

APR 23 1996



April 22, 1996

Mr. Richard Spiese
State of Vermont
Department of Environmental Conservation
Hazardous Materials Management Division
103 South Main Street / West Building
Waterbury, VT 05671-0404

RE: Summary Report on the Investigation at the Former Green Mountain Distributing Corporation, First Street, Rutland, Vermont (VTDEC Site #95-1819)

Dear Mr. Spiese:

Enclosed please find the summary report on the investigation of subsurface petroleum contamination at the former Green Mountain Distributing Corporation property in Rutland, Vermont. If this is not your site, please forward this report to the appropriate Sites Management Section project manager.

Please review this report and call me if you have any questions regarding our findings.

Sincerely,

A handwritten signature in cursive script that reads "Kevin McGraw".

Kevin McGraw
Hydrogeologist

enclosure

APR 23 1996

**REPORT ON THE
INVESTIGATION OF SUBSURFACE
PETROLEUM CONTAMINATION**

at

**FORMER GREEN MOUNTAIN
DISTRIBUTING CORPORATION
FIRST STREET
RUTLAND, VERMONT
(VTDEC SITE #95-1819)**

APRIL 1996



Prepared by:

GRIFFIN INTERNATIONAL, INC.

P.O. Box 943

Williston, Vermont 05495

(802) 865-4288

Griffin Project #: 5954675

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I. INTRODUCTION

This report summarizes the investigation of subsurface petroleum contamination at the former Green Mountain Distributing Corporation property, located at the corner of First Street and James Street in Rutland, Vermont (see Site Location Map and Area Map, Appendix A).

The following investigation has been conducted to define more clearly the degree and extent of petroleum contamination in the vicinity of a former underground storage tank (UST) at the property. Included in the report are the findings from the hollow-stem auger drilling along with the results of subsequent groundwater sampling conducted on the property. This work has been completed for Midway Oil Corporation by Griffin International, Inc. (Griffin) in accordance with a work plan/cost estimate, dated October 2, 1995, which was approved by both Midway Oil and the Vermont Department of Environmental Conservation (VTDEC).

II. HISTORICAL BACKGROUND

On December 18, 1992, a 3,000-gallon diesel underground storage tank was removed from the former Green Mountain Distributing Corporation property. Although the company conducting the UST removal prepared a brief report, the report was deemed insufficient by the VTDEC.

In May of 1995, Griffin conducted an investigation at the site to fulfill the UST closure and reporting requirements of the VTDEC. This investigation included the drilling of several soil borings in the vicinity of the former pump island, piping and the UST, using a hand auger. This UST system (including the tank, product piping and pump) was located on the north side of the on-site building (see Site Map, Appendix A). Soil samples from each boring were screened for volatile organic compounds (VOCs) using a photo-ionization device (PID). Petroleum contamination was observed in the soils from these borings, however, the hand auger could not be advanced to the water table due to subsurface gravel and cobbles. Griffin submitted a "tank closure" report to the VTDEC, dated June 12, 1995, which included a State of Vermont UST Permanent Closure Form and Site Diagram, a Site Location Map, and photographs.

In response to the soil contamination detected during the above investigation, the VTDEC requested additional work in order to determine the potential for sensitive receptors to be impacted by the contamination. The following report describes the results of this additional requested investigation.

III. SITE DESCRIPTION

The site is located in the southwestern portion of the City of Rutland. Otter Creek is located approximately 1,800 feet west of the site and Moon Brook is located approximately 1,800 feet south of the site. Local terrain is relatively level and groundwater flow beneath the site is likely to the southwest toward Otter Creek and Moon Brook. The on-site, warehouse-style building is constructed on a cement slab foundation. The majority of the property surrounding the building is lawn. A railroad track, located on the back (south) side of the building, was apparently used for the delivery of goods to and from the building.

The area surrounding the site is primarily residential, however, there are several businesses in the area as well. The area, including the on-site facility, is served by the municipal water and sewer systems. According to state records, it appears that the nearest private water supply well is located approximately 1/2 mile from the site.

After removal of the 3,000-gallon diesel tank, no additional USTs are reported to exist at the site.

