

October 31, 2000

Chuck Schwer  
Sites Management Section  
Waste Management Section  
103 South Main Street, West Office Building  
Waterbury, VT 05671-0404



**STONE ENVIRONMENTAL INC**

*Main Office:*

58 East State Street  
Montpelier, Vermont  
05602 USA

Phone / 802. 229.4541

Fax / 802. 229.5417

E-Mail / sei@stone-env.com

Web Site / www.stone-env.com

SEI No. 98-892

RE: Site Investigation Status Report and  
proposed follow-up work plan for the Braun Site in Norwich, VT.  
SMS Site #98-2500

Dear Chuck:

In response to your request to Mrs. Kathy Braun, Stone Environmental Inc. (SEI) has performed a limited site investigation at the Braun Residence in Norwich, Vermont. The work was performed using the Expressway Site Investigation procedure; the expressway notification form was presented as part of the enclosed December 4, 1998 letter from SEI to Bob Butler of SMS.

Soil contamination was discovered by C.A.B Services Inc. (UST removal company) on August 18, 1998 during the removal of a 500 gallon #2 fuel oil underground storage tank (UST). At the time of the UST removal process, holes in the UST were observed and a peak reading of 60 ppm was measured (using photoionization detector [PID]/soil headspace method) in the soil from the bottom of the excavation (approximately 8 feet below ground surface [BGS]). No olfactory or visible signs of contamination were detected during the removal. I have enclosed the UST closure report for your review.

SEI performed a limited site investigation on December 2, 1998. The investigation consisted of soil borings in the area of the former UST and at the base of a curtain drain which, at times of high water, is likely to be a point of discharge for groundwater leaving the former UST area (see Figure 1 for site sketch). Analysis (PID/headspace) of the soil (Soil #1 on Figure #1) indicated that a small quantity (as high as 3.5 ppm) of volatile organic compound (VOC) contamination was still present in the area of the UST (Soil #2, at a depth of approximately 4 feet BGS) and that the curtain drain area was devoid of VOC contamination. Laboratory analysis by EPA Methods 8100 for total petroleum hydrocarbon (TPH) and 8021B for fuel related VOCs analyses were performed on a soil sample collected in the curtain drain area. The results of the curtain drain area soil analyses support the PID readings and indicate no contamination is present at levels above the laboratory detection limits. Air monitoring of a workroom, located on the bottom floor of the house and adjacent to the UST area, using a PID indicated that no VOC contamination was present as a result of the

**Southeast Regional Office:**

206 Langston Mill Court  
Raleigh, North Carolina  
27606 USA

Phone / 919.387.4704

Fax / 919.387.5703

E-Mail / ahiscock@stone-env.com

**Pacific Office:**

529 Portobello Road  
Macandrew Bay  
Dunedin, New Zealand

Phone / 64.3.476.1305

Fax / 64.3.476.1985

E-Mail / chanson@stone-env.com

contamination. As a precautionary measure, a sample of the Braun drinking water was analyzed and found to be devoid of VOC contamination. The Brauns receive their water from a community bedrock well, located approximately 200 feet away and presumably upgradient (based on topography).

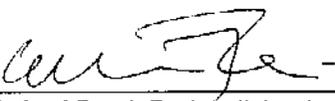
Since no samples were collected below 4 feet BGS in the area of the former UST and a reading of 60 ppm at 8 feet BGS was recorded at the time of the UST removal, this investigation did not determine the vertical extent of the contamination in the UST area nor did it assess the potential impact of this contamination on the groundwater. The effect of this contamination on sensitive receptors is also not known at this time; according to records at the Agency of Natural Resources Water Supply Division, there are several residential water supply wells in the immediate area of this site.

SEI proposes to perform a soil boring in the former UST area to determine whether a "significant amount" of contamination still exists at the water table and if so, collect and analyze a groundwater sample. Soil samples will be collected at two foot intervals or at depths where a change in stratigraphy is observed. A "significant amount" of contamination will be defined as any PID/soil headspace reading of 10 ppm or greater, as recommended in the State of Vermont's "Contaminated Soils and Debris" guidance document. If soil in the region of the water table is determined to be "significantly contaminated", a stainless steel well point will be inserted into the hole and a water sample will be collected using a slow purge (low stress) sampling method. The water sample will be analyzed for fuel related VOCs by EPA Method 8021B.

Once this follow up investigation is completed and the analytical results are received by SEI, a full site investigation report will be submitted to SMS. SEI is requesting that the Brauns be reimbursed from the State of Vermont's Petroleum Cleanup Fund for the fees (above the \$250 deductible for residential heating fuel USTs) required to perform this investigation. To date, the fee to perform these services is \$1200. The proposed follow-up investigation is estimated not to exceed to a maximum of \$1,344. If it is determined that no groundwater sample is required, the fee to perform these services is estimated at \$950. I have enclosed detailed fee justification sheets for this proposed work for your review. If you have any questions regarding this information, please call me. I look forward to hearing from you.

Sincerely yours,

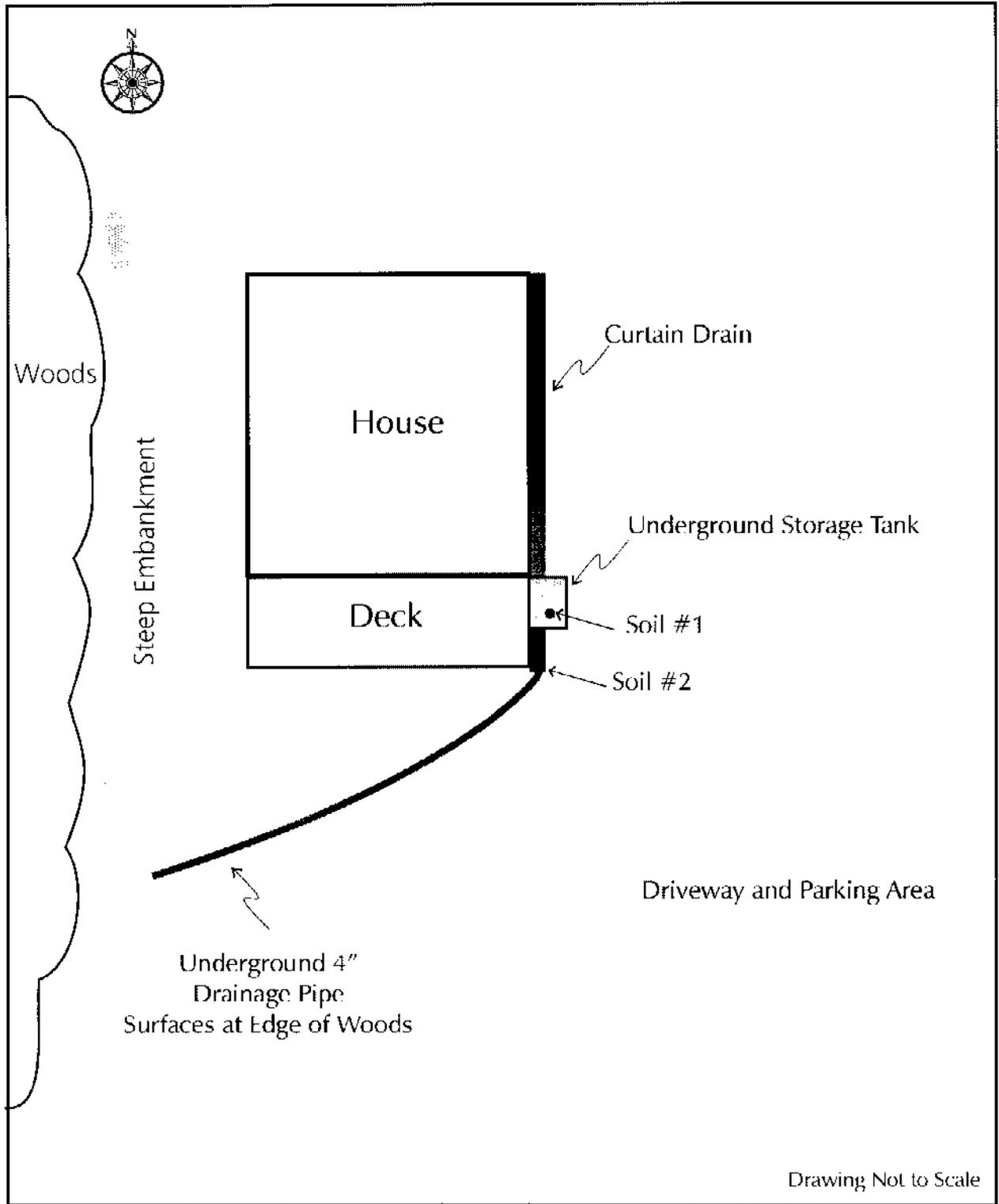
STONE ENVIRONMENTAL, INC.

