Remedial Progress Report
Londonderry Citgo
Londonderry, Vermont

VT DEC SITE NO. 96-2015

April 2005 - September 2005

Prepared For:

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EXECUTIVE SUMMARY

This report summarizes the progress of remedial efforts at Londonderry Citgo that includes monitoring at the Mountain Marketplace shopping center and nearby residential properties, located in Londonderry Center, Vermont. This work was conducted by Environmental Compliance Services, Inc. (ECS) for Rice Oil Company during the period of April 2005 through September 2005. Activities that took place during this reporting period include: quarterly sampling (June and September 2005) of nearby bedrock aquifer supply well treatment systems, semi-annual overburden aquifer groundwater sampling (September 2005), and the operations and maintenance of the air sparging and soil vapor extraction (AS/SVE) system. Activities and findings from the June 2005 quarterly treatment system sampling were summarized in a separate report dated September 2005 entitled "*Quarterly Treatment System Monitoring Letter Report*". ECS findings during this report period are summarized as follows:

- Results indicate that residual gasoline related volatile organic compound (VOC) contamination is still present within the surficial and bedrock aquifer. The bedrock aquifer is used as a drinking water source by the Mountain Marketplace shopping center and nearby residential properties

- Tightness testing was conducted on the Londonderry Citgo underground storage tank (UST) system in September 2005, as recommended by ECS. The tightness testing was recommended due to spikes in photoionization detector (PID) readings at specific SVE legs which were attributed to possible vapor leaks from the UST system. The results of the test indicated that the system passed all criteria and there were no detection of leaks at any of the UST system components or fittings.

- The Vermont Groundwater Enforcement Standard (VGES) for at least one petroleum hydrocarbon continue to be exceeded in site monitoring wells MW-8, SP-1, SP-2, and SP-3. The gasoline additive methyl tert butyl ether (MTBE) continues to be detected in monitoring wells MW-7, MW-8, SP-1, SP-2, and SP-3.

- As recommended by ECS, prior to the quarterly June 2005 sampling event, a new treatment system for the Mountain Marketplace main supply well was installed because the previous treatment system was ineffective in preventing carbon filtration breakthrough of MTBE.

- Analytical results from the September 2005 site visit indicate that VOCs, benzene, MTBE, tert amyl methyl ether, and isopropyl benzene were detected in the Mountain Marketplace's main drinking water supply well treatment system samples.

- VOCs continue to be detected in samples collected from the Mountain Marketplace's supply well's influent, and mid-carbon series samples. With the exception of isopropyl benzene detected at 0.6 micrograms per liter (µg/L) (which is slightly over the laboratory detection limit of 0.5 µg/L), no VOCs have been detected in system effluent samples from the June and September 2005 quarterly sampling events, suggesting the new system is more effective at removing VOCs that the previous system.

- MTBE was detected in the abutting Thorne-Thomsen residence treatment system influent samples (T-T Inf) and (T-T Mid Carbon). The treatment system influent sample VOC concentrations exceed the Vermont Health Advisory (VHA) level of 40 µg/L. No VOCs were detected in samples from the system effluent sample (Thorne Thomsen Eff).

EXECUTIVE SUMMARY

- MTBE was detected in the Roger's supply well during the June 2005 quarterly and the 2 September 2005 sampling events at concentrations of 6.0 µg/L and 4.4 µg/L respectively, which are below the Vermont Health Advisory of 40 µg/L.

- An estimated 53 pounds of gasoline mass was recovered from the subsurface by the AS/SVE System between 29 March 2005 and 2 September 2005, bringing the total gasoline mass recovered since January 1999 to approximately 578 pounds. Estimated mass-recovery rates during this reporting period ranged from 0.358 to 0.811 pounds per day (lbs./day). These data represent a continued increase in mass removal rate.

- During the September 2005 AS/SVE system check, the SVE portion of the system was down upon arrival. It was determined upon inspection that the blower motor of the SVE had seized and would need repair or replacement.

- The SVE portion of the system was operational approximately 83 percent of the time during this reporting period. The AS portion of the system was operational approximately 50 percent of the time. The AS/SVE system is currently not operational.

Based on the above findings, it is the opinion of ECS that the site does not meet the criteria for a Site Management Activity Completion designation, and that continued monitoring is required until no VGES exceedences are noted at down gradient compliance wells and surrounding supply wells. ECS recommends the following:

1. To fill in data gaps and further define the lateral and vertical extent of the subsurface contamination, three additional onsite monitoring wells should be installed, and MW-4 should be replaced. The additional monitoring wells should be installed in the following locations: one a few feet north of SP-1, one a few feet southwest of SP-2, one directly 50 feet east of the location of the former MW-4. This data would be used to evaluate further remedial efforts at the site.

2. Groundwater sampling and analysis of all onsite monitoring wells should continue on a semi-annual basis, with the next groundwater monitoring event to take place March 2006.

3. The nearby residential supply wells within the 500 ft radius of the site should continue to be monitored annually, with the next sampling event to be conducted in March 2006. The residences that are within the 500 ft radius of the contaminant source include: Gordon, Rowley, the Second Congregational Church properties, and the Abbott residence.

4. Quarterly sampling of nearby supply well treatment systems of the Thorne-Thompsen residence, Mountain Market, and Roger's supply well should continue with the next sampling event to be conducted in December 2005.

5. The SVE blower should be replaced / repaired and the SVE system should be restarted given the continued mass recovery. Remediation system checks and maintenance should continue to be conducted on a monthly basis. Based on the results of the proposed data gap investigation the AS/SVE system may need to be expanded or an alternative remedial system may be more cost effective at removing residual contamination such as oxygen injection.

1.0 INTRODUCTION

This report details the results of site remediation and monitoring at Londonderry Citgo, located at the intersection of Vermont Routes 11 and 100 South in the town of Londonderry, Vermont (Figure 1) during March 2005 through September 2005. This report has been prepared by Environmental Compliance Services, Inc. (ECS) under the direction of Mr. Gary Thurston, of Rice Oil Company.

Marin Environmental (Marin) conducted an initial site investigation in the Fall of 1996, after gasoline compounds were identified in three bedrock supply wells located near the Londonderry Citgo (Figure 2). The results of the initial site investigation suggested that gasoline had been released in the vicinity of the underground storage tank (UST) system at the Citgo station. The release or releases appeared to have impacted the nearby bedrock supply wells, and posed a risk of contamination to other supply wells, Utley Brook located approximately 200 feet northeast of the Citgo station, and the West River located approximately 400 feet south of the Citgo station.

Historical groundwater analytical results indicate that the overburden aquifer beneath the site is contaminated with gasoline compounds. The Vermont Groundwater Enforcement Standards (VGESs) for several volatile organic compounds (VOCs) have been exceeded in the groundwater sample collected from monitoring well MW-2, located approximately 20 feet south of the pump island. Methyl-tertiary butyl ether (MTBE) has also repeatedly been detected at concentrations above the VGES at MW-S2, which is located approximately 220 feet downgradient of the former UST system.

Groundwater from the bedrock aquifer is the sole source of drinking water for the site and surrounding properties. Eighteen individual bedrock supply wells are located within 1,000 feet of the site. Analytical results of samples collected from the adjacent supply wells in November 1996 indicated that five shallow bedrock supply wells near the site were contaminated with gasoline compounds: two on-site supply wells and three off-site supply wells. One on-site and one off-site well — the shopping center's main supply well and the Thorne-Thomsen residential well, contained benzene at concentrations that exceeded the VGES of 5 micrograms per liter (µg/L), as well as detectable levels of MTBE.

In May 1998, the Vermont Department of Environmental Conservation (VTDEC) approved Marin's Corrective Action Plan (CAP) for the site, which recommended air sparging and soil vapor extraction (AS/SVE) at the source area, with the continued operation of point-of-use carbon treatment systems at the shopping center's main supply well and the Thorne-Thomsen residential well. Installation of the subsurface components of the remediation system was completed in May 1998, construction of the treatment shed was completed in August 1998, and the system started operation in January 1999.

The AS/SVE system operated intermittently until it was shut down September 2000 when mass removal rates decreased to asymptotic levels. Since system shutdown, groundwater VOC concentrations have rebounded in wells primarily limited to the former UST source area, and an area immediately west of the pump island. The remedial system was restarted after system evaluation and trouble shooting on February 18, 2004, and has been in operation with some down time due to some mechanical failures.

