



May 14 10 16 AM '97

WASTE MANAGEMENT
DIVISION

May 13, 1997

Mr. Andrew Shively
VT Department of Environmental Conservation
Waste Management Division
103 South Main St./ West Bldg.
Waterbury, VT 05671-0404

RE: Subsurface Investigation, Shoreham Country Store, Shoreham, VT (VTDEC #96-2105)

Dear Andrew:

Enclosed please find the May 1997 *Report on the Site Investigation of Suspected Subsurface Petroleum Contamination* for the Shoreham Country Store in Shoreham, Vermont. Ms. Cleo Alter requested that a copy be forwarded to you for review. Please do not hesitate to call, if you have any questions or comments.

Sincerely,

Timothy J. Kelly, PG
Geologist

Encl.

cc: Cleo Alter, Shoreham Inn and Country Store (w/o encl.)
GI #4974999

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

AT

**Shoreham Country Store
Shoreham, VT**

VTDEC Site #96-2105
Griffin Proj. #4974999

May 1997

Prepared for

Ms. Cleo Alter
Shoreham Country Inn and Store
PO Box 182
Shoreham, Vermont 05770

Prepared by



P.O. Box 943/ 19 Commerce St.
Williston, Vermont 05495
(802) 865-4288

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I. INTRODUCTION

This report summarizes the Site Investigation performed at Shoreham Country Store in Shoreham, Vermont, (see Site Location Map in Appendix A). Site investigation activities were undertaken in response to the detection of subsurface contamination during the closure of one 500-gallon gasoline underground storage tank (UST) and one 1,050-gallon UST on November 18, 1996. Results of the following investigative tasks performed by Griffin International, Inc. (Griffin), are presented:

- ◇ monitoring well installation;
- ◇ site survey;
- ◇ determination of groundwater flow direction and gradient;
- ◇ groundwater sampling and analyses;
- ◇ sensitive receptor survey.

This work was performed in accordance with the February 13, 1997, *Work Plan and Cost Estimate for Subsurface Investigation of Petroleum Contamination* for the site prepared by Griffin. The work plan was submitted under the Site Expressway Notification process to Mr. Andrew Shively of the Vermont Department of Environmental Conservation (VTDEC) on April 23, 1997.

II. SITE BACKGROUND

A. Site Setting

The Shoreham Country Store is located on the north side of Route 74 in a residential/commercial area of Shoreham, Vermont. Topography at the site is flat to gently rolling. The property is bounded to the north by meadows and wooded land, and on the south by an access way and Route 74. To the east and west of the site are residential/commercial properties. The Cedar Swamp is approximately 2,200 feet northwest of the site. The swamp drains into a tributary that flows into the Fair River approximately four miles northeast of the swamp.

No supply well exists on the Shoreham Country Store property. The area is serviced by municipal water and sanitary sewer systems. Stormwater drains naturally off the property along the topographic slope. The site is underlain by glacial till according to the *Surficial Geologic Map of Vermont* (Ref. 1). The bedrock underlying the site is mapped as the Danby Formation. The Danby Formation consists of interbedded white quartzite and dolomite beds (Ref. 2). No bedrock exposures were observed on the Shoreham Country Store property or adjacent properties. Dolomite was observed in one of the borings completed as part of the investigation.

B. Site History

One 500-gallon UST and one 1050-gallon gasoline UST of single-walled steel construction were abandoned on November 18, 1996. A UST Closure report, dated November 20, 1996, was forwarded to the VTDEC UST Program. Concentrations of volatile organic compounds (VOCs) ranging from 0 to 360 parts per million (ppm) were detected with an HNu™ portable photoionization detector (PID) in soils collected from under the western UST (see Site Sketch Map) at a depth of 6 feet. Groundwater was not observed during the tank removal. The tanks were in poor condition with rust, holes, and pitting. One, 2,000-gallon UST on the west side of the Shoreham Country Store is currently being used to store fuel oil for the store.

The effort to define the extent of contamination during the UST closures was limited due to the proximity of the excavation to the building and the roadway. Therefore, soils were backfilled into the excavation. No replacement tanks were installed. The western UST was abandoned in place because it was situated partially under the Shoreham Country Store building. The eastern UST was removed and scrapped.

III. INVESTIGATIVE PROCEDURES

To further define the extent of subsurface petroleum contamination in the area of the former gasoline USTs, the following investigative tasks were undertaken: installation of monitoring wells, site survey; determination of groundwater flow direction and gradient; groundwater sampling; sample analyses for petroleum-related constituents; and an evaluation of potentially sensitive receptors.

A. Monitoring Well Installation

Four monitoring wells were installed on April 18, 1997, by Adams Engineering of Underhill, Vermont, under the direct supervision of a Griffin geologist. MW1 was installed south of the store. MW2 was installed immediately east of the former eastern UST pit. MW3 was installed in the presumed downgradient direction from the abandoned western UST. MW4 was installed in an area presumed to be downgradient near the northwest corner of the store building. Monitoring well locations are indicated on the Site Map in Appendix A.