  
\_\_\_\_\_  
Michael Rossi, Project Scientist

Direct Phone / 802-229-2194, Direct E-Mail / [mrossi@stone-env.com](mailto:mrossi@stone-env.com)

c.c.

Kathy Braun  
28 Hawk Pine Road  
Norwich, VT 05055



**FIGURE 1: SITE SKETCH**  
 Braun Residence  
 Norwich, Vermont

Source: Stone Environmental Field Investigations  
 J:\proj 98\98 830\figures\site.cdr  
 10-31-00 jms



**Appendix A**  
**Previous**  
**Correspondence**



RECEIVED  
7991090  
Mills/Just

August 18, 1998

Ms. Susan Thayer  
Vermont Agency of Natural Resources  
Dept. of Environmental Conservation  
Waste Management Division  
103 South Main Street  
Waterbury, Vermont 05671-0404

Re: Closure by Removal and Initial Site Characterization; One (1)- 500 gallon fuel oil Underground Storage Tank (UST); Braun Residence, 28 Hawk Pine Road, Norwich, Vermont.

Dear Ms. Thayer

On Tuesday, April 28<sup>th</sup>, 1998 personnel from CAB Services removed one (1)- 500 gallon fuel oil Underground Storage Tank (UST) from the above referenced property. CAB Services personnel excavated and exposed the UST as necessary to allow access to the tank proceeded to cut open and clean the tank interior of all residual fuel oil sludges. CAB then removed the tank from the ground and loaded it onto a truck for transportation off-site and disposal as scrap metal at Advanced Recycling in Rochester, NH. At the time of tank removal, several small holes were observed in the base of the tank carcass ranging in size from 1/2" - 1" in diameter.

The CAB Services on-site Foreman inspected the soil at the base of the excavation for any visible or olfactory signs of petroleum contamination. At the time, no significant visual or olfactory evidence of fuel oil contamination was observed in the tank excavation. However, a composite soil sample was collected of the soil at the base of the excavation for field screening purposes. This composite soil sample was field screened for the presence of Volatile Organic Compounds (VOCs) using a Photovac Photoionization Detector, Model 2020 which had been calibrated prior to screening with a 100 parts per million (ppm) Isobutylene Calibration Gas Mixture. The results of this field screening showed measurable levels of VOCs in the soil ranging from between 45ppm to 60 ppm.

The tank excavation area was backfilled with sand material due to the expected on-set of rainfall in the area. It was deemed necessary to backfill the excavation area in order to prevent the rain from creating further problems with any contamination present on-site.

Please contact our office at (603) 749-6355 if you have any questions or concerns regarding the information contained in this letter. Thank you very much for your patience and cooperation.

Cordially,

Allan D. Berry  
Coordinator, CAB Services

Encl:  
Underground Storage Tank Permanent Closure Form

NOV 24 1998

Cc:  
Ms. Kathleen Braun, 28 Hawk Pine Road, Norwich, Vermont 05055

**Environmental Evaluations**

*Tanks - Cleaning, Removal & Disposal*      *Spills - Cleanup, Prevention*  
*Ground Water Recovery & Monitoring*      *Pumping & Transportation - Liquids & Solids*

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P.O. Box 8, Dover, NH 03821-0008 - 24-Hour Service (603) 749-6355





## State of Vermont

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

AGENCY OF NATURAL RESOURCES  
Department of Environmental Conservation  
Waste Management Division  
103 South Main Street/West Office  
Waterbury, Vermont 05671-0404  
(802) 241-3888  
FAX (802) 241-3296

November 16, 1998

Ms. Kathleen Braum  
28 Hawk Pine Road  
Norwich, Vermont 05055

RE: Petroleum Contamination at Braum Residence  
Norwich, Vermont  
SMS Site # 98-2500

Dear Ms. Braum:

The Sites Management Section (SMS) has received the Underground Storage Tank (UST) closure report which outlines the subsurface conditions for the above referenced site. The fieldwork was conducted by C.A.B. Services on April 28, 1998. The report is dated August 18, 1998 and summarizes the degree and extent of contamination encountered. The USTs removed include:

- UST #1 - 500 gallon No.2 fuel oil UST

During the site activities, screened soils had concentrations up to 60 parts per million (ppm) as measured by a photoionization detector (PID). The limits of soil contamination were not defined. All soil was used for backfill at the conclusion of the UST removal program.

Site soils were unreported. Groundwater was unreported. The Braum Residence was not inspected for sensitive receptors. The possible receptors potentially affected include soil, groundwater, basements of adjacent buildings, nearby surface water, and public or private drinking water wells.

Based on the report information, the SMS has determined additional work is necessary to determine the severity of contamination. Due to possible contamination to nearby receptors, the SMS requests that Ms. Kathleen Braum retain the services of a qualified environmental consultant to perform the following:

- Further define the degree and extent of contamination to the soil.
- If appropriate, determine if the airspace beneath the site and site adjacent building(s) (e.g. basements) has been impacted by the release using a PID. Wall and floor construction and susceptibility to vapor migration should be noted. PID measurements should be made in cracks and/or joints likely impacted. If the airspace has been impacted, SMS requests confirmatory sampling and laboratory analyses be performed using EPA Method TO-2.
- Determine the degree and extent of contamination, if any, to groundwater. A sufficient number of monitoring sites should be installed to adequately define the severity of site contamination. Analyze groundwater samples for BTEX and TPH. At sites proximal to water supply sources, determine the hydrologic relationship of the contaminated area to the water supply source. Pumping influences should be considered in the evaluation.
- Assess the potential for contaminant impact on sensitive receptors. Base this update on all available information and include basements of adjacent buildings, nearby surface water, any proximal drinking

water sources, wetlands, sensitive ecologic areas, outdoor or indoor air, sewers, or utility corridors. Sample and analyze any at-risk water supplies for BTEX and TPH compounds.

- Determine the need for long-term treatment and/or monitoring that addresses groundwater contamination.
- Submit a summary report that outlines the work performed, as well as provides conclusions and recommendations. As appropriate include analytical data; a site map showing the location of any potential sensitive receptors, stockpiled soils and monitoring or sample locations; an area map; detailed well logs; and a groundwater contour map.
- With the Workplan or Expressway form, please submit a site location map at an approximate scale of 1:24000 showing the location of the site. Please include a scale, a north arrow, the SMS site number, and a citation of the source map. The purpose of this map is to enable the SMS to enter the site location into a Geographical Information Systems database.

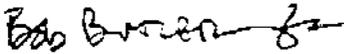
Please have your consultant submit a preliminary work plan and cost estimate or a site investigation expressway notification form within fifteen days of your receipt of this letter, so it may be approved prior to the initiation of onsite work. Enclosed please find a list of consultants who perform this type of work as well as the brochure "Selecting Your UST Cleanup Contractor," which will help you in choosing an environmental consultant.

Based on current information, the underground storage tanks at Braun Residence are eligible for participation in the Petroleum Cleanup Fund (PCF). You must provide written proof to the SMS that you hold no other applicable insurance in order to receive reimbursement from the PCF. The owner or permittee must pay for the removal and/or repair of the failed tank(s), and for the initial \$250.00 of the cleanup. The fund will reimburse the tank owner or permittee for additional eligible cleanup costs of up to \$1 million. All expenditures must be pre-approved by the Agency or performed in accordance with the "Site Investigation Guidance" expressway program. Please refer to the enclosed guidance document titled, "Procedures for Reimbursement from the Petroleum Cleanup Fund" for additional information concerning the PCF.

