DH Dufresne-Henry

Dufresne-Henry, Inc.
58 East State Street
Montpelier, Vermont 05602
802-229-0711

Engineering Disciplines
Civil
Environmental
Transportation
Municipal
Mountain
Structural
Electrical
Mechanical
Industrial

Associated Disciplines
Surveying
Construction Management
Applied Sciences
Water Quality
Geologic
Hydrologic
Computer

12 November 1986

HAZARDOUS WASTE SITE EVALUATION REPORT

New England Video Property
Rutland, Vermont

GENERAL

The property under evaluation is a 1± acre parcel owned by New England Video on North Street in Rutland, Vermont. New England Video purchased this land in 1983 from Mr. Robert Brown. The property had formerly been used by Mr. Brown and his father as a location of the Brown's Dry Cleaning establishment. In the spring of 1985, New England Video discovered two underground tanks located on the property. These tanks appeared to contain hazardous materials. New England Video retained Geomapping Associates to perform a limited evaluation of the site which resulted in identifying the presence of hydrocarbons in the soils and some benzene compounds obtained from a water sample from the site. It is not clear where the water sample was taken. Subsequent to this work, New England Video has taken the position that the responsibility for dealing with these tanks lies with Mr. Brown.

The Brown's utilized the property for dry cleaning from 1920 through 1982. One tank was used prior to 1957 as a filtering mechanism for dry cleaning liquids (Stoddard solvent). The other tank was used for storage of gasoline. Neither tank has been used since 1957.

SITE DESCRIPTION

The subject parcel is a 1± acre parcel consisting of a commercial building located on the south side of North Street and the north side of Tenney Brook. The soils on the property appear to be sands adjacent to the brook with extremely stony, sandy gravel adjacent to the building and the street. Dufresne-Henry performed a limited site investigation based on our 10 July 1986 Scope of Services which had been agreed to in a meeting between Mr. Brown, New England Video and representatives of the Agency of Environmental Conservation on 24 June 1986. Both tanks were inspected and samples obtained for laboratory analyses for volatile organics. Each tank appeared to be a 500 gallon steel tank encased in concrete. On the date of our field investigations (31 July 1986) the north tank was approximately half full of

liquid which presented a slight odor of volatile organics. The south tank was full with no organic odors. The areas surrounding the tanks and within the tanks were tested utilizing a Leaktec volatile gas analyzer with elevated readings obtained only when the analyzer was placed deep into the north tank (just above liquid surface).

Dufresne-Henry obtained samles from both tanks which were analyzed for volatile organic compounds by Aquatec, Inc. One groundwater monitoring well (MW-1) was placed between the tanks and Tenney Brook. Numerous attempts were made to place an additional upgradient monitoring well with no success because of the extremely rocky nature of the soil. A soils sample which appeared to contain hydrocarbons was obtained from the excavation for the monitoring well and analyzed for volatile organics. One water sample was also taken from the well for analysis. Samples were taken from Tenney Brook upstream and downstream of the property to determine if there had been any measurable impact on Tenney Brook.

All of these samples were analyzed for volatile organic compounds utilizing EPA Method 624-2. This method analyzes for the normal 35 hazardous materials as well as identifies those additional peaks which are encountered in the GC-MS scan. The results of these analyses are attached. The north tank contained concentrations of benzene, methyl benzene, ethyl benzene, toluene, acetone, 2-butenone, xylenes and dichlorodifluoromethane in concentrations from 420 to 5,900 mg/l. The south tank contained concentrations of ethyl benzene, xylenes, ethyl alcohol and other benzene compounds in concentrations ranging from 79 to 2,000 ug/l.

The soils sample taken at a depth of 5.5 feet below the surface during the excavation of MW-1 contained no detectable concentrations of the normal volatile organic compounds. This sample did, however, contain significant concentrations (in the range of 1,900 to 34,000 ug/kg) of benzene derivative compounds and unsaturated hydrocarbons.