All of the wells were installed using a vibratory drill rig. Continuous soil sampling was conducted using a polyethylene lined, 2-3/8-inch inside diameter coring tool. Soils were logged by the supervising geologist and screened for VOCs using an HNu™ systems Model HW-101 PID. Soils were screened using the Griffin Jar/Polyethylene Bag Headspace Screening Protocol, which conforms to state and industry standards. Monitoring well logs are included in Appendix B. Wells were completed with 1.5-inch diameter Schedule 40 PVC riser and factory-slotted screened intervals (0.010-inch). A silica sand pack was installed in the annular space

surrounding the screened interval. The sand pack was brought to a level approximately one-half foot above the top of the screened interval. A bentonite seal was placed above the sand pack in each well. Each of the four wells was completed with a flush-mounted road box and secured with a locking compression cap.

The borehole for MW1 was completed to a depth of approximately 7 feet below grade. Groundwater was encountered at approximately three feet below the ground surface during drilling. The soils encountered in the borehole consisted of dark gray, grading to yellowish brown, moist, silty and sandy clay with a trace of gravel from 1 foot to a depth of 5.5 feet. The soils from 5.5 feet to 7.0 feet were yellowish brown sand with some silt and a trace of fine gravel. The well was completed with a 5-foot screened interval from 2 to 7 feet below grade. No VOCs were detected in soil samples collected from this borehole. No petroleum odors, petroleum staining, or other evidence of petroleum contamination were detected in soils from this borehole.

The soils encountered in MW2 consisted of grayish brown gravel fill with silt and sand from grade to a depth of 2.5 feet below grade. Medium to yellowish brown clay with a little silt and a trace of cobbles were encountered from approximately 2.5 to 5.2 feet below grade. Soils from 5.2 to 5.9 feet consisted of wet, olive-brown sand with a little fine gravel and a little silt. Groundwater was encountered at an approximate depth of five feet below ground surface. The VOCs detected in the headspace of soil samples collected from this borehole ranged from 0 to 26 ppm. MW2 was completed with a four-foot screened interval from approximately 1.9 feet to 5.9 feet below grade.

The borehole for MW3 was completed to a depth of approximately 5.6 feet below grade. Groundwater was encountered at approximately four feet below the ground surface during drilling. The soils encountered in the borehole consisted of grayish brown sand with some silt and angular gravel from grade to 1.5 feet below grade. The soils from 1.5 feet to 4.7 feet consisted of reddish to grayish brown clay with some silt and local sandy interbeds. From 4.7 feet to 5.6 feet the soils consisted of olive and gray sand and gravel with a little silt. The well was completed with a four-foot screened interval from 1.6 to 5.6 feet below grade. The VOCs detected in the headspace of soil samples collected from this borehole ranged from 1 to 97 ppm. A petroleum odor was detected in the soils from one to 5.6 feet.

The soils encountered in MW4 consisted of grayish brown sand with some silt and clay with a little gravel from grade to four feet below grade. Medium brown, wet clay with some sand was encountered from approximately four to 5.8 feet below grade. Weathered, dark gray dolomite was encountered from 5.8 feet to the total depth of 6.0 feet below grade. Groundwater was encountered at an approximate depth of four feet below ground surface. The VOCs detected in the headspace of soil samples collected from this borehole ranged from 2 to 37 ppm. A petroleum odor and staining was detected in the soils from four to six feet. MW4 was completed with a four-foot screened interval from approximately two feet to six feet below grade.

Sediments encountered in the four wells were clay with silt, sand and gravel. These findings are largely consistent with the interpretation of the *Surficial Geologic Map of Vermont* (Ref. 1).

B. Site Survey

The four wells were located in azimuth and elevation for inclusion on the Site Map presented in Appendix A. The top of PVC casing in MW1 was assigned an arbitrary elevation of 100.00 feet. The locations of the Shoreham Country Store building and other prominent site features were approximated for inclusion on this Site Map.

C. Determination of Groundwater Flow Direction and Gradient

Prior to groundwater sampling on April 24, 1997, the four monitoring wells were gauged for the presence of free floating product and depths to water. The results are tabulated as Liquid Level Monitoring Data in Appendix C. For each well, the measured depth to water was subtracted from the surveyed elevation of the measurement reference point (i.e., top of PVC casing) to determine the water table elevation. Water table elevations were plotted on the site map to generate the Groundwater Contour Map presented in Appendix A. Groundwater flow is directed generally toward the north-northwest at the site. An average approximate groundwater flow gradient of 5% was calculated for the April 24, 1997, data. Under this flow regime, MW3 and MW4 are each located downgradient of the former UST locations. MW1 would be located upgradient of the former UST pits and MW2 immediately upgradient from the eastern UST pit.