The Secretary of the Agency of Natural Resources reserves the right to seek cost recovery of fund monies spent at the Braun Residence site if the Secretary concludes that Ms. Kathleen Braun is in significant violation of the Vermont Underground Storage Tank Regulations or the Underground Storage Tank statute (10 V.S.A., Chapter 59).

We realize this may be a lot to absorb and respond to. We are here to help make this process as effective and uncomplicated as possible. Please review the enclosed documents and call me with any questions you may have. I can be reached at (802) 241-3876.

Sincerely,



Chuck Schwer, Supervisor  
Sites Management Section

Enclosures (3)

cc: Norwich Selectboard w/o enclosure  
Norwich Health Offices w/o enclosure  
DEC Regional Office w/o enclosure (transmitted electronically) ✓

CS:rgb  
H:\Myfiles\12500.wpd

December 4, 1998

Bob Butler  
Sites Management Section  
VT Dept. Of Environmental Conservation  
103 S. Main St. - West Office Bldg.  
Waterbury, VT 05671-0404



**STONE ENVIRONMENTAL INC**

*Main Office:*

58 East State Street  
Montpelier, Vermont  
05602 USA

Phone / 802. 229.4541

Fax / 802. 229.5417

E-Mail / [sei@stone-env.com](mailto:sei@stone-env.com)

Web Site / [www.stone-env.com](http://www.stone-env.com)

SEI No. 98-892

RE: Braun Residence, Norwich, VT Site # 98-2500

Dear Bob:

On behalf of Kathleen Braun, and as a followup to our recent telephone conversation, Stone Environmental Inc. (SEI) is proceeding with an Expressway Site Investigation in response to your November 16, 1998 letter request to Mrs Braun. As you will recall, that request was the result of a 500 gallon residential fuel oil UST removal report submitted by C.A.B. Services. My preliminary evaluation of the situation indicates that this site does not represent an imminent threat to human health or the environment despite the proximity of nearby water supplies.

Enclosed for your initial information, use , and files, are a copy of the signed Expressway Notification Form and the pertinent copies of the Braun's Homeowner Insurance policy. The latter clearly indicates that there is no insurance coverage for the requested UST investigation and reimbursement from the PCF will be sought.

Also enclosed is a copy of some maps prepared for the Hawk Pine Hills Water Company which serves the Braun residence. Additional information and analytical results will be included within the Site Investigation Report.

In the interim, please feel free to contact me with any questions or comments you may have.

Sincerely yours,

Stone Environmental, Inc.

John Amadon, CPSS  
Senior Geoscientist

enclosures:

cc: Kathleen Braun  
J:\Proc-98\98-892\120398ltr.wpd

**Southeast Regional Office:**

206 Langston Mill Court  
Raleigh, North Carolina  
27606 USA

Phone / 919. 387.4704

Fax / 919. 387.5703

E-Mail / [ahiscock@stone-env.com](mailto:ahiscock@stone-env.com)

**Pacific Office:**

24 Porterfield Street  
Macandrew Bay  
Dunedin, New Zealand

Phone / 64.3.476.1305

Fax / 64.3.476.1985

E-Mail / [hanson@earthlight.co.nz](mailto:hanson@earthlight.co.nz)



State of Vermont

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

AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation

Waste Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3888, FAX (802) 241-3296

SITE INVESTIGATION EXPRESSWAY NOTIFICATION FORM

Site Owner: Kathleen L. Braun
Site Name, Town: Braun residence, Norwich, VT 98-2500

- Yes, this site will participate in the Site Investigation Expressway Process.
No, this site will not participate in the Site Investigation Expressway Process.

If yes, please complete the checklist below:

- Contamination present in soils above action levels Yes No

If yes, summarize levels: 60 ppm (soil Pb)

- Free product observed Yes No
Groundwater contamination observed Yes No
Surface water contamination observed Yes No
Suspected release of hazardous substances Yes No

If yes, please explain: presence of fuel oil in soils

- Affected receptors Yes No

If yes, please identify receptors including names and addresses of third party receptors: not sure

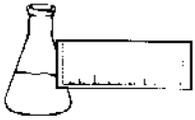
Please provide an estimated date of when you expect to submit Site Investigation Report: 12/30/98

Owner's Signature/Date: Kathleen Braun 12/2/98
Consultant's Signature/Date: John Ambrose

The SMS has reviewed this expressway notification form and approves / disapproves of this action.

SMS Signature/Date:

**Appendix B**  
**Analytical Results**



**ENDYNE, INC.**

**Laboratory Services**

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Stone Environmental, Inc.  
PROJECT NAME: SEI/98-892  
DATE REPORTED: December 17, 1998  
DATE SAMPLED: December 2, 1998

PROJECT CODE: STON1907  
REF. #: 132,316

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

Chain of custody indicated proper sample preservation.

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.

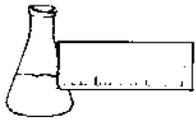
Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy 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.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures



**ENDYNE, INC.**

Laboratory Services

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

LABORATORY REPORT

TOTAL PETROLEUM HYDROCARBONS (TPH) BY MODIFIED EPA METHOD 8100

DATE: December 17, 1998  
CLIENT: Stone Environmental, Inc.  
PROJECT: SEI/98-892  
PROJECT CODE: STON1907  
COLLECTED BY: John Amadon  
DATE SAMPLED: December 2, 1998  
DATE RECEIVED: December 3, 1998

Reference #	Sample ID	Concentration (mg/kg) <sup>1</sup>
132,316	Soil Brawn; 11:00	TBQ <sup>2</sup>

Notes:

- 1 Values quantitated based on the response of #2 Fuel Oil. Method detection limit is 5.0 mg/kg.
- 2 Trace Below Quantitation Limit



user modified

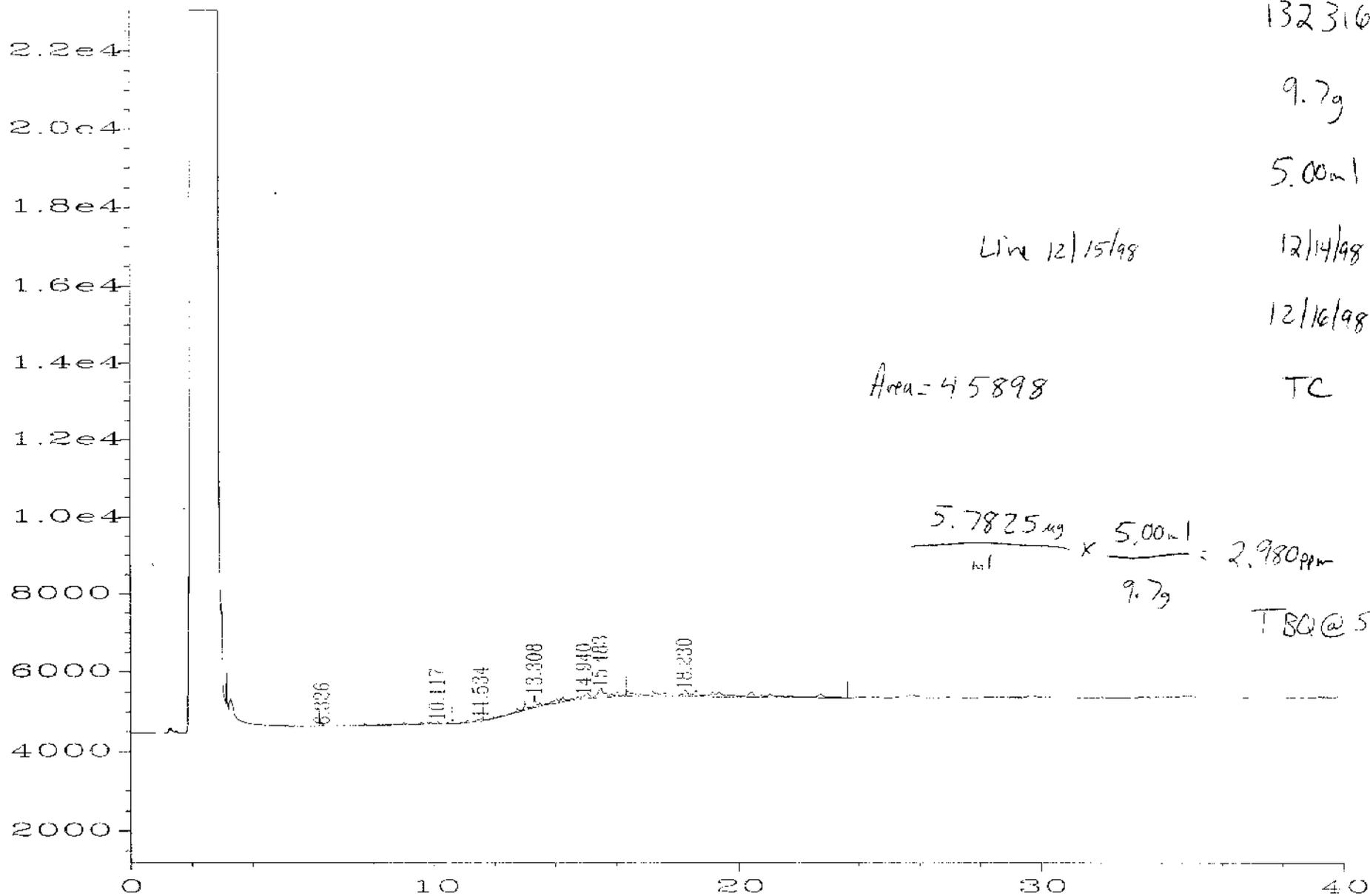
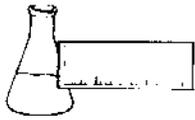