2.0 SCOPE OF WORK

The work completed during this report period involved the following activities:

- Collection and submittal of groundwater samples from the on-site monitoring wells for laboratory analysis of VOCs and by EPA method 8021B list of VOCs, on 2 September 2005;

- Collection and submittal of quarterly supply well samples from the Roger's residence, Thorne-Thomsen treatment system, and the treatment system installed at the Mountain Market Place main supply well for laboratory analysis of VOCs;

- Monthly operations and maintenance of the AS/SVE system;

- Preparation of this summary report, which details the work performed, and provides conclusions and offers recommendations for further action.

3.0 INVESTIGATIVE PROCEDURES AND RESULTS

3.1 DETERMINATION OF GROUNDWATER FLOW DIRECTION AND GRADIENT

On 2 September 2005, groundwater in the unconfined surficial aquifer directly beneath the site continued to be flowing in a southerly direction, toward the West River, with an average horizontal hydraulic gradient of about 3.5 percent. Water-level measurements and elevation calculations for 2 September 2005 are presented in Table 1. The groundwater contour map presented as Figure 3 was prepared using these data.

The depth to water in the unconfined surficial aquifer during the September 2005 event varied from 8.65 feet (MW-3) to 10.88 feet (MW-7) below top-of-casing (TOC). Static water-table elevations were computed for each monitoring well by subtracting the measured or corrected depth-to-water readings from the surveyed top-of-casing elevations, which are relative to an arbitrary site datum of 100.00 feet.

3.2 MONITORING WELL SAMPLING AND ANALYSIS

Groundwater analytical results of samples collected from water-table monitoring wells indicate that the unconfined surficial aquifer beneath the site remains contaminated with gasoline compounds. During the 2 September 2005 semi-annual sampling event, the VGES[1] was exceeded for benzene and MTBE in SP-1 through SP-3, for 1,3,5 trimethyl benzene in monitoring wells SP-2 and SP-3, for 1,2,4 trimethyl benzene in monitoring wells MW-8, SP-1, SP-2, and SP-3, and for Napthalene in monitoring wells SP-3. MTBE was detected at levels below VGESs in monitoring wells MW-S2, MW-S3, MW-7, and MW-8. VOCs were not detected in samples collected from monitoring wells MW-3 through MW-6, during this sampling event. It should be noted that wells SP-1, SP-2, and SP-3 are actually sparge wells also used as groundwater monitoring purposes.

A contaminant distribution map for the 2 September 2005 monitoring well sampling event is presented as Figure 4a and 4b. The analytical results for groundwater samples are summarized on Table 2 and on the time-series graphs in Figures 5 through 16. Laboratory report forms are included in Appendix A.

3.3 ROGER'S RESIDENCE SUPPLY WELL SAMPLING AND ANALYSIS

Following the detection of MTBE at a concentration of 22.1 µg/L in the Roger's bedrock supply well during the March 2004 annual residential supply well sampling, quarterly sampling has been implemented.

MTBE was detected in the June 2005 quarterly and the 2 September 2005 sampling events at concentrations of 6.0 µg/L and 4.4 µg/L respectively, which are below the Vermont Health Advisory of 40 µg/L. MTBE concentrations have steadily decreased since March 2004. No other VOC's were detected since the March 2004 MTBE appearance, with the exception of the detection of benzene during the June 2004 quarterly sampling event at a concentration of 1.4 µg/L

[1]The Vermont Department of Environmental Conservation (VT DEC) has established Groundwater Enforcement Standards (VGESs) for eight petroleum related VOCs, as follows: benzene - 5 µg/L; toluene - 1,000 µg/L; ethylbenzene - 700 µg/L; Total Xylenes - 10,000 µg/L; MTBE, a gasoline additive, - 40 µg/L; 1,3,5-trimethylbenzene - 4 µg/L; 1,2,4- trimethylbenzene - 5 µg/L; and naphthalene - 20 µg/L.

Since there currently is no treatment system installed for this supply well, Mr. Cropley has coordinated bottled water delivery to the Roger's residence, however the Roger's have been refusing this service.

3.4 WATER SUPPLY TREATMENT SYSTEM SAMPLING AND ANALYSIS

Analytical results of the influent samples collected from bedrock supply well treatment systems at the site indicate that the shallow bedrock aquifer beneath the site continues to be contaminated with petroleum compounds. During the September 2005 sampling event, benzene, MTBE, and tert amyl methyl ether (TAME) were detected in samples collected from the Mountain Market's main supply well treatment system influent and some mid carbon series samples. Benzene was detected at levels above the Vermont Action Level (VAL) of 1.0 µg/L in samples collected from Mountain Market's main supply well treatment system Carbon Mid B. Analytical results are attached and also summarized in Table 3.

MTBE was detected in the Thorne-Thomsen residence treatment system influent sample (Thorne Thomsen Inf) at 45.1 µg/L, exceeding the Vermont Health Advisory level of 40 µg/L. MTBE was also detected in samples from the first carbon filter (T-TCarbon). No VOC's were detected in the systems effluent sample and second carbon filter (T-T Effluent) indicating that the system is effectively removing the compounds of concern. The treatment system influent sample exceeds the Vermont Health Advisory level of 40 µg/L. Analytical results are attached and also summarized in Table 3.

Thorne-Thomsen Residential Well: The treatment system at this location is a point-of-entry system designed primarily for VOC removal by adsorption to granular activated carbon. This system was installed and is maintained by Vermont Water Treatment Systems of Bristol, Vermont.

Mountain Marketplace Main Supply Well: The treatment system at this location is a granular activated carbon based system, designed for VOC removal. This system was installed and is maintained by Vermont Water Treatment Systems of Bristol, Vermont.

3.5 QUALITY ASSURANCE/QUALITY CONTROL

Trip blank and duplicate samples were collected and analyzed for by EPA Method 524.2 list of VOCs to ensure that adequate quality assurance/quality control (QA/QC) standards were maintained. Analytical results from the QA/QC samples indicate that adequate QA/QC was maintained during sample collection and analysis. No VOCs were detected in the trip blanks, and the analytical results for the field duplicate samples collected from MM-Inf was within 4 percent of the original sampling results, which is within the EPA 30 percent acceptable range.

3.6 REMEDIAL SYSTEM OPERATION AND PERFORMANCE

An estimated 53 pounds of gasoline mass were recovered from the subsurface by the AS/SVE System between 29 March 2005 and 2 September 2005, bringing the total gasoline mass recovered since January 1999 to 578 pounds (Figure 17, Appendix A). Estimated mass-recovery rates during this reporting period ranged from 0.358 to 0.811 pounds per day (lbs./day) (Figure 17, Appendix A). The SVE system was operational approximately 83 percent of the operating period. The AS portion of the system was on approximately 50 percent of the operating period. During the September 2005 site visit the SVE system blower was not operational upon arrival due to a seized blower motor. In order to continue operating the SVE portion of the system blower motor must be repaired or replaced.

The vapor-destruction efficiency of the carbon-treatment system was evaluated during each site visit, when the system was running, by measuring influent and effluent vapor concentrations with a photoionization detector (PID) concentrations. VT DEC guidance documents require that vapor treatment systems show either at least 95% destruction or effluent PID concentrations below five parts per million (ppm). During this reporting period, the system effluent PID readings exceeded the five ppm standard during one visit. New vapor phase carbon vessels were ordered and installed in April 2005. The PID used for monitoring vapor concentrations in each SVE line and system VOC destruction efficiency was malfunctioning during the April and May 2005 system checks.

A trained ECS field technician continued to monitor the remedial system during site visits throughout this operating period, checking and recording system operating parameters and making repairs and adjustments as necessary. Measurements during each scheduled visit included: VOC concentrations in each SVE line and downstream of the manifold using a PID (Table 5, Appendix A); vacuum levels in each SVE line (Table 6, Appendix A); and influent and effluent PID readings on the carbon treatment system (Table 7, Appendix A), and SVE flow rates (Table 8, Appendix A). The PID was calibrated on each day of use to a benzene reference using an isobutylene standard gas.

The SVE portion of the system consists of five horizontal vapor extraction wells operating continuously. The combined piping comes to the surface in the treatment shed where it is manifolded together. The subsurface vapors are drawn through the piping by using a 1.5 horsepower (HP) Rotron regenerative blower, which removes air from the subsurface at a rate of approximately 88 standard cubic feet per minute (scfm). Hydrocarbons in the blower effluent air are treated through two 55-gallon drums of activated carbon, connected in series, prior to being discharged to the atmosphere.