The sample from Tenney Brook taken above the project, adjacent to the bridge, contained no detectable concentrations of the volatile organics with the exception of 8 ug/l of dichlorodifluoromethane. The water sample taken from Tenney Brook directly below the tanks contained 6 ug/l of 1-1-1-trichloroethane which had not been presented in any other analyses and 62 ug/l of ethyl alcohol.

In summary, the laboratory analysis for volatile organic compounds indicate that, in spite of the relatively high concentrations of various compounds found in the tanks, particularly the north tank, and soils encountered in MW-1, these compounds do not appear to be present in Tenney Brook. An exception appears to be ethyl alcohol which is present at a concentration of 460 in the south tank, 140 in MW-1 and in the brook below the tanks at 62 ug/l. These data appear to show a direct link betwen the south tank and Tenney Brook. The lack of presence of the other compounds in the brook may be a result of the random nature of the sampling or a result of attenuation by dilution, dispersion or other mechanisms. These data appear to confirm the major pathway for dispersion of the contaminants is via the

groundwater between the tanks and Tenney Brook and ultimately Tenney Brook. Tenney Brook flows westward several hundred feet where it meets East Creek which joins Otter Creek approximately 1,000 feet downstream. These streams flow through generally residential areas of Rutland.

RECOMMENDATIONS

As proposed in our 26 November 1985 Scope and discussions with the Agency of Environmental Conservation, because of the elevated concentrations of volatile organics in both the north and south tanks, it is recommended that:

(1) both of these tanks be pumped and that the liquid in these tanks be disposed of in an approved hazardous waste disposal facility;

(2) the tanks be thoroughly rinsed with the rinse water also taken to a hazardous waste disposal facility. The tanks should be removed and disposed of at Rutland Sanitary Landfill;

(3) the contaminated soils between the tank and Tenney Brook be removed and disposed of at a site approved for the disposal of oil saturated soils;

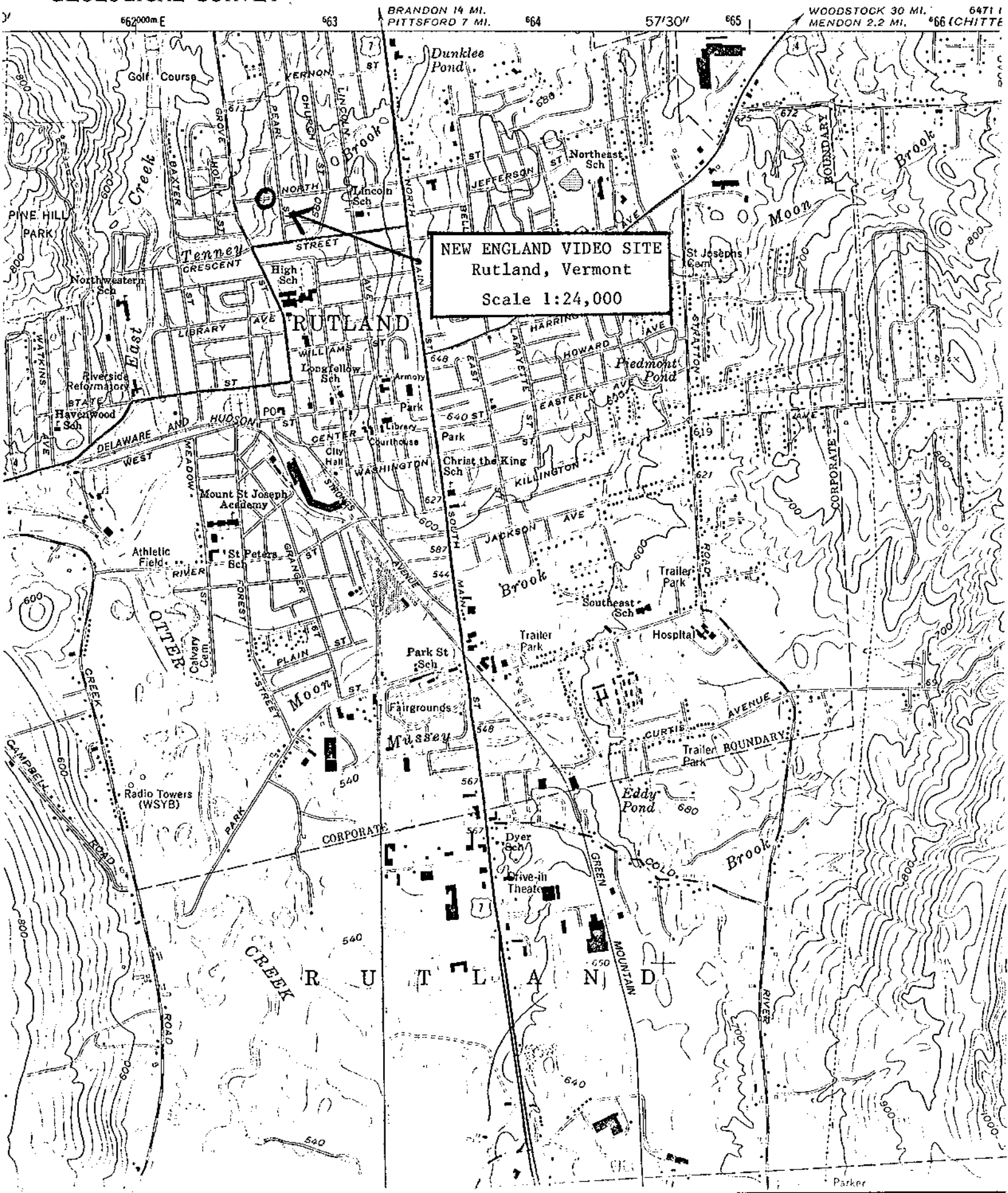
(4) the site be backfilled with clean, compacted fill and topsoil spread over all disturbed areas with these areas then seeded and mulched.