D. Groundwater Sampling and Analyses

A groundwater sample was collected from each of the four monitoring wells, using disposable bailers, on April 24, 1997. Groundwater samples were analyzed by EPA Method 602 and EPA Method 8100 (modified) by Endyne, Inc. laboratory of Williston, Vermont, for the petroleum-related constituents including benzene, toluene, ethylbenzene, and xylene (BTEX) compounds, methyl tertiary butyl ether (MTBE), and total petroleum hydrocarbons (TPH). Quality control (QC) samples (a trip blank and duplicate sample) were also collected. Analytical results are summarized in tabular form in Appendix D. Drinking water standards and groundwater enforcement standards are provided for reference in this summary table. Appendix D also contains the analytical laboratory report. Analytical results of the QC samples indicate that adequate Quality Assurance/ Quality Control was maintained throughout sample collection and analyses.

Free phase product was encountered in MW3 on April 24, 1997. Benzene was detected above the applicable groundwater quality standard in the sample collected from MW4. Toluene and ethylbenzene were detected at trace concentrations below their detection limits in MW4. Xylene was also detected in MW4 at a concentration below the applicable groundwater quality standard.

IV. EVALUATION OF POTENTIALLY SENSITIVE RECEPTORS

The Shoreham Country Store property and the immediately surrounding properties were inspected on April 24, 1997, to identify potentially sensitive receptors to subsurface contamination. The Shoreham Country Store building was identified as the potentially sensitive receptor of contamination at the site.

The basement of the Shoreham Country Store building was surveyed with a PID and the basement floor was inspected for product sheens. No vapors were detected with the PID and no product sheens were observed. Risks of vapor impact to the Shoreham Country Store building and area residences were determined to be negligible, given the above results. There have been no reported vapor impacts to the Shoreham Country Store building caused by the subsurface petroleum contamination in the former UST pits. The Shoreham Country Store building and immediately surrounding properties are serviced by municipal water supply and not on-site groundwater supply wells.

V. CONCLUSIONS

Based upon the results of the above investigative tasks, Griffin presents the following conclusions:

1. Four shallow monitoring wells were installed in the vicinity of the former USTs on April 18, 1997, using a vibratory drill rig. Petroleum contamination was detected in soils collected from the MW3 and MW4 boreholes.
2. Water table elevation data collected on April 24, 1997, indicate that groundwater in the overburden aquifer beneath the site flows in a north-northwest direction toward the Cedar Swamp, at an average approximate gradient of 5%. Groundwater elevation data indicate that MW1 is upgradient of the former UST locations.
3. Free phase product was detected in MW3 on April 24, 1997.
4. Dissolved petroleum contamination was detected in the sample from MW4.

VI. RECOMMENDATIONS

Based upon the above conclusions, Griffin makes the following recommendations:

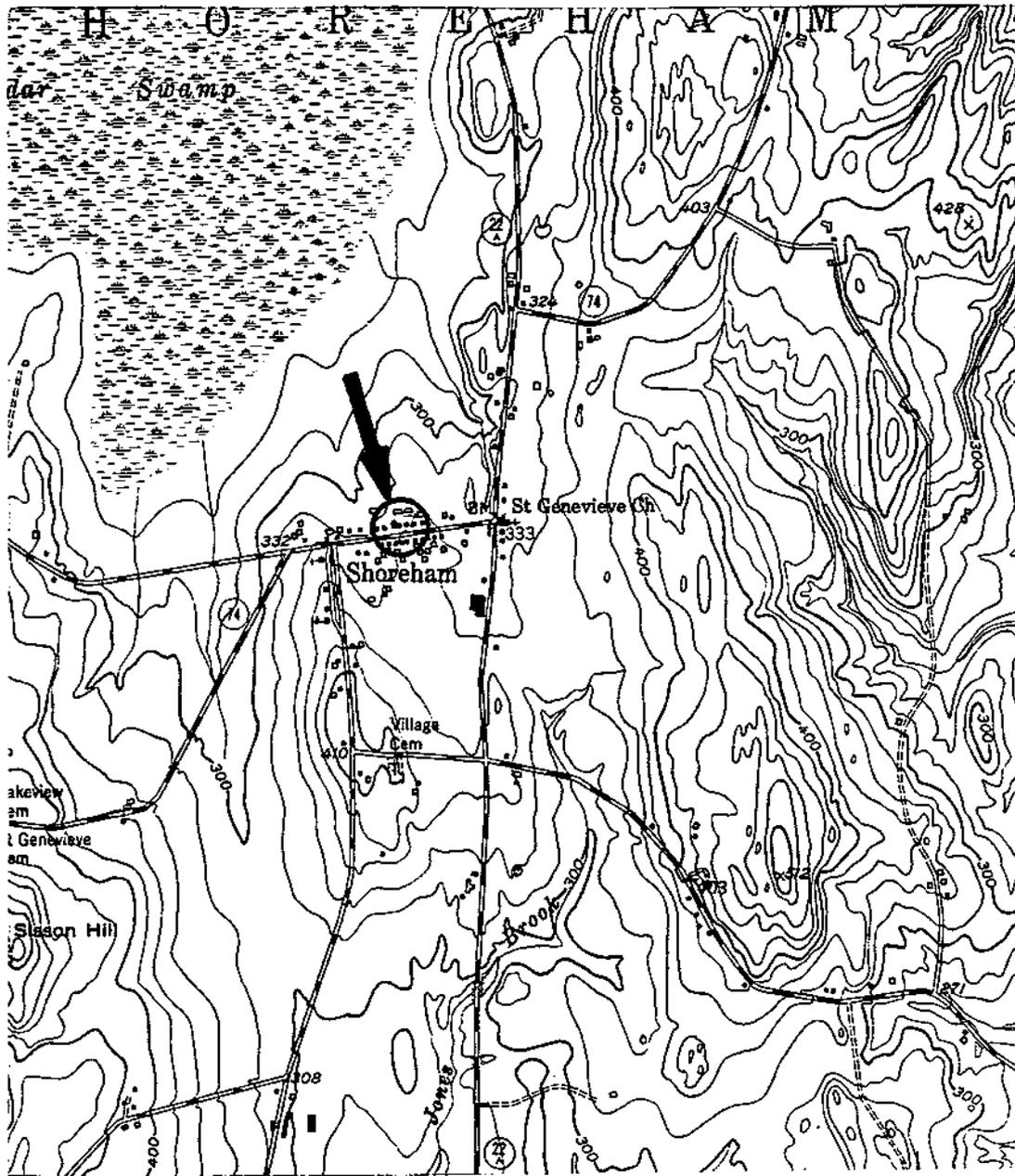
- 1) To track migration of subsurface petroleum constituents at the site and document expected reductions in contaminant concentrations, groundwater from on-site wells should be sampled and analyzed once more in July.
- 2) It is recommended that two rounds of bailing be performed, two weeks apart, to determine if the free product observed in MW3 is persistent. If the product is persistent, it is recommended that a sorbent pad be installed in MW3.
- 3) Based on the sampling and bailing results, recommendations can be made for further action warranted at the site.