The AS system is comprised of four sparging wells, operating at a total system design flow rate of approximately 30 scfm. The sparge well layout has been configured to remediate dissolved and adsorbed gasoline compounds present beneath the water table in the release source areas. The sparge wells are connected with one-inch-diameter high-pressure (150 psi) tubing placed inside four-inch conduit installed

approximately four feet bgs. The high-pressure tubing is connected to a 3.0 HP Gast air compressor located inside the treatment shed. Approximately 5 to 7.5 scfm of air is delivered to each sparge well.

TABLES

TABLE 1. GROUNDWATER ELEVATION CALCULATIONS

Londonderry Citgo
Londonderry, Vermont

Monitoring Date:
2 September 2005

Well I. D.	Top of Casing Elevation *	Depth to Water (feet, TOC)	Ground Water Elevation
MW-1	**Destroyed or Paver Over**		
MW-2	**Destroyed or Paver Over**		
MW-3	98.69	8.65	90.04
MW-4	**Well Obstructed**		
MW-5	98.48	10.65	87.83
MW-6	95.13	9.60	85.53
MW-7	98.40	10.88	87.52
MW-8	99.66	9.05	90.61
MW-S1	**Destroyed or Paver Over**		
MW-S2	94.89	10.81	84.08
MW-S3	94.41	10.30	84.11
SP-1**	99.07	8.75	90.32
SP-2**	99.23	8.78	90.45
SP-3**	99.50	8.92	90.58
SP-4**	99.64	N/A	N/A

*Top of casing (TOC) and ground water elevations are relative to an arbitrary site datum of 100.00 feet.
**Sparge points (SP) screened below water-table.
MW-1 and MW-2 were destroyed during installation of the new UST system
MW-S1 is destroyed.
MW-4 has object or sediment blocking well.
MW-5 was not sampled due to ice blockage.
MW-6 was not located.

TABLE 2. ANALYTICAL MONITORING RESULTS
GROUNDWATER MONITORING WELL SAMPLES

Londonderry Citgo
Londonderry, Vermont

Monitoring Date:
2 September 2005

Sample Location	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 Trimethyl Benzene	1,2,4 Trimethyl Benzene	Naphthalene
Volatile Petroleum Hydrocarbons by EPA Method 8021B									
MW-S2	ND	**29.1**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
MW-S3	ND	**1.0**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
MW-3	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
MW-5	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
MW-6	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
MW-7	ND	**1.6**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
MW-8	**11.0**	**2.4**	**1.2**	ND<1.0	**2.1**	**7.7**	**1.8**	**8.5**	**1.4**
SP-1	**48**	**253**	**13.3**	**2.5**	**21.9**	**10.5**	**2.4**	**23.2**	**2.8**
SP-2	**228**	**50.1**	**14.1**	**7.4**	**128**	**78.5**	**14.2**	**105**	**11.9**
SP-3	**253**	**145**	**27.4**	**7.8**	**44.3**	**174**	**128**	**411**	**39.2**
SP-4	NS	NS	NS	NS	NS	NS	NS	NS	NS
VGES	**---**	***40***	***5.0***	***1,000***	***700***	***10,000***	***4.0***	***5.0***	***20***
Quality Assurance/Quality Control Samples by EPA Method 8021B									
trip blank	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0

Notes:
All Samples collected by ECS and analyzed by Spectrum Analytical for volatile petroleum hydrocarbons by EPA Method 8021B.
Results given in micrograms per liter (µg/L).
ND - None detected at indicated detection limit.
TBQ - Trace below indicated quantitation limit.
VGES - Vermont Groundwater Enforcement Standards.
Shaded concentrations exceed VGES.

TABLE 3.
Drinking-Water Analytical Results
Londonderry Citgo
Londonderry Center, Vermont
Monitoring Date:
2 September 2005

Supply Well	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	Total BTEX	1,3,5 -TMB	1,2,4 -TMB	Naphthalene	Isopropylb enzene	Tert amyl methyl ether	Manganese	Methylene Chloride
Shopping Center Main - Mountain Marketplace													
system influent (MM-Inf)	**34.3**	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5	**ND**	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5	**4.4**	NS	BRL<0.5
Carbon Mid A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbon Mid B	**7.4**	**8.5**	BRL<1	BRL<1	BRL<2	**8.5**	BRL<1	BRL<1	BRL<1	NS	NS	NS	NS
Carbon Mid C	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbon Mid D (MM-Mid)	**8.3**	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5	**ND**	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5
Carbon Mid E	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Carbon Mid F	**8.8**	BRL<1	BRL<1	BRL<1	BRL<2	**ND**	BRL<1	BRL<1	BRL<1	NS	NS	NS	NS
Carbon Mid G	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
system effluent (MM-Eff)	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5	BRL<0.5	**ND**	BRL<0.5	BRL<0.5	BRL<0.5	**0.6**	BRL<0.5	NS	BRL<0.5
Thorne-Thomsen - system influent(T-T Infl)	**45.1**	BRL<1	BRL<1	BRL<1	BRL<2	**ND**	BRL<1	BRL<1	BRL<1	NS	NS	NS	NS
- system mid (T-T Carbon)	**8.4**	BRL<1	BRL<1	BRL<1	BRL<2	**ND**	BRL<1	BRL<1	BRL<1	NS	NS	NS	NS
- system effluent (T-T Effluent)	BRL<1	BRL<1	BRL<1	BRL<1	BRL<2	**ND**	BRL<1	BRL<1	BRL<1	NS	NS	NS	NS
Rogers	**4.4**	BRL<1	BRL<1	BRL<1	BRL<2	**ND**	BRL<1	BRL<1	BRL<1	NS	NS	NS	NS
trip blank	BRL<1	BRL<1	BRL<1	BRL<1	BRL<2	**ND**	BRL<1	BRL<1	BRL<1	NS	NS	NS	NS
Duplicate (MM-Inf)	**35.7**	BRL<1	BRL<1	BRL<1	BRL<2	**ND**	BRL<1	BRL<1	BRL<1	BRL<0.5	**4.6**	BRL<0.5	BRL<0.5
% Difference	***4***	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	***4***	**--**	**--**
MCL	---	5	1,000	700	10,000	---	---	---	---	---	---	50	5
VHA	40	---	---	---	---	---	5	4	20	---	---	840	---
VAL	---	1	---	---	---	---	---	---	---	---	---	---	---

Notes:

Results given in parts per billion (ppb) .

NS - Not sampled, could not contact owner for access.

ND - None detected at indicated detection limit.

BRL - Below reporting limits indicated.

All samples collected by ECS and analyzed by Spectrum Analytical, Inc.

MCL - Enforceable U.S. EPA Maximum Contaminant Levels for chemicals of concern in drinking water.

VHA - Vermont Health Advisories - guidelines for concentrations of chemicals in drinking water that do not have MCLs.

VAL - Vermont Action Levels for eight chemicals of specific health concern in public water systems, established by the Vermont Dept. of Health.

TABLE 4. SPARGE SYSTEM PRESSURE AND AIRFLOW READINGS

DATE	SP-1	SP-2	SP-3	SP-4
02/22/00	0.5	6	3	5.5
03/09/00	1	5	4	4
07/17/00	6	4	4.5	4.5
07/26/00	4	5	4.5	6
08/14/00	5	6.5	7	5
09/19/00	3	5.5	5	4.5
02/18/04	--	--	--	--
03/08/04	--	--	--	--
03/16/04	--	--	--	--
04/22/04	--	--	--	--
05/11/04	--	--	--	--
06/16/04	4.5	6.0	4.5	4.5
07/06/04	5.0	5.0	5.0	4.0
08/11/04	3.5	6.5	3.5	5
09/14/04	1.0	5.0	1.0	4.0
10/15/04	13	5.0	1.5	4.5
11/09/04	1.0	4.5	1.0	3.0
12/28/04	2.5	4.0	3.0	4.5
01/18/05	4.0	5.5	4.0	4.5
02/10/05	3.5	4.5	4.0	4.0
03/29/05	NA	NA	NA	NA
04/11/05	NA	NA	NA	NA
05/23/05	NA	NA	NA	NA
06/02/05	NA	NA	NA	NA
07/18/05	2.0	2.0	2.0	3.5
08/16/05	2.0	3.0	2.0	3.0
09/02/05	2.5	4.5	2.0	3.5

Note: Readings in pounds per square inch (psi).
Sparge system down 3/29/05 through 6/2/05 due to seized leg valves.
N/A: Data not available
--: Sparge leg not running