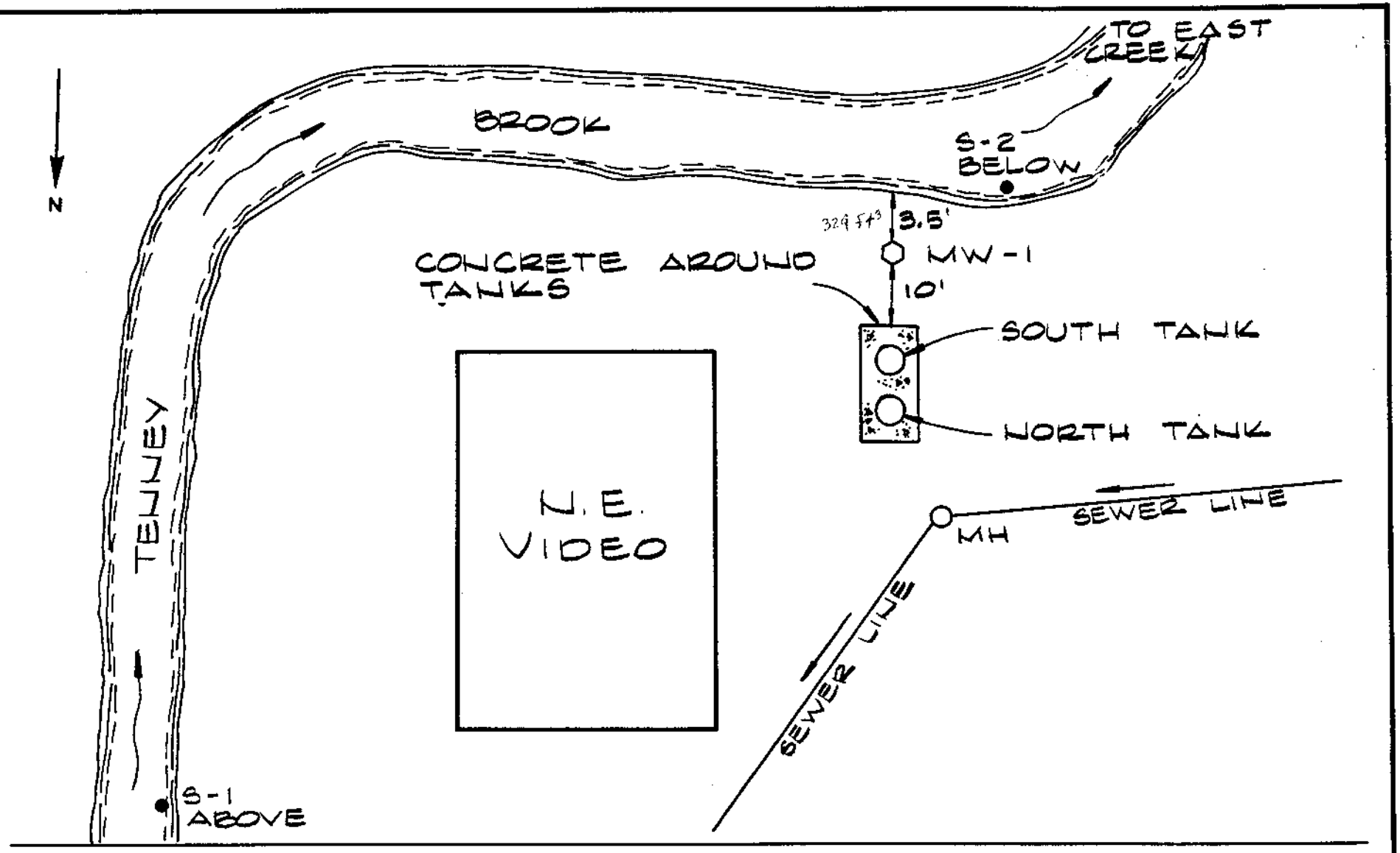
Donald R. Marsh, P.E.