Fig. 1 in C:\NHP\CHEM\2\DATA\FID\12159833.D



**ENDYNE, INC.**

**Laboratory Services**

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

REPORT OF LABORATORY ANALYSIS

CLIENT: Stone Environmental  
PROJECT NAME: SEI 98-892  
DATE REPORTED: December 11, 1998  
DATE SAMPLED: December 2, 1998

PROJECT CODE: STON1906  
REF. #: 132,314 - 132,315

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

Chain of custody indicated soil preservation with Methanol and water 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 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 data was determined to be within Laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.  
Laboratory Director

enclosures



Laboratory Services

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

LABORATORY REPORT

EPA METHOD 8021B COMPOUNDS BY EPA METHOD 8260

CLIENT: Stone Environmental  
PROJECT NAME: SEI 98-892  
REPORT DATE: December 11, 1998  
DATE SAMPLED: December 2, 1998  
DATE RECEIVED: December 3, 1998  
ANALYSIS DATE: December 7, 1998

PROJECT CODE: STON1906  
REF.#: 132,314  
STATION: Soil-Brawn  
TIME SAMPLED: 11:00  
SAMPLER: John Amadon

<u>Parameter</u>	<u>Detection Limit (ug/kg)</u>	<u>Concentration (ug/kg)</u>
Benzene	10	ND <sup>1</sup>
Toluene	10	ND
Ethylbenzene	10	ND
Xylenes	20	ND
MTBE	20	ND
1,2,4-Trimethylbenzene	10	ND
1,3,5-Trimethylbenzene	10	ND
Naphthalene	50	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 1

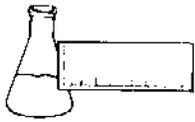
ANALYTICAL SURROGATE RECOVERY:

Dibromofluoromethane: 100. %  
Toluene-d8: 102. %  
4-Bromofluorobenzene: 97. %

PERCENT SOLIDS: 93. %

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 8021B COMPOUNDS BY EPA METHOD 8260

CLIENT: Stone Environmental  
PROJECT NAME: SEI 98-892  
REPORT DATE: December 11, 1998  
DATE SAMPLED: December 2, 1998  
DATE RECEIVED: December 3, 1998  
ANALYSIS DATE: December 7, 1998

PROJECT CODE: STON1906  
REF.#: 132,315  
STATION: Tap-Brawn  
TIME SAMPLED: 11:30  
SAMPLER: John Amadon

<u>Parameter</u>	<u>Detection Limit (ug/L)</u>	<u>Concentration (ug/L)</u>
Benzene	1	ND <sup>1</sup>
Toluene	1	ND
Ethylbenzene	1	ND
Xylenes	2	ND
MTBE	2	ND
1,2,4-Trimethylbenzene	1	ND
1,3,5-Trimethylbenzene	1	ND
Naphthalene	5	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

ANALYTICAL SURROGATE RECOVERY:

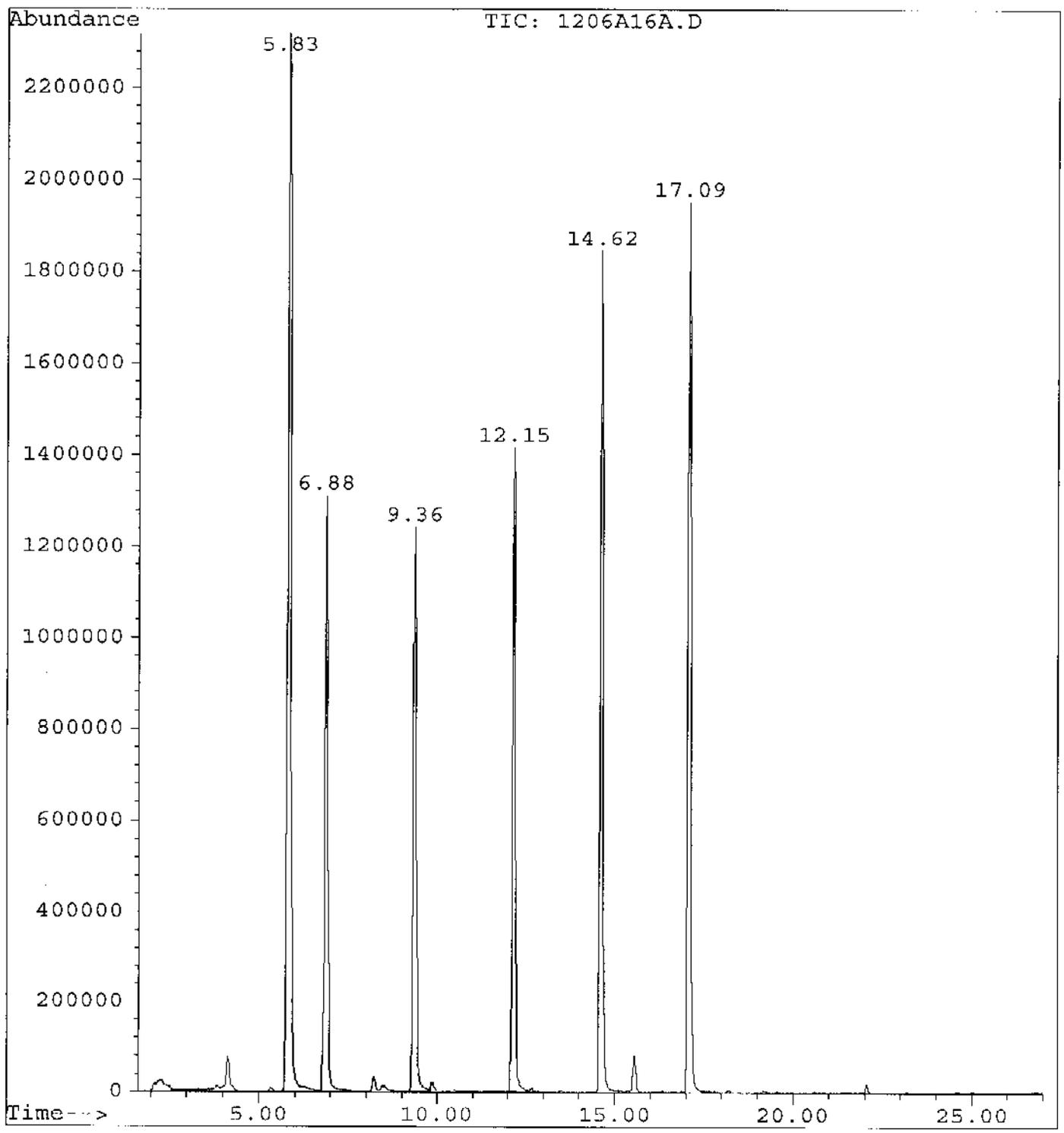
Dibromofluoromethane: 100. %  
Toluene-d8: 114. %  
4-Bromofluorobenzene: 94. %