DATE	SP-1	SP-2	SP-3	SP-4
02/22/00	12.5	9.5	10	9
03/09/00	12.5	9.75	9	10
07/17/00	8.0	10.5	9.0	9.5
07/26/00	13	12	10.5	10
08/14/00	11	17	11	6
09/19/00	11.5	22	17	7
02/18/04	--	--	--	--
03/08/04	--	--	--	--
03/16/04	--	--	--	--
04/22/04	--	--	--	--
05/11/04	--	--	--	--
06/16/04	15	16	7.5	5
07/06/04	5	5	5	4
08/11/04	10	14	10	8
09/14/04	9.5	15	11.5	7.5
10/15/04	0.5	15.5	3.5	6.5
11/09/04	10.0	11.0	2.0	5.0
12/28/04	5.0	5.0	6.0	5.0
01/18/05	5.5	5.0	2.5	2.0
02/10/05	6.5	6.5	5.0	3.0
03/29/05	NA	NA	NA	NA
04/11/05	NA	NA	NA	NA
05/23/05	NA	NA	NA	NA
06/02/05	NA	NA	NA	NA
07/18/05	11.0	7.0	6.0	0.0
08/16/05	7.0	5.0	5.0	4.0
09/02/05	9.0	7.0	6.0	4.0

Note: Readings in standard cubic feet per minute (scfm).
Sparge system down 3/29/05 through 6/2/05 due to seized leg valves.
N/A= Data not available
--: Sparge leg not running

TABLE 5. SVE SYSTEM PID READINGS

DATE	SVE-1	SVE-2	SVE-3	SVE-4	SVE-5	Total
11/19/99	3.2	16.2	0.7	6.1	1.2	5.8
12/03/99	6.5	4.9	9.8	5.5	4.1	2.5
12/14/99	4.5	6.2	1.8	6.8	2.2	4.2
01/19/00	1.5	24.2	0.0	1.5	0.1	1.6
02/22/00	0.7	0.0	0.5	0.7	0.5	--
03/09/00	--	6.3	--	4.1	--	--
07/17/00	0.1	0.9	0.2	1.7	0.9	2.8
07/26/00	10.4	4.3	13.8	2.0	0.0	0.0
08/14/00	0.3	0.4	15.1	2.8	6.8	5.4
09/19/00	6.1	4.0	4.2	3.0	5.0	2.1
02/18/04	65.0	76.6	79.7	595.0	437.0	117.0
03/08/04	0.2	23.8	0.2	51.6	18.4	13.2
03/16/04	0	5.5	0.1	69.4	27.5	15.6
04/22/04	0	0	0	8.0	16.0	11.0
05/11/04	0	0	1.3	22.7	29.0	18.3
06/16/04	9.7	23.6	8.3	1.3	11.1	4.1
07/06/04	0	0.4	0	21.2	1.5	5.2
08/11/04	0	3.3	3.3	30.2	0.6	8.8
09/14/04	0	0	0	20.1	3.1	8.0
10/15/04	1	5.9	1	50.4	7.3	19.2
11/09/04	0	4.2	0	33.3	4.1	11.0
12/28/04	2.8	3.3	2.2	1.2	1.8	3.2
01/18/05	0	64	0	125.0	60.0	52.0
02/10/05	0	14.5	0	32.0	7.8	6.5
03/29/05	12	0	2.5	225.0	31.5	75.6
04/11/05	NA	NA	NA	NA	NA	NA
05/23/05	NA	NA	NA	NA	NA	NA
06/02/05	3.4	7.2	2.2	47.0	18.2	24.0
07/18/05	1.3	7.1	0.4	32.0	10.0	18.0
08/16/05	0.0	0.0	0.0	0.2	0.0	0.0
09/02/05	NA	NA	NA	NA	NA	NA

Notes: Readings in parts per million (ppm) by photoionization detector
System readings are prior to dilution.
N/A= Data not available
--: SVE leg not running

TABLE 6. SVE SYSTEM VACUUM READINGS

DATE	SVE-1	SVE-2	SVE-3	SVE-4	SVE-5	TOTAL
02/10/99	---	---	---	---	---	---
12/14/99	2.0	1.0	1.0	3.0	1.0	N/A
01/19/00	1.75	1.5	1.0	3.0	1.0	N/A
02/22/00	1.5	1.0	1.0	3.0	1.0	48.5
03/09/00	2.0	1.5	1.5	4.0	1.0	--
07/17/00	1.2	1.2	1.0	1.6	1.0	17
07/26/00	1.2	1.3	1.1	1.0	1.6	13.5
08/14/00	1.7	1.8	1.6	2.1	1.7	17
09/19/00	1.3	1.4	1.2	1.9	1.5	7.2
02/18/04	2.0	2.0	2.0	2.0	2.0	2.0
03/08/04	0.1	0.1	0.1	0.1	0.1	0.9
03/16/04	0.1	0.1	0.1	0.1	0.1	1.0
04/22/04	2.0	2.0	2.0	2.0	2.0	2.0
05/11/04	0.4	0.4	0.4	0.5	0.4	0.6
06/16/04	2.0	0.3	0.2	1.0	0.1	0.4
07/06/04	1.0	0.8	1.0	1.4	1.0	2.2
08/11/04	1.3	1.6	1.4	1.4	2.0	2.1
09/14/04	1.0	0.9	1.0	1.4	1.1	2.4
10/15/04	1.3	1.6	1.5	2.2	1.5	2.5
11/09/04	1.5	1.7	1.6	2.4	1.7	2.6
12/28/04	1.5	1.5	1.5	1.5	1.5	3.0
01/18/05	1.4	1.4	1.4	1.7	1.7	2.0
02/10/05	1.4	1.5	1.5	1.9	1.6	2.5
03/29/05	1.0	1.0	1.0	1.0	1.0	1.0
04/11/05	3.4	3.5	3.5	3.7	3.5	4.5
05/23/05	1.6	1.9	1.8	3.4	2.5	NA
06/02/05	1.5	1.9	2	2.6	2.0	3.0
07/18/05	2.0	2.0	2.0	3.0	1.5	5.0
08/16/05	1.5	1.5	1.7	2.7	1.4	3.0
09/02/05	NA	NA	NA	NA	NA	NA

Note: ---: SVE leg not running
N/A= Data not available
All vacuum readings reported as inches of water column