DRM:ljm

UNITED STATES
EPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

870018





N.E. VIDEO PROPERTY
RUTLAND, VERMONT
SKETCH PLAN
NOT TO SCALE

Client No.
Proj. Mgr. DRM
Date 11·12·84
N.E. VIDEO PROPERTY
SKETCH PLAN
RUTLAND, VERMONT
Dufresne-Henry Inc.
A

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61203
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, North Tank

Volatile Organic Compounds in ug/l

benzene	960	
carbon tetrachloride	100	U
chlorobenzene	100	U
1,2-dichloroethane	100	U
1,1,1-trichloroethane	100	U
1,1-dichloroethane	100	U
1,1,2-trichloroethane	100	U
1,1,2,2-tetrachloroethane	100	U
chloroethane	200	U
2-chloroethyl vinyl ether	200	U
chloroform	100	U
1,1-dichloroethene	100	U
1,2-dichloroethene	100	U
1,2-dichloropropane	100	U
trans-1,3-dichloropropene	100	U
cis-1,3-dichloropropene	100	U
ethylbenzene	420	

methylene chloride	NDB	
chloromethane	200	U
bromomethane	200	U
bromoform	100	U
bromodichloromethane	100	U
dibromochloromethane	100	U
tetrachloroethene	100	U
toluene	3200	
trichloroethene	100	U
vinyl chloride	200	U
acetone	2300C	
2-butanone	920	
carbon disulfide	100	U
2-hexanone	200	U
4-methyl-2-pentanone	200	U
styrene	100	U
vinyl acetate	200	U
total xylenes	2400	

Sample was diluted 20 fold for analysis. See attached page for other volatile organic compounds found.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

NDB - Quantitation is not possible due to the relative concentration of the compound in the blank.

K - The compound was analyzed for and detected, but at a concentration not reliably quantifiable. The number is the detection limit for the compound.