REFERENCES

1. Doll, Charles G., ed., 1970, *Surficial Geologic Map of Vermont*, State of Vermont.
2. Doll, Charles G., ed., 1961, *Centennial Geologic Map of Vermont*, State of Vermont.

APPENDIX A

Site Maps



JOB #: 4974999
 SOURCE: USGS- BRIDPORT, VERMONT QUADRANGLE



SHOREHAM COUNTRY STORE

SHOREHAM, VERMONT

SITE LOCATION MAP

DATE: 4/25/97

DWG.#:1

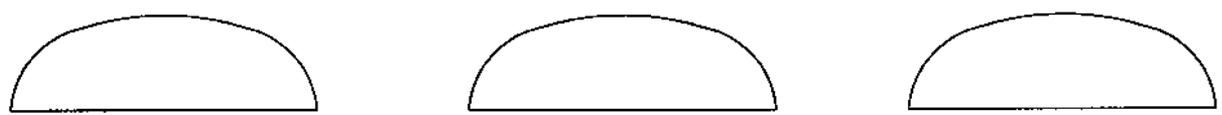
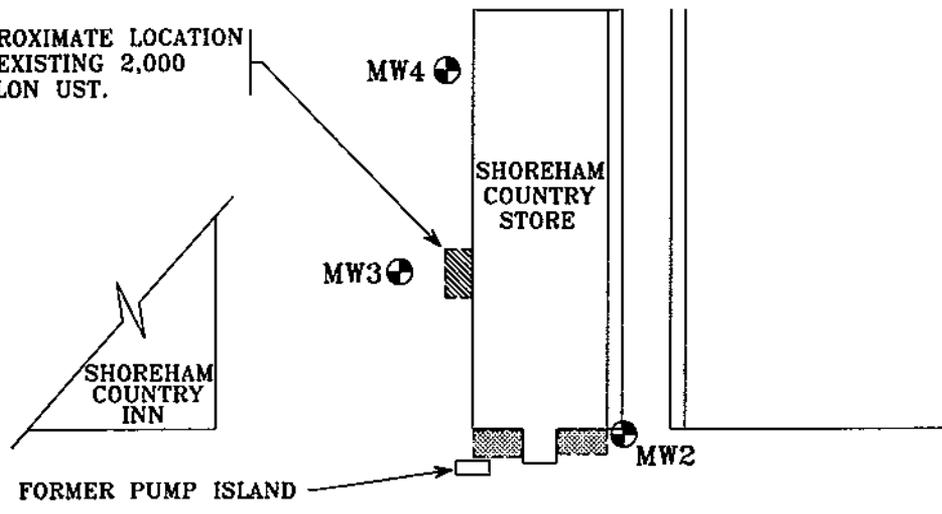
SCALE: 1:24000

DRN.:SB

APP.:TK



APPROXIMATE LOCATION
OF EXISTING 2,000
GALLON UST.