NOTES:

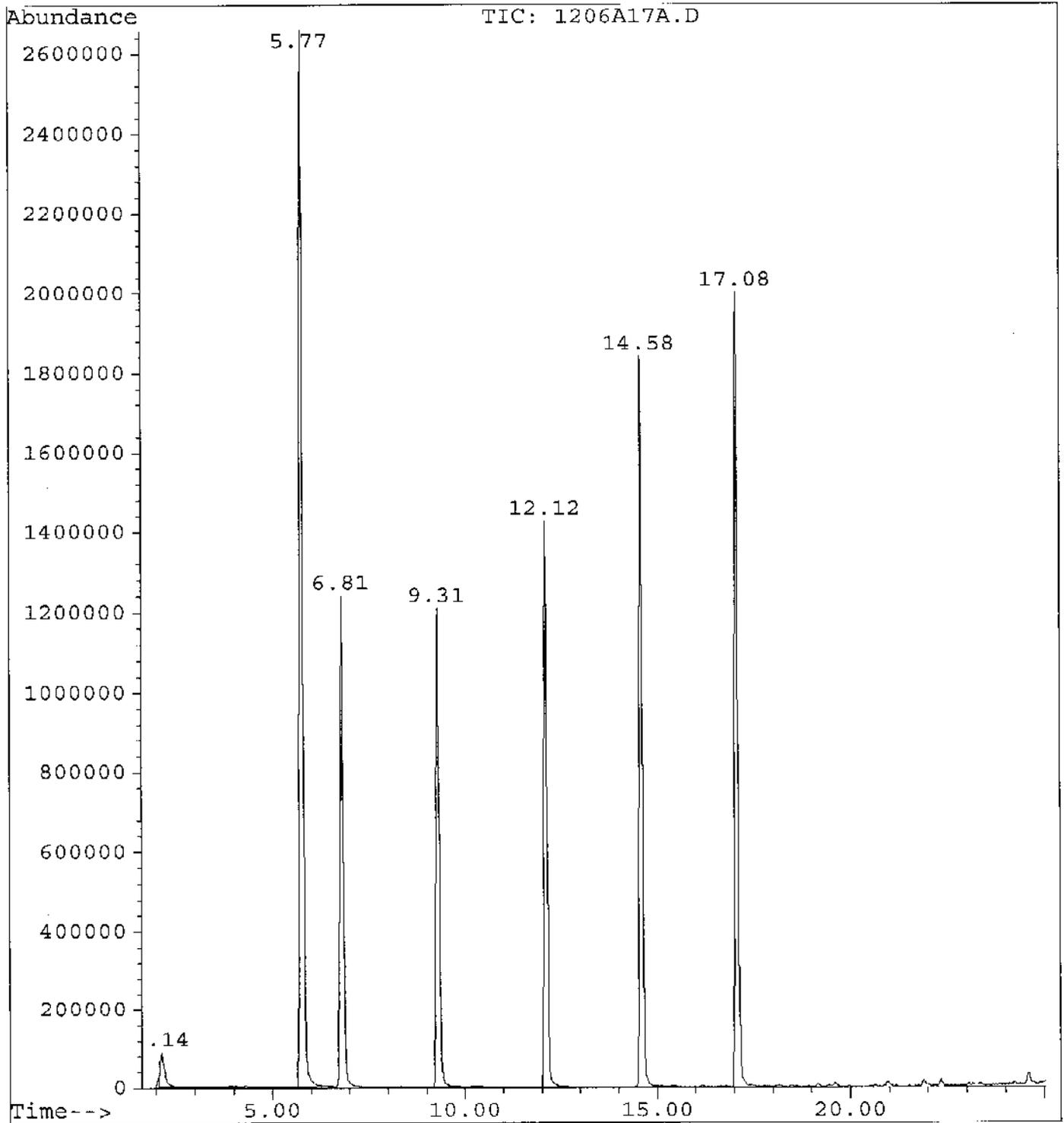
1 None Detected



File : 1206A16A.D  
Sample Name : 132314 100% 250ul 17.80g/10ml  
Current Method: 826-1205.M  
Instrument : MS 5970  
Acquired : 7 Dec 98 1:17 am  
Date of report: 12/07/98  
Operator : tc



File : 1206A17A.D  
Sample Name : 132315 100%  
Current Method: 826-1205.M  
Instrument : MS\_5970  
Acquired : 7 Dec 98 2:03 am  
Date of report: 12/07/98  
Operator : tc



**Appendix C**  
**Detailed Fee**  
**Justification Data**

Follow-Up Site Investigation

Braun Residence, DEC Site #2500, Norwich, VT

Stone Environmental Project Number: 98-892

Prepared on 10/30/00

DETAILED FEE JUSTIFICATION - With Groundwater Sampling and Analysis

PHASE	ITEM	RATE PER UNIT	UNITS	AMOUNT	SUBTOTAL	COMMENTS
1	<b>Startup and Mobilization</b>					
	Labor					
	Project Scientist	\$63 / hour	4	\$252		
	Env. Technician	\$42 / hour	4	\$168		
				<b>SUBTOTAL</b>	<b>\$420</b>	
2	<b>Soil Coring, Water Sampling and Analyses</b>					
	Labor					
	Project Scientist	\$63 / hour	3	\$189		
	Env. Technician	\$42 / hour	3	\$126		
	Expenses					
	PID	\$50 / day	1	\$50		
	YSI Meter and Flow Cell - for physicochemical parameters	\$50 / day	1	\$50		
	Cell Phone	\$20 / day	1	\$20		
Personal Protective Equipment	\$25 / day	0.5	\$13			
EPA 8021B - Volatile Organic Compounds	\$66 / ea	2	\$132			
				<b>SUBTOTAL</b>	<b>\$580</b>	One core to approximately 10 ft or top of water table. One water sample collected using well point.  Includes one groundwater and one trip blank analyses
4	<b>Reporting</b>					
	Labor					
	Project Scientist	\$61 / hour	4	\$252		
Senior Project Scientist	\$92 / hour	1	\$92			
				<b>SUBTOTAL</b>	<b>\$344</b>	
<b>PROJECT TOTAL</b>					<b>\$1,344</b>	

**Follow-Up Site Investigation**

**Braun Residence, DEC Site #2500 , Norwich, VT**

**Stone Environmental Project Number: 98-892**

**Prepared on 10/30/00**

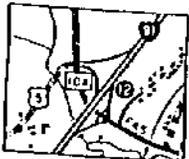
**DETAILED FEE JUSTIFICATION -Without Groundwater Sampling and Analysis**

PHASE	ITEM	RATE PER UNIT	UNITS	AMOUNT	SUBTOTAL	COMMENTS
1	<b>Startup and Mobilization</b>					
	Labor					
	Project Scientist	\$63 / hour	4	\$252		
	Env. Technician	\$42 / hour	4	\$168		
				<b>SUBTOTAL</b>	<b>\$420</b>	
2	<b>Soil Coring, Water Sampling and Analyses</b>					
	Labor					
	Project Scientist	\$63 / hour	2	\$126		
	Env. Technician	\$42 / hour	2	\$84		
	Expenses					
	MU	\$50 / day	1	\$50		
	YSI Meter and Flow Cell for physicochemical parameter	\$50 / day	0	\$0		
	Cell Phone	\$20 / day	1	\$20		
	Personal Protective Equipment	\$25 / day	0.5	\$13		
	EPA 8260 - Volatile Organic Compounds	\$138 / ea	0	\$0		
				<b>SUBTOTAL</b>	<b>\$293</b>	One core to approximately 10 ft or top of water table.
4	<b>Reporting</b>					
	Labor					
	Project Scientist	\$63 / hour	3	\$189		
	Senior Project Scientist	\$92 / hour	1	\$92		
				<b>SUBTOTAL</b>	<b>\$281</b>	
<b>PROJECT TOTAL</b>					<b>\$994</b>	