C - The result has been corrected for the presence of the compound in the blank.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61203
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, North Tank

Volatile Compounds not on the Hazardous Substances List

Scan No.*	Name	Estimated Conc.** (ug/l)
39	dichlorodifluoromethane	5,900
236	a C_6H_{12} hydrocarbon	170
252	a C_6H_{12} hydrocarbon	140
612	a C_3 substituted benzene	370

* Indicates relative location of chromatographic peak in a total of 700 scans in the chromatogram at three seconds per scan.

** Concentration estimated from ratio of Enhanced Reconstructed Ion Chromatogram (ERIC) of compound to ERIC of nearest internal standard, assuming a response factor of 1.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61204
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, South Tank

Volatile Organic Compounds in ug/l

benzene	25	U	methylene chloride	NDB	
carbon tetrachloride	25	U	chloromethane	50	U
chlorobenzene	25	U	bromomethane	50	U
1,2-dichloroethane	25	U	bromoform	25	U
1,1,1-trichloroethane	25	U	bromodichloromethane	25	U
1,1-dichloroethane	25	U	dibromochloromethane	25	U
1,1,2-trichloroethane	25	U	tetrachloroethene	25	U
1,1,2,2-tetrachloroethane	25	U	toluene	25	U
chloroethane	50	U	trichloroethene	25	U
2-chloroethyl vinyl ether	50	U	vinyl chloride	50	U
chloroform	25	U	acetone	NDB	
1,1-dichloroethene	25	U	2-butanone	50	U
1,2-dichloroethene	25	U	carbon disulfide	25	U
1,2-dichloropropane	25	U	2-hexanone	50	U
trans-1,3-dichloropropene	25	U	4-methyl-2-pentanone	50	U
cis-1,3-dichloropropene	25	U	styrene	25	U
ethylbenzene	160		vinyl acetate	50	U
			total xylenes	2000	

Sample was diluted 5 fold for analysis. See attached page for other volatile organic compounds found.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

NDB - Quantitation is not possible due to the relative concentration of the compound in the blank.

K - The compound was analyzed for and detected, but at a concentration not reliably quantifiable. The number is the detection limit for the compound.

C - The result has been corrected for the presence of the compound in the blank.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61204
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, South Tank

Volatile Compounds not on the Hazardous Substances List

Scan No.*	Name	Estimated Conc.** (ug/l)
13	ethyl alcohol	460
623	propylbenzene	79
681	a trimethylbenzene	700

* Indicates relative location of chromatographic peak in a total of 700 scans in the chromatogram at three seconds per scan.

** Concentration estimated from ratio of Enhanced Reconstructed Ion Chromatogram (ERIC) of compound to ERIC of nearest internal standard, assuming a response factor of 1.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61202
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, MW-1

Volatile Organic Compounds in ug/l

benzene	5	U	methylene chloride	NDB	
carbon tetrachloride	5	U	chloromethane	10	U
chlorobenzene	5	U	bromomethane	10	U
1,2-dichloroethane	5	U	bromoform	5	U
1,1,1-trichloroethane	5	U	bromodichloromethane	5	U
1,1-dichloroethane	5	U	dibromochloromethane	5	U
1,1,2-trichloroethane	5	U	tetrachloroethene	5	U
1,1,2,2-tetrachloroethane	5	U	toluene	5	U
chloroethane	10	U	trichloroethene	5	U
2-chloroethyl vinyl ether	10	U	vinyl chloride	10	U
chloroform	5	U	acetone	NDB	
1,1-dichloroethene	5	U	2-butanone	10	U
1,2-dichloroethene	5	U	carbon disulfide	5	U
1,2-dichloropropane	5	U	2-hexanone	10	U
trans-1,3-dichloropropene	5	U	4-methyl-2-pentanone	10	U
cis-1,3-dichloropropene	5	U	styrene	5	U
ethylbenzene	5K		vinyl acetate	10	U
			total xylenes	120	

See attached page for other volatile organic compounds found.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

NDB - Quantitation is not possible due to the relative concentration of the compound in the blank.