TABLE 7. SVE SYSTEM VOC DESTRUCTION EFFICIENCY

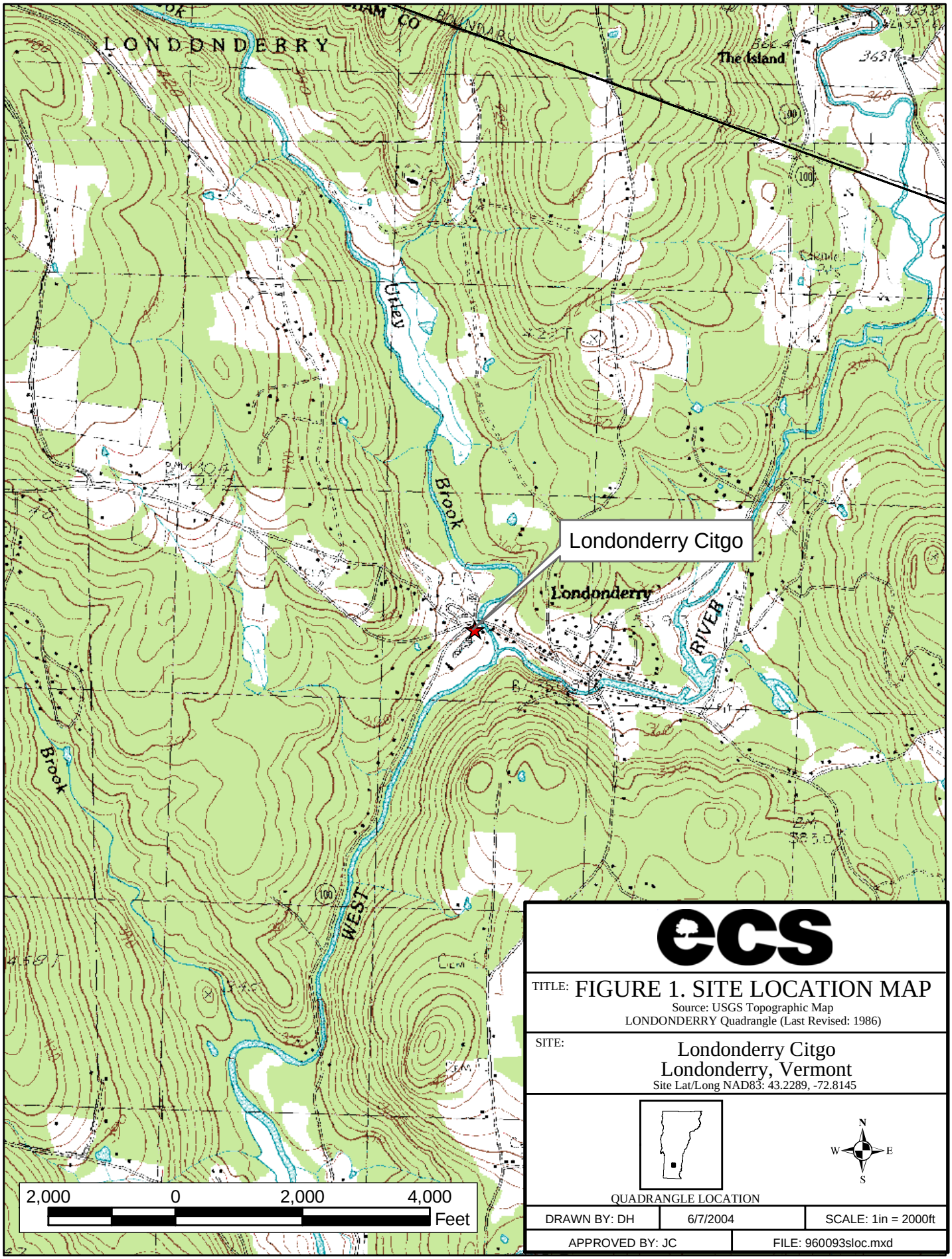
DATE	INFL	EFF	REMOVAL (%)	
02/22/00	4.4	1.3	70.5	
03/09/00	7.1	0	100	
07/17/00	1.3	0.2	85	
07/26/00	0	0	100	
08/14/00	4.5	1.2	64	
09/19/00	1.9	1	48	
02/18/04	117	3	97	
03/08/04	4.6	4.2	91	
03/16/04	3.1	3.1	0	
04/22/04	3.1	4.5	-45	
05/11/04	NA	NA	NA	**back pressure**
06/16/04	4.1	0	100	
07/06/04	5.2	7.1	-37	
08/11/04	7.8	10.5	-35	
09/14/04	3.7	6.8	-84	
10/15/04	20.8	18	13.5	
11/09/04	8.6	7.0	18.6	
12/28/04	NA	NA	NA	
01/18/05	115	22.8	80.2	
02/10/05	3.7	3.5	5.4	
03/29/05	24.6	20.8	15.5	
04/11/05	NA	NA	NA	
05/23/05	NA	NA	NA	Readings not taken due to malfunctioning PID.
06/02/05	20.0	11.0	45.0	
07/18/05	14.8	0.0	100	
08/16/05	0.9	2.0	0	
09/02/05	NA	NA	NA	System down blower motor seized.

TABLE 8. SVE SYSTEM AIRFLOW READINGS

DATE	SVE-1	SVE-2	SVE-3	SVE-4	SVE-5	C-1 INFL
12/03/99	5.3	2.6	7.5	31.7	8.4	0.0
12/14/99	11.1	4.4	5.4	40.4	7.5	0.0
01/19/00	19.0	2.9	10.9	44.9	11.8	0.0
02/22/00	N/A	N/A	N/A	N/A	N/A	N/A
03/09/00	33.4	14.8	18.2	75.5	24.9	104
07/17/00	15.9	15.2	27.2	55.3	48.1	123.2
07/26/00	12.0	12.9	21.3	36.0	39.2	109.0
08/14/00	1.5	1.5	11.7	44.1	52.1	93.4
09/19/00	10.3	10.2	19.8	33.6	37.3	88.0
02/18/04	1.3	0.9	4.5	0.2	9.7	48.60
03/08/04	1.5	1.5	5.3	0.1	9.7	41.0
03/16/04	1.8	1.7	4.7	0.2	9.7	42.8
04/22/04	0.5	0.5	0.5	0.5	12.0	48.6
05/11/04	12.6	10.7	17.5	33.0	33.0	40.0
06/16/04	15.0	12.2	18.4	0.6	27.5	37.3
07/06/04	8.7	8.2	15.6	19.4	34.0	77.6
08/11/04	7.8	7.8	14.6	24.3	29.1	77.6
09/14/04	9.7	4.9	17.5	24.3	34.1	87.3
10/15/04	9.8	7.8	19.5	24.4	34.1	85.8
11/09/04	9.8	10.7	14.6	21.5	39.0	92.6
12/28/04	5.9	4.8	9.5	3.5	11.7	58.5
01/18/05	13.2	9.8	18.5	5.9	30.2	64.4
02/10/05	10.7	9.8	20.1	7.8	33.2	61.9
03/29/05	5.5	5.5	3.9	22.4	44.9	68.3
04/11/05	3.9	3.9	8.0	29.3	56.2	88.7
05/23/05	5.3	6.0	13.0	22.1	25.2	72.2
06/02/05	21.5	18.1	39.0	48.8	58.5	103.4
07/18/05	14.8	13.7	29.3	48.8	52.7	117.0
08/16/05	10.2	11.3	22.4	3.9	48.8	126.8
09/02/05	NA	NA	NA	NA	NA	NA

Notes: Flow rates reported in cubic feet per minute (cfm)
System readings are prior to dilution.
--- SVE leg not running
N/A Data not available

FIGURES



ecs

TITLE: FIGURE 1. SITE LOCATION MAP

Source: USGS Topographic Map
LONDONDERRY Quadrangle (Last Revised: 1986)

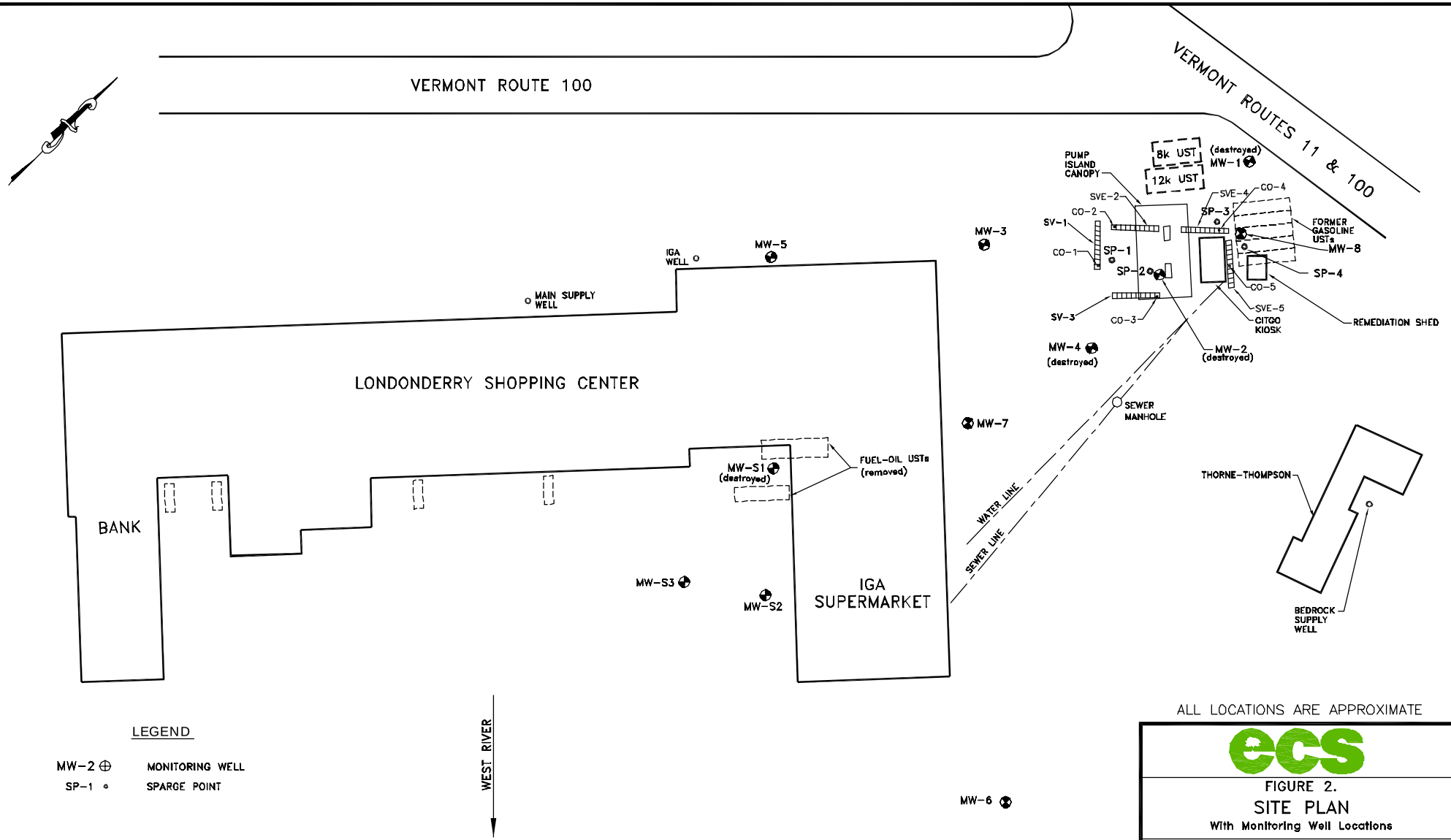
SITE:

Londonderry Citgo
Londonderry, Vermont
Site Lat/Long NAD83: 43.2289, -72.8145

QUADRANGLE LOCATION

N
W E
S

DRAWN BY: DH	6/7/2004	SCALE: 1in = 2000ft
APPROVED BY: JC		FILE: 960093sloc.mxd



ecs

FIGURE 2.