ROUTE 74

LEGEND

-  MW2 MONITORING WELL
-  FORMER LOCATION OF UNDERGROUND STORAGE TANKS

JOB #: 4974999



SHOREHAM COUNTRY STORE

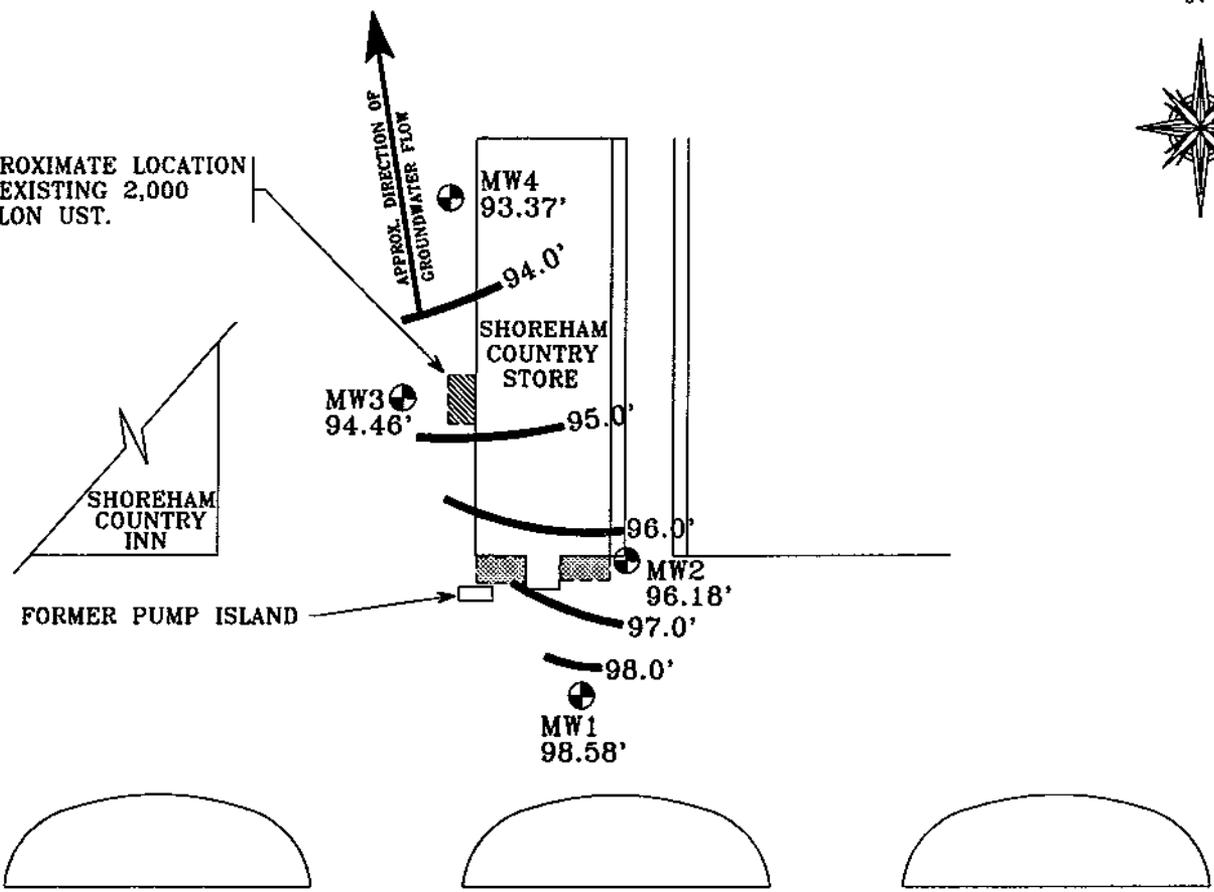
SHOREHAM, VERMONT

SITE SKETCH

DATE: 5/2/97	DWG.#:2	SCALE: 1"=40'	DRN.:SB	APP.:TK
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APPROXIMATE LOCATION
OF EXISTING 2,000
GALLON UST.



FORMER PUMP ISLAND

ROUTE 74

LEGEND

- MW2 96.18' MONITORING WELL AND WATER TABLE ELEVATION IN FEET
- 97.0' GROUNDWATER CONTOUR IN FEET (DASHED WHERE INFERRED)
- FORMER LOCATION OF UNDERGROUND STORAGE TANKS

