEIVED: September 8, 1998

Reference #	Sample ID	Concentration (mg/L)[1]	Approximate Fuel Age (years)[2]
126,715	MW-2; 1:45	7.25	>20
126,716	MW-3; 1:40	6.78	>20

Notes:

1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 0.4 mg/L.
2 Fuel age is determined by a ratio between the C-17 hydrocarbon and Pristane compounds.

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CHAIN-OF-CUSTODY RECORD

27761

Project Name: Essex - Agway Site Location:	Reporting Address: [illegible] 1350 Shelburne Rd S Burlington	Billing Address: [illegible]
Endyne Project Number: KDAS1910	Company: KDGT Contact Name/Phone #: [illegible]	Sampler Name: [illegible] Phone #: [illegible]

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
	MW-1	H_2O			9/8 12:55	2	40mL		EPA 602	HCl	NO
126,715	MW-2				9/8 1:45				EPA 602 + TPH 8100 "Aging"	HCl	
126,716	MW-3				9/8 1:40				EPA 602 + TPH 8100 "Aging"	HCl	
	MW-4				9/8 1:05				EPA 602	HCl	
	MW-5				9/8 1:10				1	HCl	
	BB-1				9/8 11:20					HCl	
	Duplicate of BB-1				9/8 1:20					HCl	
	Trip Blank	↓			9/8 12:50	↓	↓		↓	HCl	↓

Relinquished by: Signature [illegible]	Received by: Signature [illegible]	Date/Time 9/8/98 2:30
Relinquished by: Signature	Received by: Signature	Date/Time

New York State Project: Yes ____ No X

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_5	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): TPH 8100 "Aging" for MW-2 and MW-3										