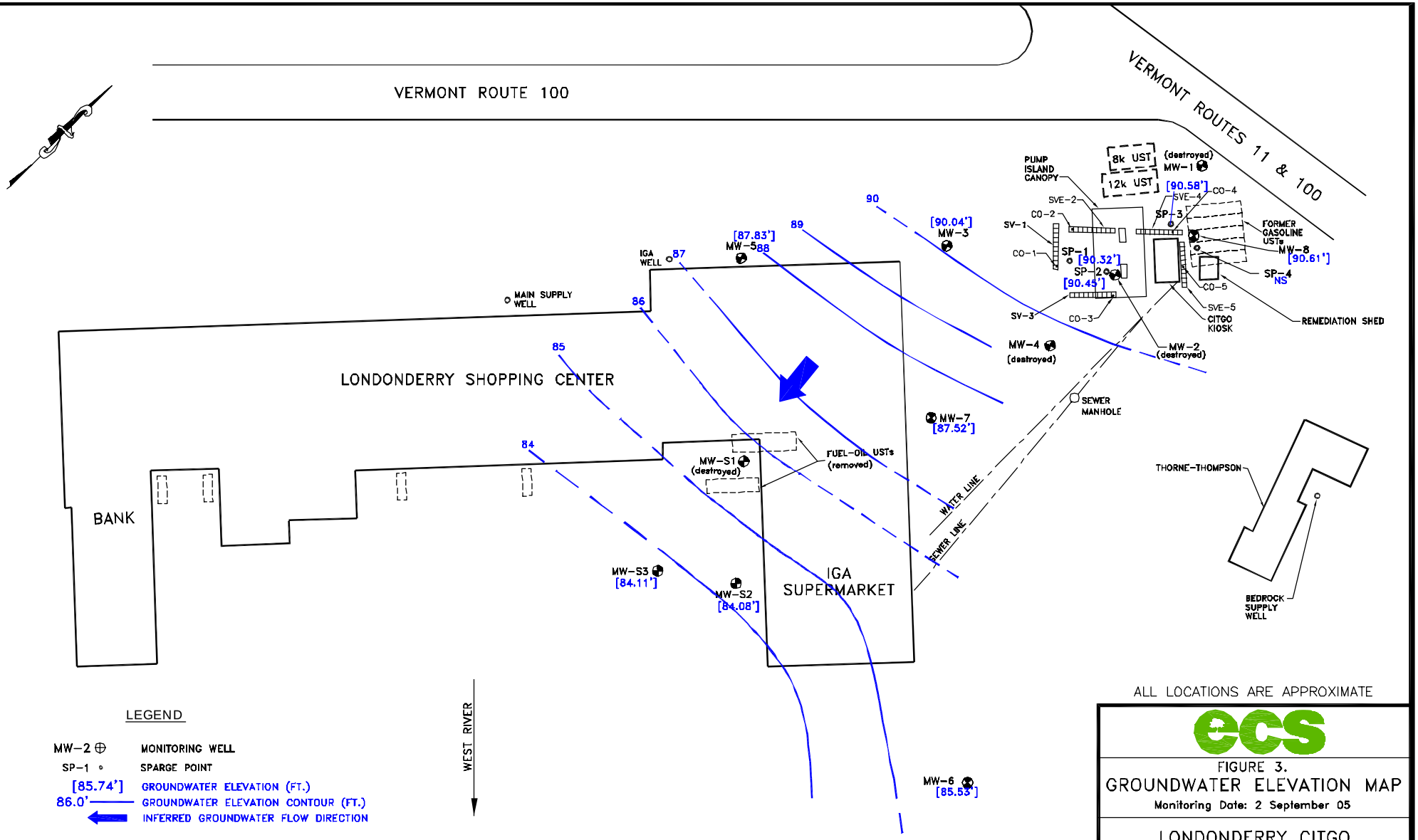
SITE PLAN

With Monitoring Well Locations

LONDONDERRY CITGO

LONDONDERRY CENTER, VT

DRAWN BY: FHL	DATE: 12/7/05	SCALE: 1"= 40'
APPROVED BY: JC	FILE No.: 96093R16	



ALL LOCATIONS ARE APPROXIMATE

NOTE: SP-1 THRU SP-4 DATA IS NOT INCLUDED IN DETERMINATION OF GROUNDWATER ELEVATION CONTOURS BECAUSE THEY ARE SPARGE WELLS SCREENED BENEATH THE WATER TABLE.

ecs

FIGURE 3.