The Surficial Geologic Map of Vermont maps the surrounding area as silt, silty clay and clay. Actual subsurface materials consist primarily of fine sand from the surface to five feet below grade and silt and clay below five feet.

IV. SUBSURFACE INVESTIGATION

On March 14, 1996, three monitoring wells were installed using a hollow-stem auger drill rig. The monitoring wells, designated MW-1 through MW-3, were installed to help define the degree and extent of petroleum contamination in the vicinity of the former on-site UST system. MW-1 and MW-2 were installed in the expected downgradient direction from the former tank pit. MW-3 was installed between the former UST and pump in the vicinity of where product piping was formerly located. The locations of the wells are shown on the Site Map in Appendix A.

Soil samples were obtained in each boring at five-foot intervals using a split-spoon sampler. These soil samples were screened for VOCs using an HNU (Model PI-101) PID. Contaminant concentrations and soil characteristics were recorded in detailed boring logs by the supervising Griffin hydrogeologist.

In the boring for MW-1, dark brown silt and fine sand was observed from the ground surface to 5 feet below grade. The 5'-7' split-spoon sample consisted of olive brown silt with little clay. From 10'-12' below grade, olive brown clay with little silt was observed. Groundwater was encountered at approximately 4 feet below grade. Petroleum odors were not observed in any of the soils from this boring.

Soils retrieved from the boring for MW-2 were very similar to the soils observed in the boring for MW-1. Fine sand, silt and clay were observed from 1'-4', 5'-7' and 10'-12' below grade, respectively. Groundwater was encountered at a depth of approximately 6 feet. Petroleum odors were not observed in any of the soils from this boring.

In the boring for MW-3, fine sand was again predominant from the surface to five feet below grade. Silt and fine sand was observed in the 5'-7' split-spoon sample, and clay with little silt was observed in the 10'-12' soil sample. Groundwater was encountered at approximately 6 feet below grade. A moderate petroleum odor was observed in the soils obtained from 1 to 7 feet below grade in this boring. PID readings of 196 parts per million (ppm), 172 ppm and 130 ppm were recorded for the 1'-2', 2'-4', and 5'-7' samples intervals, respectively. No odor was observed in the 10'-12' soil sample. A PID reading of 0.2 ppm was measured in this sample.

The monitoring wells were constructed with two-inch diameter, Schedule 40 PVC riser and 0.010" slotted screen. The screened portion of all three monitoring wells is from 3 to 13 feet below grade. A silica sand pack was placed around the screened portion of each well and a bentonite seal was placed in the annulus immediately above the sand pack. To complete the construction of each well, a road box was set in concrete at grade level. In addition, locking well caps were placed on the monitoring wells. The boring logs and well construction details for these wells are included in Appendix B.

V. WATER LEVELS AND WATER QUALITY

A. Water Table Elevations

Water table elevation measurements were collected from MW-1 through MW-3 prior to sampling on March 20, 1996. In addition, the monitoring wells were surveyed in azimuth and elevation relative to the top-of-casing of MW-2 which has been assigned an arbitrary elevation of 100.00 feet. Liquid level monitoring data are presented in Appendix C.

Water table elevations have been plotted and contoured to illustrate the estimated gradient and direction of groundwater flow beneath the site (see Groundwater Contour Map, Appendix A). According to these data, it appears that groundwater is flowing to the southwest at a hydraulic gradient of 0.008.

B. Water Quality

Griffin collected groundwater samples at the site from all three monitoring wells. The samples were analyzed for petroleum compounds by EPA Method 8020. The analytical results have been plotted to show the distribution of dissolved contamination across the site (see Contaminant Concentration Map, Appendix A).

Low levels of benzene, toluene, ethylbenzene and xylenes (BTEX) were detected in the sample from MW-3. The Vermont drinking water standards for these four compounds were not exceeded in this sample. A trace of toluene was detected in the sample from MW-1. Dissolved petroleum compounds were not detected in the sample collected from MW-2. A groundwater quality summary for this sampling event is presented in tabular form in Appendix D.