K - The compound was analyzed for and detected, but at a concentration not reliably quantifiable. The number is the detection limit for the compound.

C - The result has been corrected for the presence of the compound in the blank.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61202
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, MW-1

Volatile Compounds not on the Hazardous Substances List

Scan No.*	Name	Estimated Conc.** (ug/l)
13	ethyl alcohol	140
500	a trimethylcyclohexane	16
527	a trimethylcyclohexane	8
622	propylbenzene	26
647	unknown	8
682	unknown	50

* Indicates relative location of chromatographic peak in a total of 700 scans in the chromatogram at three seconds per scan.

** Concentration estimated from ratio of Enhanced Reconstructed Ion Chromatogram (ERIC) of compound to ERIC of nearest internal standard, assuming a response factor of 1.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61201
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, soil sample labeled Brown, Rutland, VT, 7/31/86, MW-1, 5.5'

Volatile Organic Compounds in ug/kg wet

benzene	1000	U	methylene chloride	NDB	
carbon tetrachloride	1000	U	chloromethane	2000	U
chlorobenzene	1000	U	bromomethane	2000	U
1,2-dichloroethane	1000	U	bromoform	1000	U
1,1,1-trichloroethane	1000	U	bromodichloromethane	1000	U
1,1-dichloroethane	1000	U	dibromochloromethane	1000	U
1,1,2-trichloroethane	1000	U	tetrachloroethene	1000	U
1,1,2,2-tetrachloroethane	1000	U	toluene	1000	U
chloroethane	2000	U	trichloroethene	1000	U
2-chloroethyl vinyl ether	2000	U	vinyl chloride	2000	U
chloroform	1000	U	acetone	NDB	
1,1-dichloroethene	1000	U	2-butanone	NDB	
1,2-dichloroethene	1000	U	carbon disulfide	1000	U
1,2-dichloropropane	1000	U	2-hexanone	2000	U
trans-1,3-dichloropropene	1000	U	4-methyl-2-pentanone	2000	U
cis-1,3-dichloropropene	1000	U	styrene	1000	U
ethylbenzene	1000	U	vinyl acetate	2000	U
			total xylenes	1000	U

Sample was extracted into methanol and diluted 200 fold for analysis. See attached page for other volatile organic compounds found.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

NDB - Quantitation is not possible due to the relative concentration of the compound in the blank.

K - The compound was analyzed for and detected, but at a concentration not reliably quantifiable. The number is the detection limit for the compound.

C - The result has been corrected for the presence of the compound in the blank.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61201
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, soil sample labeled Brown, Rutland, VT, 7/31/86, MW-1, 5.5'

Volatile Compounds not on the Hazardous Substances List

Scan No.*	Name	Estimated Conc.** (ug/kg wet)
481	unsaturated hydrocarbon	9,600
503	a C_3 substituted cyclohexane	1,900
542	a propylcyclohexane	10,000
565	unsaturated hydrocarbon	34,000
589	unknown	2,500
615	unknown hydrocarbon	6,400
628	a C_3 substituted benzene	13,000
653	unsaturated hydrocarbon	6,900

* Indicates relative location of chromatographic peak in a total of 700 scans in the chromatogram at three seconds per scan.

** Concentration estimated from ratio of Enhanced Reconstructed Ion Chromatogram (ERIC) of compound to ERIC of nearest internal standard, assuming a response factor of 1.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61205
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, Tenny Brook, above