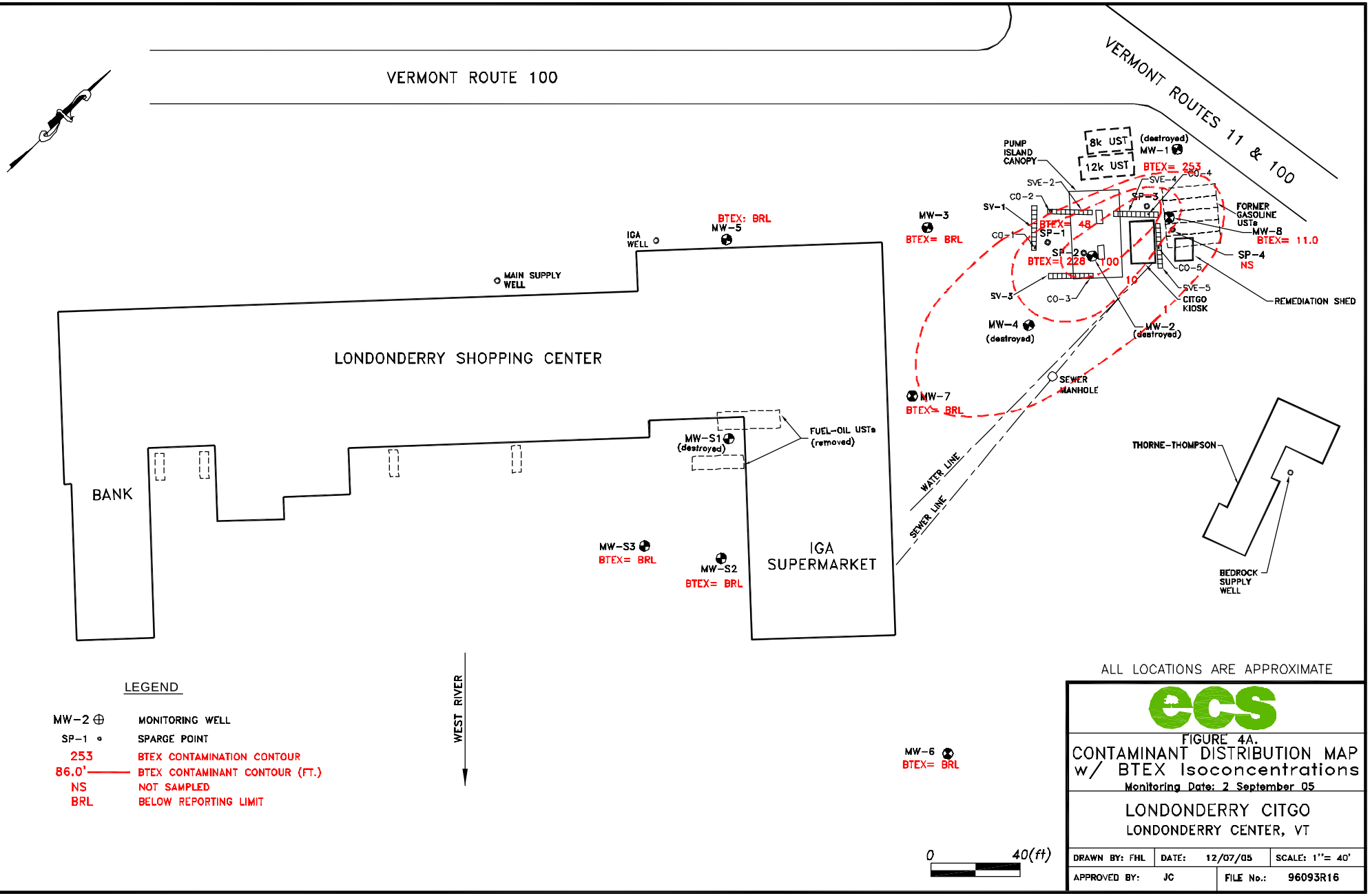
GROUNDWATER ELEVATION MAP

Monitoring Date: 2 September 05

LONDONDERRY CITGO

LONDONDERRY CENTER, VT

DRAWN BY: FHL	DATE: 12/07/05	SCALE: 1"= 40'
APPROVED BY: JC	FILE No.: 96093R16	



ALL LOCATIONS ARE APPROXIMATE

ecs

FIGURE 4A.

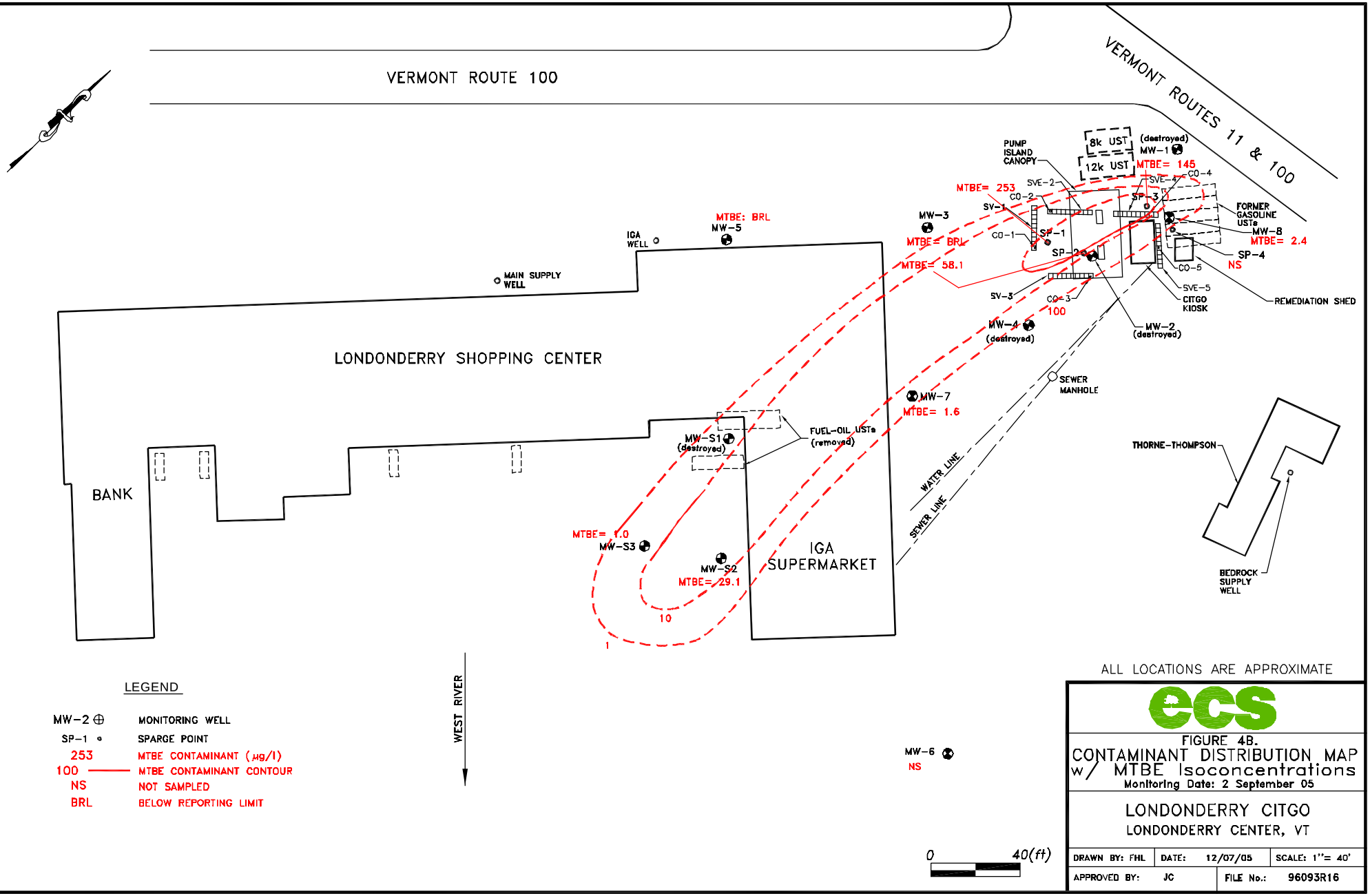
CONTAMINANT DISTRIBUTION MAP
w/ BTEX Isoconcentrations

Monitoring Date: 2 September 05

LONDONDERRY CITGO

LONDONDERRY CENTER, VT

DRAWN BY: FHL	DATE: 12/07/05	SCALE: 1"= 40'
APPROVED BY: JC		FILE No.: 96093R16



ecs

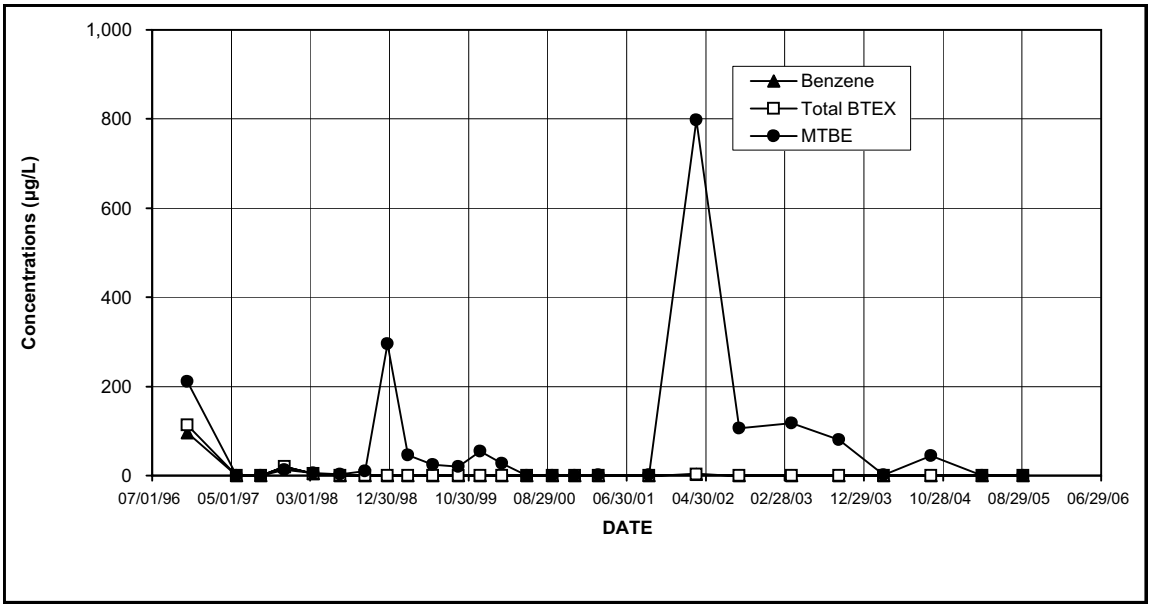
FIGURE 4B.
CONTAMINANT DISTRIBUTION MAP
w/ MTBE Isoconcentrations
Monitoring Date: 2 September 05