The trip blank, equipment blank and duplicate sample results indicate that proper quality assurance and quality control were maintained during the sampling and analysis. The laboratory analytical report is also included in Appendix D.

VI. RECEPTOR RISK ASSESSMENT

As stated previously, the area in the vicinity of the former Green Mountain Distributing property is served by the municipal water system. The public system obtains its water from supply wells located greater than 1.5 miles from the site. According to state records, the nearest private water supply well in the area appears to be approximately 1/2-mile away from the site. Relative to the site, this supply well is located on the opposite side of Moon Brook. Based on the direction of groundwater flow and the level of contamination at the site, no public or private water supplies appear to be at risk.

The on-site building does not have a basement for accumulation of petroleum vapors. The nearest basement is at a residence located approximately 150 feet upgradient from the site. Based on the level of contamination in the source area and the nature of the soils at the site (predominantly silt and clay below 5 feet), it is unlikely that petroleum vapors from the former UST system will impact any of the basements in the area.

The nearest surface waters in the area are Moon Brook and Otter Creek which are both located approximately 1,800 feet away from the site. Based on the lack of contamination detected in monitoring wells MW-1 and MW-2, the risk to these surface waters is deemed to be negligible at this time. The relatively flat hydraulic gradient and low permeability soils in the aquifer suggest that Otter Creek and Moon Brook will not likely be impacted by the petroleum contamination detected at the former Green Mountain Distributing property.

VII. CONCLUSIONS

Based on the investigation at this site, Griffin has reached the following conclusions:

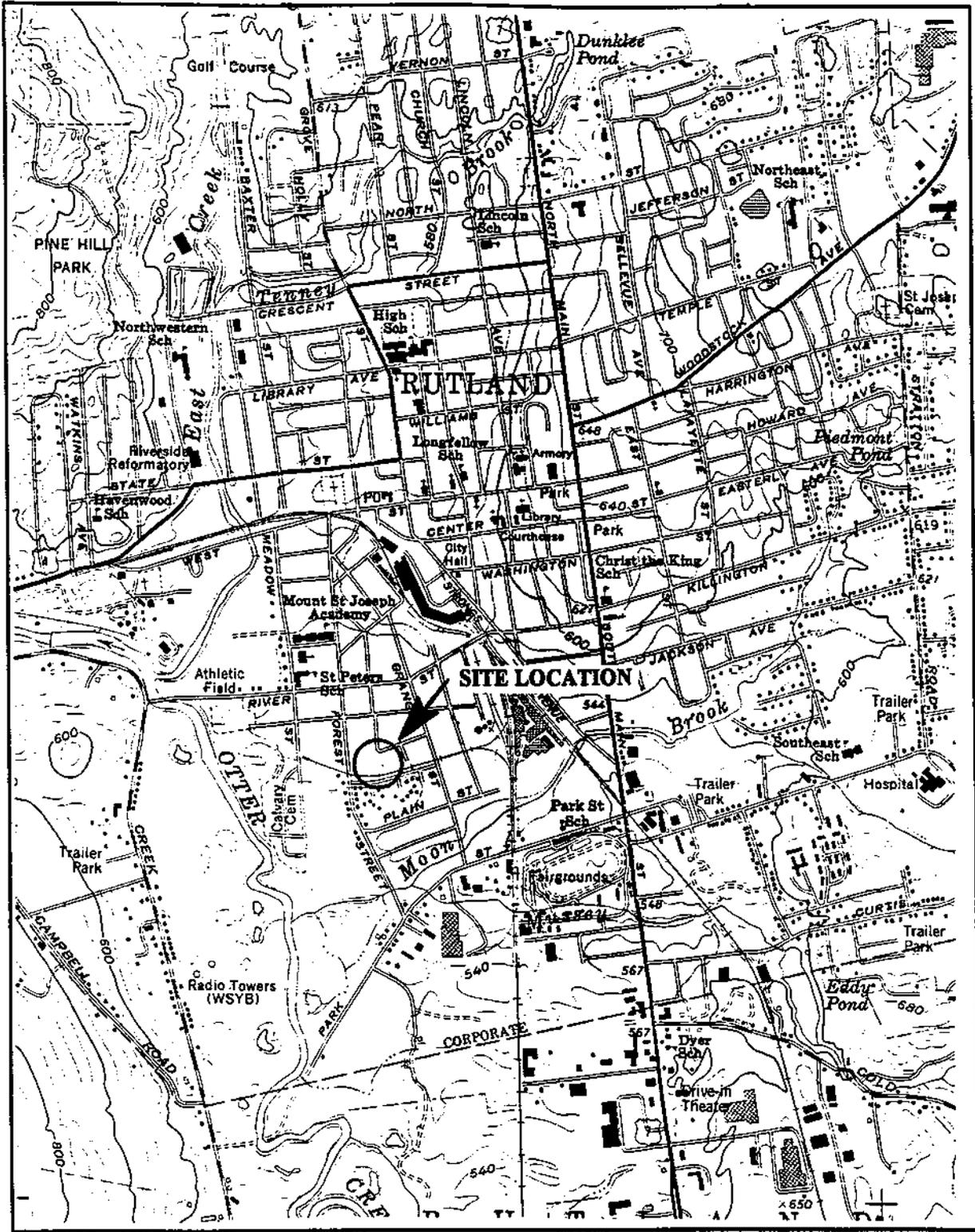
1. Adsorbed and dissolved petroleum contamination exists in the vicinity of the former underground storage tank at the former Green Mountain Distributing property. However, adsorbed contamination was not observed during the drilling operations downgradient from the source area, and only a trace level of dissolved petroleum