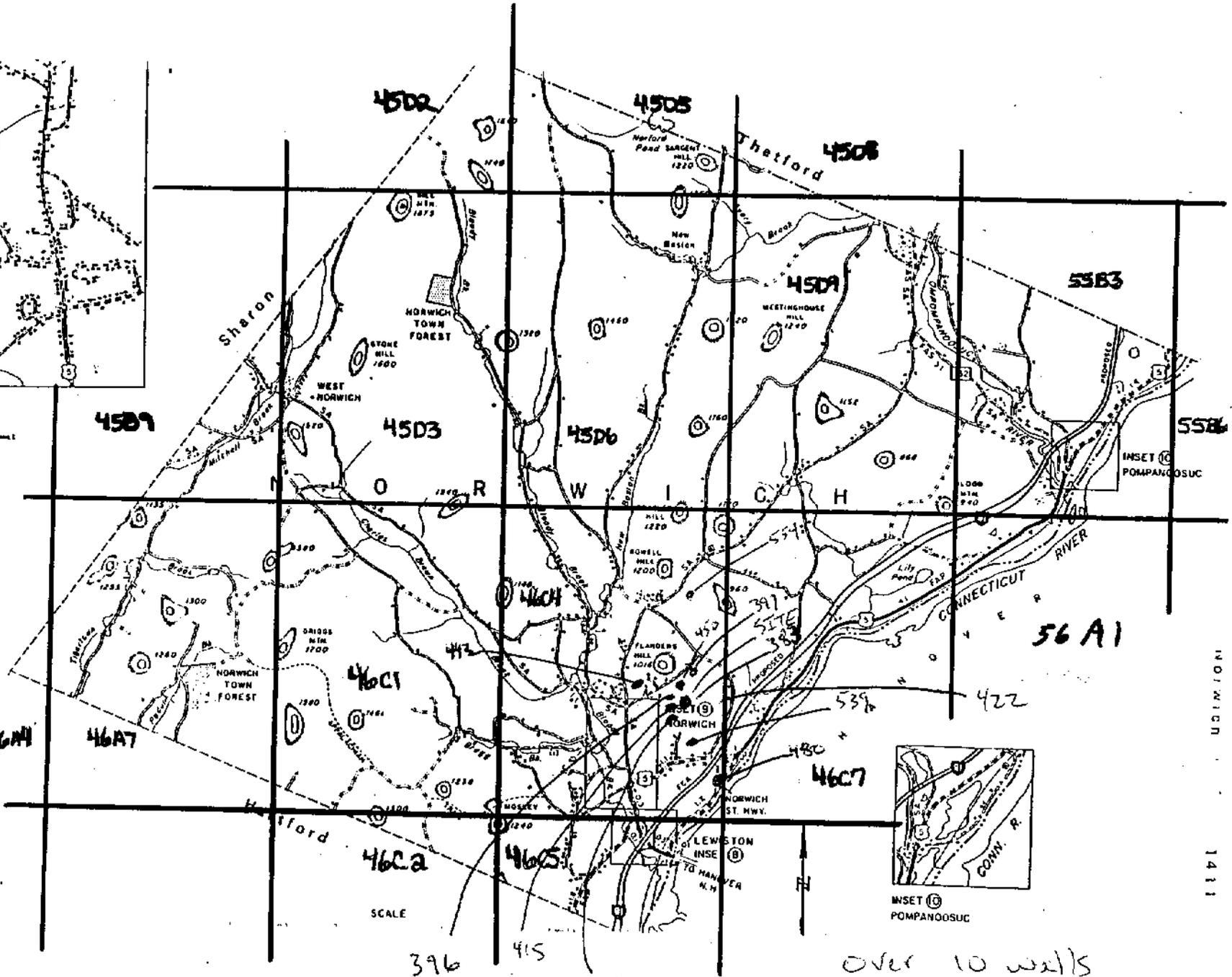
**Appendix D**  
**Receptor Analysis**  
**Data**



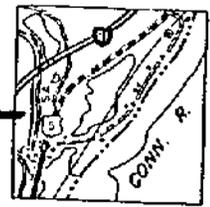
INSET ⑨  
NORWICH  
SCALE  
2 1/2 MILE



INSET ⑧  
LEWISTON



SCALE



INSET ⑩  
POMPAUNOSUC

NORWICH 1411

over 10 walls  
in immediate  
Area of site

Wells Drilled in the town of : Norwich

10/17/2000

Includes Well Completion Reports For Map Cell: 46C4

Rept #	Owner (if known) Or purchaser	Map Cell	Yield GPM	Total Depth (feet)	Depth Rock (feet)	Casing length (feet)	Static Water level	Date Drilled	Driller ID
3	GAUTHIER, FRANK	46C4	40.00	155.00	0.00	46.00	0.00	6/02/66	16
7	CHARMAN, ROBERT	46C4	100.00	280.00	0.00	22.00	0.00	5/11/67	26
8	HASTINGS, PAUL	46C4	5.00	60.00	0.00	20.00	12.00	5/15/67	26
10	ROBINS MAYER, ELIZABETH	46C4	25.00	620.00	0.00	142.00	45.00	8/19/67	54
12	CREWE, HAYWARD	46C4	4.00	96.00	0.00	54.00	0.00	8/23/67	26
14	HENNEBERGER, HENRY	46C4	35.00	428.00	0.00	20.00	0.00	8/02/68	26
29	JOHNSON, HENRY	46C4	18.00	110.00	0.00	48.00	0.00	9/10/69	6
30	PIETKIEWICZ, WESLEY	46C4	6.00	246.00	0.00	12.00	35.00	11/04/70	26
33	BRIDGES, LUCY	46C4	2.00	140.00	0.00	25.00	0.00	7/16/69	72
35	HOPPERSTEAD, LARRY	46C4	4.00	200.00	0.00	20.00	10.00	8/27/70	16
36	CHILDS, EDWARD	46C4	6.00	245.00	0.00	30.00	6.00	1/1	72
38	VERMONT, STATE OF,	46C4	20.00	37.00	0.00	17.00	6.00	12/01/71	32
40	MILLER, CHARLES	46C4	3.00	181.00	0.00	64.00	0.00	4/18/72	28
43	BARRETT, TRUMAN	46C4	20.00	308.00	0.00	20.00	50.00	9/28/72	54
44	HUGHIS, JAMES A.	46C4	5.00	348.00	0.00	21.00	65.00	8/18/72	6
57	FURST, CHARLES	46C4	2.00	205.00	0.00	20.00	18.00	6/11/74	16
60	SILBERFARB, PETER	46C4	35.00	225.00	0.00	105.00	28.00	8/26/74	118
63	FITZGERALD, DAVID	46C4	0.00	0.00	0.00	0.00	104.00	5/15/71	54
68	KOSAC, JEFF	46C4	30.00	145.00	0.00	79.00	0.00	1/02/75	118
71	BURCH, BENJAMIN	46C4	10.00	85.00	0.00	20.00	25.00	9/19/75	118
78	SHERWIN, ROBERT	46C4	14.00	225.00	0.00	80.00	15.00	10/03/75	118
82	GELBIN, ALLEN	46C4	20.00	130.00	0.00	49.00	28.00	2/10/76	6
90	CLAY, GARY	46C4	14.00	125.00	0.00	20.00	6.00	4/12/77	118
92	WATTS, MRS.	46C4	1.00	300.00	0.00	0.00	40.00	8/10/77	118
93	GREENBERG, ROBERT	46C4	12.00	105.00	0.00	60.00	35.00	9/02/77	118
94	SWIFT, DENZIL	46C4	2.00	205.00	0.00	20.00	6.00	9/15/77	118
100	KELLER, BRUCE	46C4	12.00	305.00	0.00	74.00	78.00	8/28/78	11
101	KELLER, BRUCE	46C4	17.00	245.00	0.00	121.00	0.00	8/30/78	11
102	EWASKIO, CHARLES	46C4	24.00	325.00	0.00	73.00	0.00	8/07/78	11
104	CARLETON, BUKK	46C4	6.00	400.00	0.00	70.00	25.00	11/16/78	54
106	BOWER, HUGH	46C4	60.00	240.00	0.00	40.00	10.00	10/23/78	33
107	HAWK MT. CORP.,	46C4	0.00	550.00	0.00	20.00	0.00	7/18/79	51
108	HAWK MT. CORP.,	46C4	30.00	325.00	0.00	20.00	75.00	7/13/79	51
109	SAMPLE, TIMOTHY	46C4	8.00	225.00	0.00	51.00	20.00	7/12/79	33
117	HAWK MT. CORP.,	46C4	2.00	370.00	0.00	20.00	70.00	10/30/80	51