Volatile Organic Compounds in ug/l

benzene	5	U	methylene chloride	NDB	
carbon tetrachloride	5	U	chloromethane	10	U
chlorobenzene	5	U	bromomethane	10	U
1,2-dichloroethane	5	U	bromoform	5	U
1,1,1-trichloroethane	5	U	bromodichloromethane	5	U
1,1-dichloroethane	5	U	dibromochloromethane	5	U
1,1,2-trichloroethane	5	U	tetrachloroethene	5	U
1,1,2,2-tetrachloroethane	5	U	toluene	5	U
chloroethane	10	U	trichloroethene	5	U
2-chloroethyl vinyl ether	10	U	vinyl chloride	10	U
chloroform	5	U	acetone	10	U
1,1-dichloroethene	5	U	2-butanone	10	U
1,2-dichloroethene	5	U	carbon disulfide	5	U
1,2-dichloropropane	5	U	2-hexanone	10	U
trans-1,3-dichloropropene	5	U	4-methyl-2-pentanone	10	U
cis-1,3-dichloropropene	5	U	styrene	5	U
ethylbenzene	5	U	vinyl acetate	10	U
			total xylenes	5	U

See attached page for other volatile organic compounds found.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

NDB - Quantitation is not possible due to the relative concentration of the compound in the blank.

K - The compound was analyzed for and detected, but at a concentration not reliably quantifiable. The number is the detection limit for the compound.

C - The result has been corrected for the presence of the compound in the blank.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61205
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, Tenny Brook, above

Volatile Compounds not on the Hazardous Substances List

Scan No.*	Name	Estimated Conc.** (ug/l)
49	dichlorodifluoromethane	8

* Indicates relative location of chromatographic peak in a total of 700 scans in the chromatogram at three seconds per scan.

** Concentration estimated from ratio of Enhanced Reconstructed Ion Chromatogram (ERIC) of compound to ERIC of nearest internal standard, assuming a response factor of 1.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61206
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, Tenny Brook, below

Volatile Organic Compounds in ug/l

benzene	5	U	methylene chloride	NDB	
carbon tetrachloride	5	U	chloromethane	10	U
chlorobenzene	5	U	bromomethane	10	U
1,2-dichloroethane	5	U	bromoform	5	U
1,1,1-trichloroethane	6		bromodichloromethane	5	U
1,1-dichloroethane	5	U	dibromochloromethane	5	U
1,1,2-trichloroethane	5	U	tetrachloroethene	5	U
1,1,2,2-tetrachloroethane	5	U	toluene	5	U
chloroethane	10	U	trichloroethene	5	U
2-chloroethyl vinyl ether	10	U	vinyl chloride	10	U
chloroform	5	U	acetone	NDB	
1,1-dichloroethene	5	U	2-butanone	10	U
1,2-dichloroethene	5	U	carbon disulfide	5	U
1,2-dichloropropane	5	U	2-hexanone	10	U
trans-1,3-dichloropropene	5	U	4-methyl-2-pentanone	10	U
cis-1,3-dichloropropene	5	U	styrene	5	U
ethylbenzene	5	U	vinyl acetate	10	U
			total xylenes	5	U

See attached page for other volatile organic compounds found.

Key to the letters used to qualify the results of the analysis:

U - The compound was analyzed for but not detected. The number is the detection limit for the compound.

NDB - Quantitation is not possible due to the relative concentration of the compound in the blank.

K - The compound was analyzed for and detected, but at a concentration not reliably quantifiable. The number is the detection limit for the compound.

C - The result has been corrected for the presence of the compound in the blank.

Quality controls were analyzed with the sample as part of Aquatec's standard analytical procedures. The results of these are maintained on file at Aquatec.

aquatec
ENVIRONMENTAL SERVICES
75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 18 August 1986
Aquatec Lab No.: 61206
ETR No.: 8235
Sample Received On: 1 August 1986
Sample Identification: Dufresne-Henry, water sample labeled Brown, Rutland, VT, 7/31/86, Tenny Brook, below

Volatile Compounds not on the Hazardous Substances List

Scan No.*	Name	Estimated Conc.** (ug/l)
14	ethyl alcohol	62
49	dichlorodifluoromethane	<5

* Indicates relative location of chromatographic peak in a total of 700 scans in the chromatogram at three seconds per scan.

** Concentration estimated from ratio of Enhanced Reconstructed Ion Chromatogram (ERIC) of compound to ERIC of nearest internal standard, assuming a response factor of 1.