contamination was detected in MW-1. This suggests that off-site migration of dissolved petroleum hydrocarbons is not likely occurring, and that the downgradient extent of contamination has been sufficiently determined.

2. The detected concentrations of dissolved BTEX were below the Vermont Groundwater Enforcement Standards for these compounds in all three monitoring wells.
3. Based on the water table elevation data collected in March, groundwater beneath the site appears to be flowing southwest at a hydraulic gradient of 0.008. The relatively flat hydraulic gradient and low permeability silts and clays of the overburden aquifer beneath the site indicate that dissolved petroleum contamination in the groundwater will likely migrate very slowly away from the source area. The natural processes of dilution, dispersion, and biodegradation will likely remediate the site over time.
4. The risk assessment for this site has determined that there is likely little, if any, threat to any of the identified potential receptors in the area.

VIII. RECOMMENDATIONS

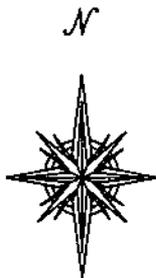
Based on the above conclusions, Griffin does not recommend any further action at this site.



SITE LOCATION MAP

Former Green Mountain Distributing Corporation, First Street, Rutland, Vermont

SOURCE: U.S.G.S. - RUTLAND, VERMONT (Photorevised 1988),
SCALE 1:24,000



RESIDENTIAL AREA

RESIDENCE

RESIDENCE

RESIDENCE

RESIDENCE

RESIDENTIAL AREA

RESIDENCE

FIRST STREET

LAWN

PAVED AREA

LAWN

RESIDENCE

RESIDENCE

SECOND STREET

MW1

MW2

MW3

FORMER PUMP LOCATION

FORMER GREEN MOUNTAIN
DISTRIBUTING CORP.

LAWN

FOREST STREET

RESIDENTIAL AREA

RAILROAD TRACKS

FOREST PARK DRIVE

RESIDENTIAL AREA

LEGEND



MONITORING WELL



FORMER LOCATION OF
UNDERGROUND STORAGE TANK



POWER POLE

JOB #: 5954675



**FORMER GREEN MOUNTAIN
DISTRIBUTING CORP.
RUTLAND, VERMONT**

AREA MAP

DATE: 4/9/96

DWG.#: 2

SCALE: NONE

DRN.:SB

APP.:KM



RESIDENTIAL AREA

JAMES STREET

RESIDENTIAL AREA

RESIDENCE

FIRST STREET

LAWN

PAVED AREA

LAWN

MW1

MW2

MW3

FORMER PUMP LOCATION

FORMER GREEN MOUNTAIN
DISTRIBUTING CORP.