Wells Drilled in the town of : Norwich

10/17/2000

Includes Well Completion Reports For Map Cell: 46C4

Rept #	Owner (if known) Or purchaser	Map Cell	Yield GPM	Total Depth (feet)	Depth Rock (feet)	Casing length (feet)	Static Water level	Date Drilled	Driller ID
118	HAWK MT. CORP. ,	46C4	7.00	280.00	0.00	31.00	15.00	11/05/80	51
123	GEOFFREY , OSCAR	46C4	0.00	445.00	0.00	40.00	0.00	6/01/80	16
124	GRAY , RAYMOND	46C4	20.00	200.00	0.00	20.00	0.00	3/01/80	16
125	STACEY , LEE	46C4	2.00	200.00	0.00	20.00	0.00	5/01/80	16
132	ECKER , JOAN	46C4	4.00	160.00	0.00	93.00	0.00	12/08/81	16
135	BLUMER , JACK	46C4	2.00	400.00	0.00	20.00	0.00	11/28/80	33
138	ASTLEY , GEORGE	46C4	9.00	75.00	0.00	15.00	17.00	6/13/81	167
139	LYONS , JOHN	46C4	15.00	400.00	0.00	95.00	40.00	4/15/81	16
144	HAWK MT. CORP. ,	46C4	2.00	370.00	0.00	20.00	5.00	6/08/81	51
145	HAWK MT. CORP. ,	46C4	5.00	325.00	0.00	61.00	15.00	6/04/81	51
146	SENSENING , KEN	46C4	0.00	405.00	0.00	40.00	0.00	5/26/81	33
147	SENSENING , KEN	46C4	6.00	185.00	0.00	20.00	2.00	5/27/81	33
154	CHILDS , ED	46C4	4.00	315.00	0.00	27.00	0.00	10/20/80	121
155	YOUNG , BILL	46C4	20.00	120.00	0.00	33.00	0.00	9/23/80	121
156	SHELDON , JOHN	46C4	6.00	120.00	0.00	34.00	0.00	9/23/80	121
159	IRELAND , PETER	46C4	0.00	300.00	0.00	30.00	0.00	10/20/80	121
162	JOHNSON , POLLY	46C4	30.00	180.00	0.00	21.00	20.00	6/08/82	16
167	SMITH , BARRY	46C4	60.00	280.00	10.00	21.00	0.00	5/10/83	16
171	HAWK MT. CORP. ,	46C4	30.00	280.00	0.00	17.00	0.00	5/31/83	16
172	ROBEY , PETER	46C4	3.00	280.00	0.00	45.00	0.00	8/15/83	16
173	SPATER ,	46C4	2.00	260.00	0.00	67.00	0.00	8/17/83	16
174	STUCKER , RICHARD	46C4	1.00	360.00	0.00	21.00	0.00	8/30/83	16
175	SAMPLE , TIM	46C4	15.00	220.00	0.00	41.00	0.00	8/31/83	16
176	PARKER , WORTH	46C4	8.00	200.00	0.00	21.00	0.00	9/12/83	16
181	CARROLL , CHRIS	46C4	12.00	160.00	0.00	20.00	0.00	12/30/83	16
188	PARKER , WORTH	46C4	30.00	475.00	0.00	20.00	0.00	1/26/84	16
190	EARTH WORKS ,	46C4	45.00	85.00	0.00	80.00	0.00	4/04/84	16
191	Morancy , Michael	46C4	10.00	260.00	0.00	135.00	0.00	5/03/84	16
193	VOLINSKY , JAMES	46C4	45.00	80.00	0.00	24.00	0.00	5/14/84	16
197	WHITE , ROBERT	46C4	0.00	400.00	0.00	19.00	0.00	8/17/84	16
198	PORTER & SONS , GEORGE	46C4	2.00	360.00	0.00	20.00	0.00	8/30/84	16
204	DYE , CHRIS	46C4	20.00	200.00	0.00	25.00	0.00	7/23/84	121
209	VOLINSKY , JIM	46C4	3.00	205.00	0.00	40.00	0.00	5/10/85	33
210	PERKINS , ROBERT	46C4	12.00	150.00	0.00	47.00	0.00	4/29/85	16
212	Noonan , Charles	46C4	15.00	200.00	0.00	20.00	0.00	6/17/85	16

Wells Drilled in the town of : Norwich

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Rept #	Owner (if known) Or purchaser	Map Cell	Yield GPM	Total Depth (feet)	Depth Rock (feet)	Casing length (feet)	Static Water level	Date Drilled	Driller ID
213	Noonan, Charles	46C4	20.00	240.00	0.00	20.00	0.00	6/18/85	16
217	Northern Energy Homes,	46C4	1.00	460.00	0.00	18.00	0.00	12/08/85	16
219	Sahlam, William	46C4	10.00	240.00	0.00	22.00	0.00	/ /	16
221	Brothers, Thomas	46C4	3.00	240.00	0.00	20.00	0.00	/ /	16
224	Badgley, Peter	46C4	30.00	200.00	0.00	41.00	0.00	8/21/85	16
225	MARSH, CLIFTON	46C4	1.00	280.00	0.00	71.00	5.00	9/10/85	121
235	REMINGTON, STEVE	46C4	30.00	90.00	0.00	52.00	0.00	8/05/85	167
238	Essex - Contractor, John	46C4	1.00	300.00	0.00	64.00	0.00	11/15/85	121
243	FORCIER, JIM	46C4	3.00	465.00	0.00	71.00	0.00	6/24/86	121
245	Walden, Inc., R.	46C4	7.00	185.00	0.00	30.00	0.00	8/29/86	121
248	Zuba & Greenberg - Builders,	46C4	6.00	222.00	0.00	37.00	0.00	8/27/86	213
251	SMITH, JAMES	46C4	4.00	205.00	0.00	20.00	20.00	10/16/86	33
268	CLIFFORD, KEITH	46C4	1.00	420.00	0.00	60.00	20.00	12/17/86	206
271	Jaffe, Joan	46C4	3.00	260.00	0.00	71.00	0.00	12/26/86	16
281	SMITH, DAN	46C4	8.00	285.00	0.00	30.00	0.00	10/21/87	121
283	Walden, Inc., R.	46C4	6.00	265.00	0.00	19.00	0.00	6/11/87	121
286	Laing Construction,	46C4	3.00	300.00	0.00	21.00	0.00	9/17/87	16
287	Goodwich, Morgan	46C4	4.00	440.00	0.00	85.00	0.00	10/16/87	16
293	CLIFFORD, KEITH	46C4	0.00	660.00	0.00	40.00	18.00	9/17/87	206
295	Hastings Builders,	46C4	2.00	300.00	0.00	42.00	20.00	12/22/87	16
296	Beattie, Elizabeth	46C4	20.00	300.00	0.00	20.00	0.00	2/29/88	16
297	Sita Construction Company,	46C4	3.00	300.00	0.00	20.00	20.00	3/03/88	16
298	Ostien, Dennis	46C4	30.00	200.00	0.00	50.00	0.00	3/01/88	16
299	Paull, James	46C4	2.00	500.00	0.00	20.00	150.00	2/23/88	16
302	Porter, Robert/Elizabeth	46C4	30.00	860.00	0.00	20.00	0.00	7/13/88	121
311	Sita Construction Co.,	46C4	1.00	460.00	0.00	74.00	0.00	8/24/88	16
315	Volinsky, James	46C4	15.00	200.00	0.00	30.00	0.00	8/09/88	16
318	Aldrich and Associates,	46C4	1.00	400.00	0.00	22.00	30.00	8/11/88	16
319	Hastings Builders,	46C4	10.00	200.00	0.00	21.00	20.00	8/01/88	16
321	Hastings Bldrs.,	46C4	30.00	300.00	0.00	20.00	0.00	3/09/88	16
322	Kelly, Larry	46C4	1.00	500.00	0.00	20.00	100.00	5/04/88	16
330	Rothstein, Doctor	46C4	2.00	300.00	0.00	20.00	26.00	9/13/88	167
333	Estes and Gallup,	46C4	2.00	400.00	0.00	30.00	30.00	10/25/88	16
335	Douglas Gest Restoration,	46C4	1.00	500.00	0.00	20.00	35.00	11/29/88	16
336	Sita Construction,	46C4	3.00	300.00	0.00	21.00	20.00	12/10/88	16