JOB #: 4974999
MEASUREMENT DATE: 4/24/97



SHOREHAM COUNTRY STORE

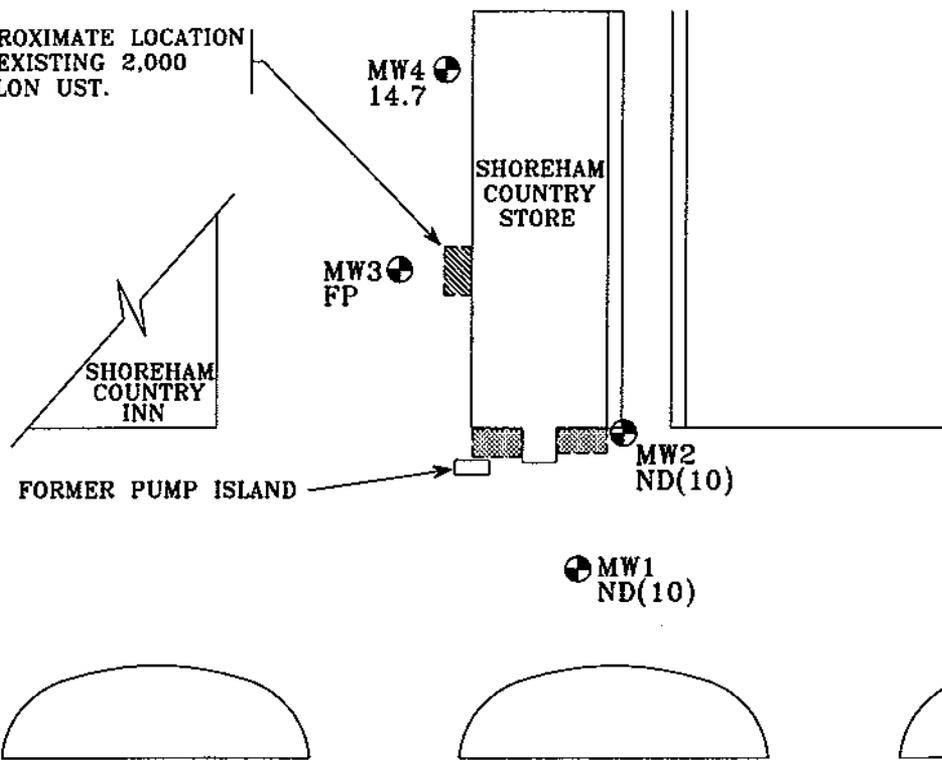
SHOREHAM, VERMONT

GROUNDWATER CONTOUR MAP

DATE: 5/2/97	DWG.#:3	SCALE: 1"=40'	DRN.:SB	APP.:TK
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APPROXIMATE LOCATION
OF EXISTING 2,000
GALLON UST.



ROUTE 74

LEGEND

- MW4 14.7 MONITORING WELL AND TOTAL BTEX AND MTBE CONCENTRATION (ppb)
- FP FREE PRODUCT
- ND NONE DETECTED
- ▨ FORMER LOCATION OF UNDERGROUND STORAGE TANKS

JOB #: 4974999
DATE SAMPLED: 4/24/97



SHOREHAM COUNTRY STORE

SHOREHAM, VERMONT

CONTAMINANT CONCENTRATION MAP

DATE: 5/2/97	DWG.#:4	SCALE: 1"=40'	DRN.:SB	APP.:TK
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APPENDIX B

Monitoring Well and Soil Boring Logs

PROJECT SHOREHAM COUNTRY STORE

LOCATION SHOREHAM, VERMONT

DATE DRILLED 4/18/97 TOTAL DEPTH OF HOLE 7.0'

DIAMETER 2.75"

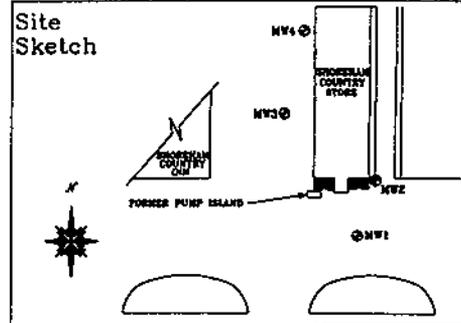
SCREEN DIA. 1.5" LENGTH 4.7' SLOT SIZE 0.010"

CASING DIA. 1.5" LENGTH 23' TYPE sch 40 pvc

DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY

DRILLER G. ADAMS LOG BY T. KELLY

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				0
0	PRESSURE CAP			Asphalt	0
0	CONCRETE			Roadbed	1
1	NATIVE BACKFILL		1.5'-4.7'	Dark gray, moist, silty and sandy CLAY, with trace angular gravel locally.	1
2	BENTONITE		0 ppm		2
2	WELL RISER				2
3				3.0' WATER TABLE	3
4	SAND PACK			Medium yellowish brown CLAY with SILT and SAND, trace gravel, moist.	4
5	WELL SCREEN			Same as above	5
6	BOTTOM CAP		4.7'-7.0'	Medium yellowish brown SAND with some silt, trace fine gravel, wet.	6
7			0 ppm		7
8	UNDISTURBED NATIVE SOIL			BASE OF WELL AT 7.0'	8
8				END OF EXPLORATION AT 7.0'	8
9					9
10					10
11					11
12					12
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 SHOREHAM COUNTRY STORE

LOCATION SHOREHAM, VERMONT

DATE DRILLED 4/18/97 TOTAL DEPTH OF HOLE 5.9'

DIAMETER 2.75"

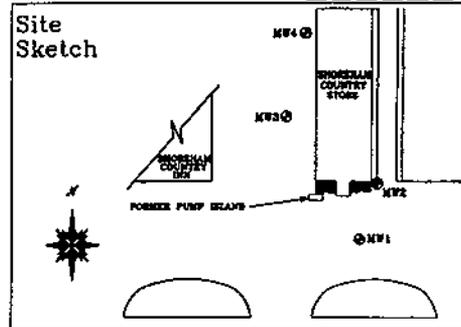
SCREEN DIA. 1.5" LENGTH 4.0' SLOT SIZE 0.010"