LAWN

RAILROAD TRACKS

LEGEND

-  MW2 MONITORING WELL
-  FORMER LOCATION OF UNDERGROUND STORAGE TANK
-  POWER POLE

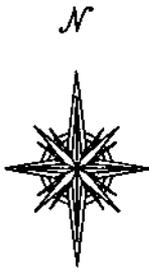
JOB #: 5954675



FORMER GREEN MOUNTAIN
DISTRIBUTING CORP.
RUTLAND, VERMONT

SITE MAP

DATE: 4/9/96	DWG.#: 3	SCALE: 1" = 60'	DRN.:SB	APP.:KM
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RESIDENTIAL AREA

RESIDENTIAL AREA

RESIDENCE

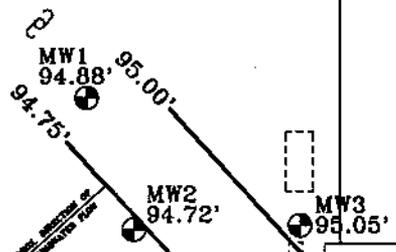
JAMES STREET

FIRST STREET

LAWN

PAVED AREA

LAWN



FORMER PUMP LOCATION

FORMER GREEN MOUNTAIN
DISTRIBUTING CORP.

LAWN

RAILROAD TRACKS

LEGEND

- 94.72' MW2 MONITORING WELL AND WATER TABLE ELEVATION IN FEET
- 94.75' GROUNDWATER CONTOUR IN FEET (DASHED WHERE INFERRED)
- FORMER LOCATION OF UNDERGROUND STORAGE TANK
- ⊕ POWER POLE

JOB #: 5954675
MEASUREMENT DATE: 3/20/96



**FORMER GREEN MOUNTAIN
DISTRIBUTING CORP.
RUTLAND, VERMONT**

GROUNDWATER CONTOUR MAP

DATE: 4/9/96 DWG.#: 4 SCALE: 1"=60' DRN.:SB APP.:KM



RESIDENTIAL AREA

RESIDENTIAL AREA

RESIDENCE

JAMES STREET

FIRST STREET

LAWN

PAVED AREA

LAWN

MW1
TBQ

MW2
ND

MW3
0.052

FORMER PUMP LOCATION

FORMER GREEN MOUNTAIN
DISTRIBUTING CORP.

LAWN

RAILROAD TRACKS

LEGEND

- ⊕ 0.052 MW3 MONITORING WELL AND TOTAL BTEX AND MTBE CONCENTRATION (ppm)
- ND NONE DETECTED
- TBQ TRACE BELOW QUANTITATION LIMIT
- FORMER LOCATION OF UNDERGROUND STORAGE TANK
- ⊕ POWER POLE

JOB #: 5954675
SAMPLE DATE: 3/20/96



**FORMER GREEN MOUNTAIN
DISTRIBUTING CORP.
RUTLAND, VERMONT**

CONTAMINANT CONCENTRATION MAP

DATE: 4/9/96	DWG.#: 5	SCALE: 1"=60'	DRN.:SB	APP.:KM
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PROJECT FORMER GREEN MOUNTAIN DISTRIBUTING CORP.

LOCATION RUTLAND, VERMONT

DATE DRILLED 3/14/96 TOTAL DEPTH OF HOLE 13'

DIAMETER 4.25"

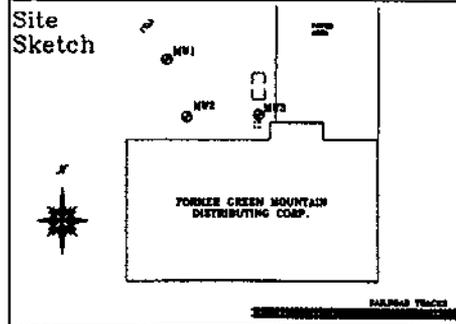
SCREEN DIA. 2" LENGTH 10' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 2.5' TYPE sch 40 pvc