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337	Volinsky , James	46C4	40.00	300.00	0.00	21.00	0.00	12/14/88	16
339	Spec House ,	46C4	2.00	297.00	0.00	31.00	15.00	7/15/88	213
342	Keller , Bruce	46C4	6.00	300.00	0.00	42.00	45.00	8/31/88	206
343	Hastings Bldrs ,	46C4	20.00	140.00	0.00	20.00	0.00	3/25/89	16
345	Lange Const. ,	46C4	6.00	220.00	0.00	20.00	20.00	7/27/87	16
347	Hastings , Richard	46C4	3.00	300.00	0.00	20.00	0.00	7/25/87	16
349	Porter and son , George	46C4	15.00	120.00	0.00	20.00	15.00	6/19/87	16
350	Hastings , Richard	46C4	3.00	300.00	0.00	21.00	0.00	5/20/87	16
352	Gurvin , Marvin	46C4	40.00	300.00	0.00	50.00	20.00	5/09/87	16
353	Laing Construction ,	46C4	15.00	120.00	0.00	20.00	30.00	6/02/87	16
359	Ennis Construction ,	46C4	12.00	305.00	0.00	20.00	0.00	5/01/89	121
364	Reginoie , Mike	46C4	8.00	400.00	0.00	54.00	0.00	5/23/89	164
374	Volinsky , James	46C4	10.00	220.00	0.00	20.00	19.00	9/28/89	16
379	Sita Construction ,	46C4	6.00	280.00	0.00	30.00	60.00	11/02/89	16
382	Bay-son Company ,	46C4	20.00	120.00	0.00	34.00	0.00	11/17/89	16
383	Volinsky , James	46C4	1.00	400.00	0.00	38.00	15.00	12/21/89	16
385	Rowell , Charles	46C4	40.00	200.00	0.00	32.00	0.00	1/11/90	16
386	Sita Const. ,	46C4	15.00	500.00	0.00	0.00	175.00	1/17/90	16
396	Volinsky , James	46C4	2.00	300.00	0.00	37.00	20.00	6/15/90	16
397	Paul , Jim	46C4	7.00	600.00	0.00	20.00	0.00	6/13/90	121
398	Trachier - Builders , Roger	46C4	30.00	245.00	0.00	20.00	0.00	5/08/90	121
406	Cantwell , Frank	46C4	7.00	140.00	0.00	50.00	0.00	6/21/90	164
408	Volinsky , James	46C4	1.00	360.00	0.00	40.00	40.00	10/24/90	16
412	Kelly , William	46C4	8.00	280.00	0.00	20.00	10.00	12/12/90	16
414	Shaw , Gale	46C4	15.00	305.00	0.00	20.00	8.00	6/13/91	33
415	Smith , Dan	46C4	20.00	200.00	0.00	42.00	2.00	6/04/91	16
422	Alexander , Paul	46C4	2.00	334.00	0.00	334.00	24.00	6/13/91	167
426	Loveland Builders ,	46C4	12.00	305.00	0.00	80.00	0.00	12/27/91	121
427	Brooks , Blair	46C4	0.00	655.00	0.00	20.00	0.00	12/23/91	121
428	Smith , Dan	46C4	2.00	305.00	0.00	70.00	0.00	1/02/92	121
435	Cook , Dan	46C4	3.00	200.00	0.00	20.00	14.00	11/11/91	167
439	Copeland , Hans	46C4	8.00	240.00	0.00	20.00	12.00	8/08/92	16
442	Energy Shield ,	46C4	3.00	405.00	0.00	20.00	0.00	11/02/91	121
444	Drowne , Peter	46C4	20.00	200.00	0.00	30.00	10.00	8/10/92	16
448	Old Hampshire Design ,	46C4	4.00	305.00	0.00	20.00	0.00	5/12/93	121

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450	Energy Shield,	46C4	2.00	485.00	0.00	20.00	20.00	1/05/93	121
456	Henry, Dr. John	46C4	15.00	220.00	0.00	50.00	0.00	1/13/93	16
465	Florsk, John	46C4	2.00	420.00	0.00	21.00	40.00	9/16/93	16
469	McGovern, Paul	46C4	18.00	160.00	0.00	70.00	0.00	8/18/93	16
476	VITT, GEOFFREY	46C4	2.00	497.00	0.00	0.00	0.00	8/19/93	213
480	Cook, Inc., L.H.	46C4	0.00	600.00	0.00	20.00	50.00	12/29/93	16
482	Griggs, Tom	46C4	0.00	260.00	0.00	60.00	15.00	12/22/93	16
490	BRITTON, DOUGLAS	46C4	20.00	260.00	0.00	42.00	20.00	8/18/94	16
504	OHARA, ALBEE	46C4	12.00	345.00	0.00	60.00	0.00	8/17/94	121
508	JAMES, DR. DOUGLAS	46C4	15.00	305.00	0.00	20.00	0.00	6/15/94	121
539	BREADLOAF CONSTRUCTION,	46C4	50.00	165.00	0.00	30.00	0.00	6/21/95	121
544	TIBITTS, CINDY & SONNY	46C4	12.00	125.00	0.00	20.00	15.00	9/11/95	33
545	CONNER, JOHN	46C4	2.00	405.00	0.00	80.00	0.00	9/12/95	33
548	GRIGGS, KELLEY & DIANNE	46C4	2.00	405.00	0.00	60.00	15.00	9/30/95	33
549	THOMAS, GORDY	46C4	6.00	305.00	0.00	60.00	6.00	10/17/95	33
554	Davis, Robin & Tom	46C4	6.00	200.00	0.00	60.00	20.00	12/06/95	16
4,958	Rostad, Hugh	46C4	30.00	140.00	0.00	51.00	5.00	10/03/97	16
5,528	Housewright Construction,	46C4	5.00	265.00	12.50	20.00	55.00	10/29/97	33
5,797	Wallis, Iain M	46C4	10.00	200.00	0.00	40.00	20.00	12/24/97	16
5,954	KELLER, BRUCE	46C4	6.00	163.00	0.00	60.00	7.50	10/03/96	167
6,776	Hunt, Bob/Beverly	46C4	6.00	205.00	13.50	60.00	3.00	6/18/98	33
7,055	GREEN III, WILLIAM	46C4	2.00	500.00	20.00	35.00	40.00	9/09/98	16
7,474	Rostad, Hugh	46C4	2.00	500.00	36.00	40.00	100.00	9/29/98	16
8,326	ARMSTRONG, CHARLIE	46C4	75.00	360.00	14.00	140.00	20.00	2/11/99	16
8,327	STUCKER, RICHARD	46C4	4.00	445.00	12.00	20.00	0.00	8/13/98	121
8,328	BEIBEL, PAUL	46C4	3.00	465.00	12.00	72.00	0.00	8/10/98	121
8,636	Griggs, Kimo	46C4	5.00	465.00	0.00	20.00	70.00	9/09/98	33
9,751	Hanlon, Mr	46C4	0.00	505.00	0.00	20.00	0.00	8/24/98	121
10,924	Rodriguez Construction, Z	46C4	8.50	225.00	0.00	40.00	0.00	10/09/99	16
12,055	Cauro, John	46C4	2.50	385.00	0.00	60.00	0.00	9/29/99	121