CASING DIA. 1.5" LENGTH 1.4' TYPE sch 40 pvc

DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY

DRILLER G. ADAMS LOG BY T. KELLY

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 PRESSURE CAP CONCRETE			Sand and gravel FILL	0
1	NATIVE BACKFILL		2.0'-4.7'	Grayish brown GRAVEL with SILT and SAND, fill.	1
2	BENTONITE WELL RISER		0 ppm		2
3	SAND PACK			Medium brown, yellowish brown CLAY with a little silt, trace cobbles, moist.	3
4	WELL SCREEN				4
5	BOTTOM CAP			5.0' WATER TABLE	5
6	UNDISTURBED NATIVE SOIL		4.7'-5.9'	Same as above Wet, olive brown SAND with a little fine gravel and a little silt.	6
7			26 ppm	BASE OF WELL AT 5.9'	7
8				END OF EXPLORATION AT 5.9'	8
9					9
10					10
11					11
12					12
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 SHOREHAM COUNTRY STORE

LOCATION SHOREHAM, VERMONT

DATE DRILLED 4/18/97 TOTAL DEPTH OF HOLE 5.6'

DIAMETER 2.75"

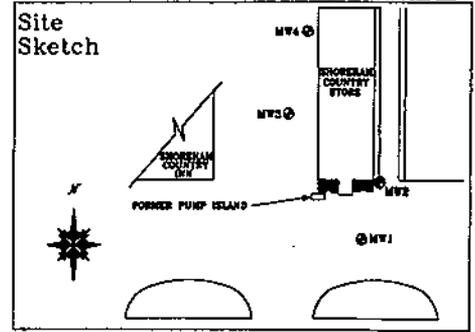
SCREEN DIA. 1.5" LENGTH 4.0' SLOT SIZE 0.010"

CASING DIA. 1.5" LENGTH 1.2' TYPE sch 40 pvc

DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY

DRILLER G. ADAMS LOG BY T. KELLY

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				0
0	PRESSURE CAP				0
0	CONCRETE				0
0	BENTONITE				0
1			1.5'-4.7'	Grayish brown SAND with some SILT and angular GRAVEL, moist.	1
2	WELL RISER		1 ppm	Moist, locally wet CLAY with some silt, sandy interbeds at 3.5'-4.0' (wet), reddish to grayish brown, petroleum odor.	2
3	SAND PACK				3
4	WELL SCREEN			4.0' WATER TABLE	4
5	BOTTOM CAP				5
6	UNDISTURBED NATIVE SOIL		4.7'-5.6'	Olive and gray SAND and GRAVEL with a little silt, wet, petroleum odor.	6
7				BASE OF WELL AT 5.6'	7
8				END OF EXPLORATION AT 5.6'	8
9					9
10					10
11					11
12					12
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 SHOREHAM COUNTRY STORE

LOCATION SHOREHAM, VERMONT

DATE DRILLED 4/18/97 TOTAL DEPTH OF HOLE 6.0'

DIAMETER 2.75"

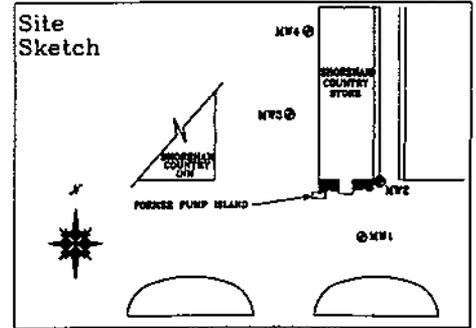
SCREEN DIA. 1.5" LENGTH 4.0' SLOT SIZE 0.010"

CASING DIA. 1.5" LENGTH 1.6' TYPE sch 40 pvc

DRILLING CO. ADAMS CONST. DRILLING METHOD VIBRATORY

DRILLER G. ADAMS LOG BY T. KELLY

WELL NUMBER MW4



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	PRESSURE CAP				0
0	CONCRETE				0
0	NATIVE BACKFILL				0
1	BENTONITE		0'-2.0'	Grayish brown SAND with some silt and clay and a little gravel, moist.	1
2	WELL RISER		2 ppm		2
3	SAND PACK		2.0'-4.7'		3
4	WELL SCREEN		20 ppm	4.0' WATER TABLE	4
5	BOTTOM CAP			Medium brown CLAY with some sand, wet, petroleum odor, locally stained gray local gravel.	5
6	UNDISTURBED NATIVE SOIL		4.7'-6.0'	Same as above, petroleum odor.	6
7			37 ppm	Weathered dolomite	7
8				BASE OF WELL AT 6.0'	8
9				END OF EXPLORATION AT 6.0'	9
10					10
11					11
12					12
13					13
14					14
15					15
16					16
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21					21
22					22
23					23
24					24
25					25