DRILLING CO. T&K DRILLING METHOD HSA

DRILLER A. TOMMILA LOG BY K. McGRAW

WELL NUMBER MW1



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0	ROAD BOX	LOCKING WELL CAP			0
1	CONCRETE				1
2	SAND PACK		1'-2' 0 ppm	Dark brown, damp, SILT and fine SAND, trace white gravel, no odor.	2
3	BENTONITE				3
4	WELL RISER			4.0' WATER TABLE	4
5					5
6	SAND PACK		5'-7'- 2/3/3/3 0 ppm	Olive brown, saturated, SILT, little clay, no odor.	6
7					7
8					8
9	WELL SCREEN				9
10					10
11	BOTTOM CAP		10'-12'- 1/1/1/1 0 ppm	Olive brown, saturated, CLAY, little silt, highly plastic, no odor.	11
12					12
13	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 13' END OF EXPLORATION AT 13'	13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT FORMER GREEN MOUNTAIN DISTRIBUTING CORP.

LOCATION RUTLAND, VERMONT

DATE DRILLED 3/14/96 TOTAL DEPTH OF HOLE 13'

DIAMETER 4.25"

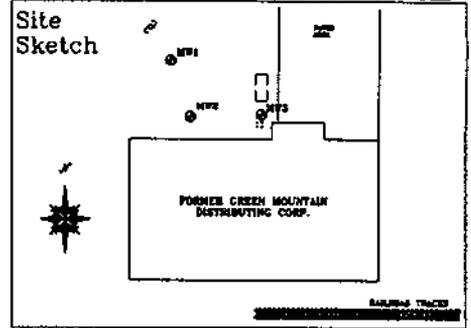
SCREEN DIA. 2" LENGTH 10' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 2.5' TYPE sch 40 pvc

DRILLING CO. T&K DRILLING METHOD HSA

DRILLER A. TOMMILA LOG BY K. McGRAW

WELL NUMBER MW2



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0	ROAD BOX				0
0	LOCKING WELL CAP				0
1	CONCRETE				1
1-2'	SAND PACK		0 ppm	Brown, dry, fine SAND, little silt, trace gravel, no odor.	1
2	BENTONITE				2
2-4'	WELL RISER		3/3/3/5 0 ppm	Dark gray, dry, silty fine SAND, no petroleum odor.	2
3					3
4					4
5					5
5-7'	SAND PACK		2/3/3/4 0 ppm	6.0' WATER TABLE	5
6					6
7	WELL SCREEN			Brown, saturated, SILT, some clay, trace fine sand, no odor.	7
8					8
9					9
10					10
10-12'	BOTTOM CAP		1/0/1/1 0 ppm	Grayish brown, saturated, CLAY, little silt, highly plastic, no odor.	10
11					11
12					12
13	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 13' END OF EXPLORATION AT 13'	13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

PROJECT FORMER GREEN MOUNTAIN DISTRIBUTING CORP.

LOCATION RUTLAND, VERMONT

DATE DRILLED 3/14/96 TOTAL DEPTH OF HOLE 13'

DIAMETER 4.25"

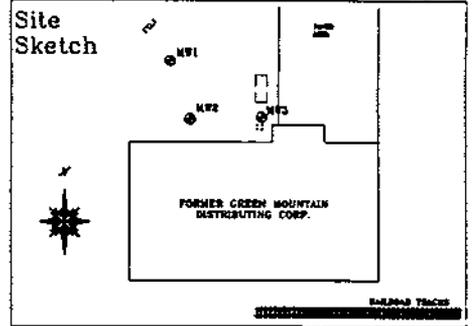
SCREEN DIA. 2" LENGTH 10' SLOT SIZE 0.010"

CASING DIA. 2" LENGTH 2.5' TYPE sch 40 pvc

DRILLING CO. T&K DRILLING METHOD HSA

DRILLER A. TOMMILA LOG BY K. McGRAW

WELL NUMBER MW3



GRIFFIN INTERNATIONAL, INC

DEPTH IN FEET	WELL CONSTRUCTION	NOTES	BLOWS PER 6" OF SPOON & PID READINGS	DESCRIPTION/SOIL CLASSIFICATION (COLOR, TEXTURE, STRUCTURES)	DEPTH IN FEET
0	ROAD BOX LOCKING WELL CAP				0
1	CONCRETE		1'-2' 196 ppm	Grayish brown, dry, fine SAND, trace silt and gravel, moderate odor.	1
2	SAND PACK BENTONITE		2'-4'- 46/20/7/14 172 ppm	Gray, dry, fine SAND, little gravel, trace silt, moderate odor.	2
3	WELL RISER				3
4					4
5					5
6	SAND PACK		5'-7'- 4/6/7/6 130 ppm	6.0' WATER TABLE	6
7	WELL SCREEN			Olive brown, saturated, SILT and fine SAND, moderate odor.	7
8					8
9					9
10					10
11	BOTTOM CAP		10'-12'- 1/0/1/1 0.2 ppm	Olive brown, saturated CLAY, little silt, highly plastic, no odor.	11
12	UNDISTURBED NATIVE SOIL				12
13				BASE OF WELL AT 13' END OF EXPLORATION AT 13'	13
14					14
15					15
16					16
17					17
18					18
19					19
20					20
21					21
22					22
23					23
24					24
25					25

**Liquid Level Monitoring Data
Former Green Mountain Distributing Corp.
Rutland, Vermont**

**Monitoring Date:
3/20/96**

Well I.D.	Well Depth	Top of Casing Elevation	Depth to Product	Depth to Water	Product Thickness	Specific Gravity of Product	Hydro Equivalent	Corrected Depth to Water	Corrected Water Table Elevation
MW-1	13.00	99.39	-	4.51	-	-	-	-	94.88
MW-2	13.00	100.00	-	5.28	-	-	-	-	94.72
MW-3	13.00	99.50	-	4.45	-	-	-	-	95.05

All values reported in feet.

Top-of-casing elevations measured in feet relative to MW-2 set at 100.00'.

**Groundwater Quality Summary
Former Green Mountain Distributing Corp.
Rutland, Vermont**

3/20/96

PARAMETER	MW-1	MW-2	MW-3	Vermont Drinking Water Standards
Benzene	ND	ND	1.3	5.0*
Chlorobenzene	ND	ND	ND	100*
1,2-DCB	ND	ND	ND	600*
1,3-DCB	ND	ND	ND	600**
1,4-DCB	ND	ND	ND	75*
Ethylbenzene	ND	ND	6.3	700*
Toluene	TBQ	ND	6.0	1,000*
Xylenes	ND	ND	38.1	10,000*
Total BTEX	TBQ	ND	51.7	-
MTBE	ND	ND	ND	40**
BTEX + MTBE	TBQ	ND	51.7	-

All Values Reported in ug/L (ppb)

* - E.P.A. Maximum Contaminant Level

** - VT Health Advisory Level

TBQ - Trace Below Quantitation Limit

ND - None Detected



Laboratory Services

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Griffin International
PROJECT NAME: Former Green Mtn. Dist.
REPORT DATE: April 1, 1996
DATE SAMPLED: March 20, 1996

PROJECT CODE: GIGM1183
REF.#: 86,879 - 86,884

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.

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,

A handwritten signature in black ink, appearing to read "H. Locker", written over a horizontal line.

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

RECEIVED APR - 2 1996



Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8020--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Former Green Mtn. Dist.
REPORT DATE: April 1, 1996
DATE SAMPLED: March 20, 1996
DATE RECEIVED: March 21, 1996
DATE ANALYZED: March 29, 1996

PROJECT CODE: GIGM1183
REF.#: 86,879
STATION: Trip Blank
TIME SAMPLED: 7:40
SAMPLER: Kevin McGraw

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 94%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected

RECEIVED APR - 2 1996



Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8020--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Former Green Mtn. Dist.
REPORT DATE: April 1, 1996
DATE SAMPLED: March 20, 1996
DATE RECEIVED: March 21, 1996
DATE ANALYZED: March 29, 1996

PROJECT CODE: GIGM1183
REF.#: 86,880
STATION: MW-1
TIME SAMPLED: 10:40
SAMPLER: Kevin McGraw

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	TBQ ²
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 91%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