APPENDIX C

Liquid Level Data

**Liquid Level Monitoring Data
Shoreham Country Store
Shoreham, Vermont**

Monitoring Date: 4/24/97

Well	Top of Casing Elevation	Depth To Product	Depth To Water	Product Thickness	Specific Gravity Of Product	Hydro Equivalent	Corrected Depth To Water	Water Table Elevation
MW1	100.00	--	1.42	--	--	--	NA	98.58
MW2	100.34	--	4.16	--	--	--	NA	96.18
MW3	97.48	2.98	3.02	0.04	0.88	0.04	2.98	94.46
MW4	97.73	--	4.36	--	--	--	NA	93.37

all units in feet

4999wtiv.xls

APPENDIX D

Groundwater Quality Data

Summary of Groundwater Quality Data, Shoreham Country Inn, Shoreham, VT

PARAMETER	4-24-97					VGES*
	MW1	MW2	MW3	MW4	Trip Bl.	
Benzene	ND(1)	ND(1)	FP	5.8	ND(1)	5
Chlorobenzene	ND(1)	ND(1)		ND(5)	ND(1)	100
1,2-DCB	ND(1)	ND(1)		ND(5)	ND(1)	600
1,3-DCB	ND(1)	ND(1)		ND(5)	ND(1)	600
1,4-DCB	ND(1)	ND(1)		ND(5)	ND(1)	75
Ethylbenzene	ND(1)	ND(1)		TBQ(5)	ND(1)	680
Toluene	ND(1)	ND(1)		TBQ(5)	ND(1)	1000
Xylenes	ND(1)	ND(1)		8.9	ND(1)	400
Total BTEX	ND(1)	ND(1)		14.7	ND(1)	
MTBE	ND(10)	ND(10)		ND(50)	ND(10)	40 ^a
BTEX+MTBE	ND(10)	ND(10)		14.7	ND(10)	

Detections are **BOLD**

FP = free product present

Values greater than the VGES are shaded

All values reported in ug/l (ppb) unless otherwise noted

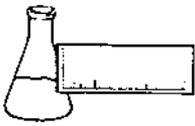
NA - Not Analyzed

ND(1000) - Not Detected (Detection Limit)

a: Vermont Health Advisory Limit (HAL)

* Vermont Groundwater Enforcement Standards.

Source: VTDEC Groundwater Protection Rule and Strategy.



EPA METHOD 602--PURGEABLE AROMATICS

CLIENT: Griffin International

DATE RECEIVED: April 25, 1997

PROJECT NAME: Shorham Inn

REPORT DATE: April 29, 1997

CLIENT PROJ. #: 4974999

PROJECT CODE: GIS11897

Ref. #:	102,664	102,665	102,666	102,667	102,668
Site:	Trip Blank	MW 1	MW 1 Dup.	MW 2	MW 4
Date Sampled:	4/24/97	4/24/97	4/24/97	4/24/97	4/24/97
Time Sampled:	7:45	9:40	9:40	9:59	10:15
Sampler:	R. Higgins				
Date Analyzed:	4/28/97	4/28/97	4/28/97	4/28/97	4/28/97
UIP Count:	0	0	0	5	>10
Dil. Factor (%):	100	100	100	100	20
Surr % Rec. (%):	90	91	87	92	106
Parameter	Conc. (ug/L)				
Benzene	<1	<1	<1	<1	5.8
Chlorobenzene	<1	<1	<1	<1	<5
1,2-Dichlorobenzene	<1	<1	<1	<1	<5
1,3-Dichlorobenzene	<1	<1	<1	<1	<5
1,4-Dichlorobenzene	<1	<1	<1	<1	<5
Ethylbenzene	<1	<1	<1	<1	TBQ<5
Toluene	<1	<1	<1	<1	TBQ<5
Xylenes	<1	<1	<1	<1	8.9
MTBE	<10	<10	<10	<10	<50

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



ENDYNE, INC.

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

4974999

20515

CHAIN-OF-CUSTODY RECORD

Project Name: <u>Shorham Inn</u> Site Location: <u>Shorham, VT</u>	Reporting Address: <u>GRIFFIN</u>	Billing Address:
Endyne Project Number: <u>GISI 1897</u>	Company: <u>T. KELLY</u> Contact Name/Phone #:	Sampler Name: <u>R. HAGINS</u> Phone #:

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				
102664	TRIP Bank	H ₂ O	✓		4/21/97 7:45	2	40ML G		602	HCl	
102665	MW1	↓	↓		9:40	↓	↓		↓		
102666	MW1 Dupline	↓	↓		9:40	↓	↓		↓		
102667	MW2	↓	↓		9:59	↓	↓		↓		
102668	MW4	↓	↓		10:15	↓	↓		↓		

Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time <u>4/25 9:45am</u>
Relinquished by: Signature <u>[Signature]</u>	Received by: Signature <u>[Signature]</u>	Date/Time <u>4-25-97 10:05</u>

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):										