- 1 None detected
- 2 Trace below quantitation limit



Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8020--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Former Green Mtn. Dist.
REPORT DATE: April 1, 1996
DATE SAMPLED: March 20, 1996
DATE RECEIVED: March 21, 1996
DATE ANALYZED: March 27, 1996

PROJECT CODE: GIGM1183
REF.#: 86,881
STATION: MW-2
TIME SAMPLED: 11:10
SAMPLER: Kevin McGraw

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 102%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8020--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Former Green Mtn. Dist.
REPORT DATE: April 1, 1996
DATE SAMPLED: March 20, 1996
DATE RECEIVED: March 21, 1996
DATE ANALYZED: March 26, 1996

PROJECT CODE: GIGM1183
REF.#: 86,882
STATION: MW-3
TIME SAMPLED: 11:40
SAMPLER: Kevin McGraw

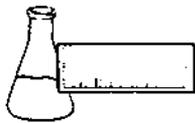
<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	1.3
Chlorobenzene	1	ND ¹
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	6.3
Toluene	1	6.0
Xylenes	1	38.1
MTBE	10	ND

Bromobenzene Surrogate Recovery: 98%

NUMBER OF UNIDENTIFIED PEAKS FOUND: >10

NOTES:

1 None detected



ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8020--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Former Green Mtn. Dist.
REPORT DATE: April 1, 1996
DATE SAMPLED: March 20, 1996
DATE RECEIVED: March 21, 1996
DATE ANALYZED: March 26, 1996

PROJECT CODE: GIGM1183
REF.#: 86,883
STATION: Duplicate
TIME SAMPLED: 11:40
SAMPLER: Kevin McGraw

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	1.2
Chlorobenzene	1	ND ¹
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	6.0
Toluene	1	5.8
Xylenes	1	35.9
MTBE	10	ND

Bromobenzene Surrogate Recovery: 95%

NUMBER OF UNIDENTIFIED PEAKS FOUND: > 10

NOTES:

1 None detected



Laboratory Services

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Williston, Vermont 05495
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FAX 879-7103

LABORATORY REPORT

EPA METHOD 8020--PURGEABLE AROMATICS

CLIENT: Griffin International
PROJECT NAME: Former Green Mtn. Dist.
REPORT DATE: April 1, 1996
DATE SAMPLED: March 20, 1996
DATE RECEIVED: March 21, 1996
DATE ANALYZED: March 27, 1996

PROJECT CODE: GIGM1183
REF.#: 86,884
STATION: Equip. Blank
TIME SAMPLED: 11:50
SAMPLER: Kevin McGraw

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND ¹
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 101%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

1 None detected



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

CHAIN-OF-CUSTODY RECORD

Job # 5954675

18307

Project Name: Former Green Mtn. Dist. Site Location: Rutland, VT	Reporting Address: Griffin Int'l	Billing Address: Griffin Int'l
Endyne Project Number: GIGM1183	Company: Griffin International Contact Name/Phone #: Kevin McGraw/865-4288	Sampler Name: Kevin McGraw Phone #: 802-865-4288

Lab #	Sample Location	Matrix	G R A B	C O M P	Date/Time	Sample Containers		Field Results/Remarks	Analysis Required	Sample Preservation	Rush
						No.	Type/Size				
86,879	Trip Blank	H ₂ O	✓		3/20/96 7:40	2	40mL		8020	HCl	
86,880	MW-1	↓	✓		10:40	↓	↓		↓	↓	
86,881	MW-2	↓	✓		11:10	↓	↓		↓	↓	
86,882	MW-3	↓	✓		11:40	↓	↓		↓	↓	
86,883	Duplicate	↓	✓		11:40	↓	↓		↓	↓	
86,884	Equip. Blank	↓	✓		11:50	↓	↓		↓	↓	

Relinquished by: Signature <i>Kevin D. S. McGraw</i>	Received by: Signature <i>Bill Ward</i>	Date/Time 3-21-96 9:45
Relinquished by: Signature <i>Bill Ward</i>	Received by: Signature <i>Rosemarie Bensen</i>	Date/Time 3/21/96 10:00 AM

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 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):										

RECEIVED APR - 2 1996