LONDONDERRY CITGO
LONDONDERRY CENTER, VT

DRAWN BY: FHL	DATE: 12/07/05	SCALE: 1"= 40'
APPROVED BY: JC	FILE No.: 96093R16	

FIGURE 5. MW-3
VOC Concentrations

Londonderry Citgo
Londonderry, VT

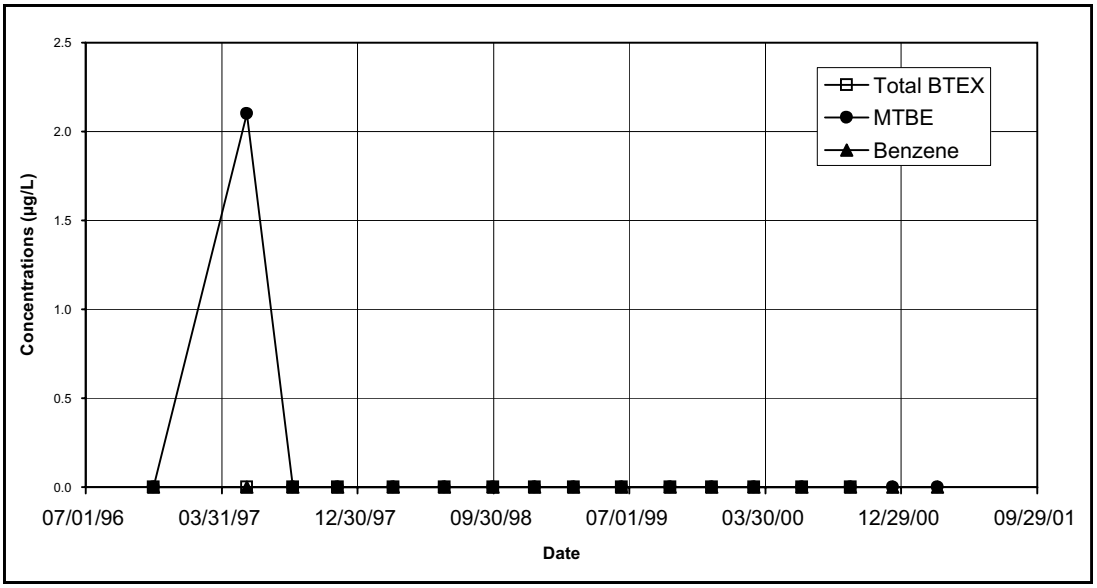


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
03/08/00	ND	**27.9**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
06/12/00	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
09/19/00	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
12/13/00	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
03/13/01	ND	**1.7**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
09/25/01	ND	**1.83**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
03/26/02	**3.2**	**798**	**3.2**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
09/05/02	ND	**106**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
03/27/03	ND	**118**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
09/25/03	ND	**80.2**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
03/16/04	ND	**1.5**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
09/14/04	ND	**44.6**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
03/29/05	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
09/02/05	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L)
ND - None detected at indicated detection limit
TBQ- Trace below quantitation limit indicated.
03/29/05 samples collected by ECS and analyzed by Spectrum Analytical, Inc.
VGES - Vermont Groundwater Enforcement Standards
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
TMB - Trimethyl Benzene
Shaded concentrations exceed VGES.

FIGURE 6. MW-5
VOC Concentrations

Londonderry Citgo
Londonderry, VT



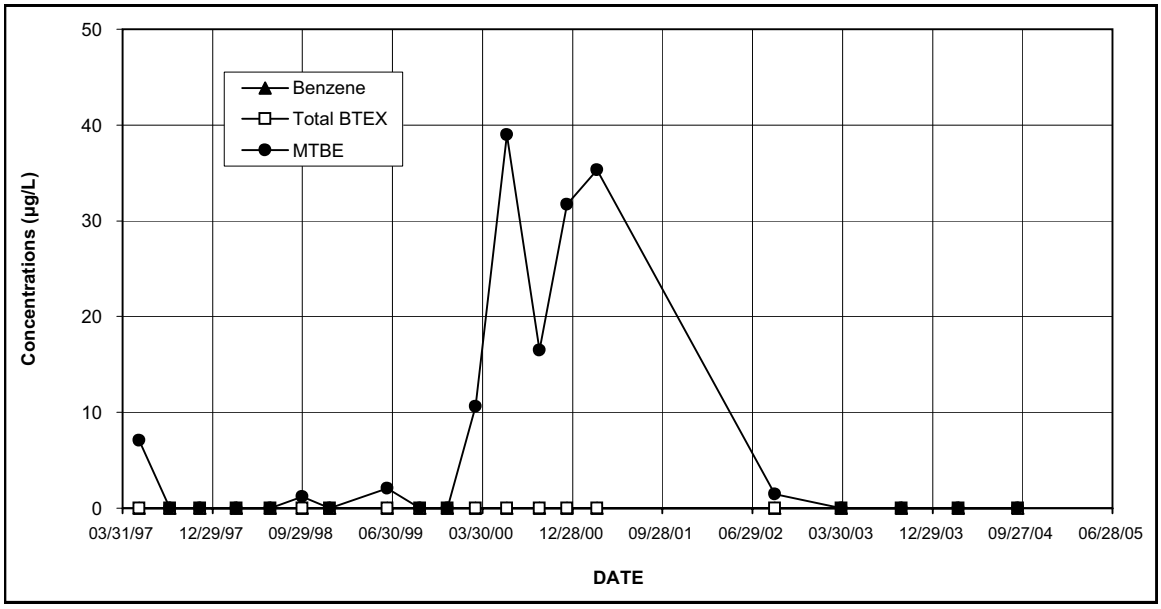
Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
03/08/00	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
06/12/00	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
09/19/00	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
12/13/00	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
03/13/01	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
09/25/01	NS	NS	NS	NS	NS	NS	NS	NS	NS
03/26/02	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/05/02	NS	NS	NS	NS	NS	NS	NS	NS	NS
03/27/03	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/25/03	NS	NS	NS	NS	NS	NS	NS	NS	NS
03/16/04	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/14/04	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
03/29/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/02/05	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L)
ND - None detected at indicated detection limit.
TBQ - Trace below quantitation limit indicated.
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
TMB - Trimethyl Benzene
* Well installed 14 May 1997

** MW-5 Not sampled due to change in scope of work. Added back to sampling plan on

FIGURE 7. MW-6
VOC Concentrations

Londonderry Citgo
Londonderry, VT

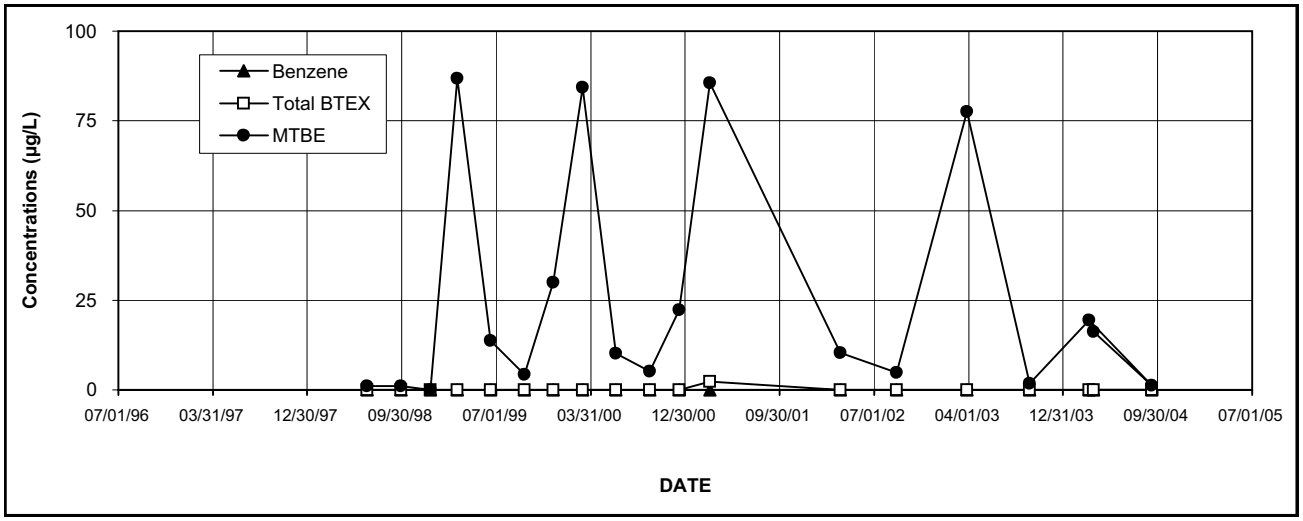


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
03/08/00	ND	**10.6**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
06/12/00	ND	**39.0**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
09/19/00	ND	**16.5**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
12/13/00	ND	**31.7**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
03/13/01	ND	**35.3**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
09/05/02	ND	**1.5**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
03/27/03	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/25/03	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
03/16/04	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/14/04	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
09/02/05	ND	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L)
ND - None detected at indicated detection limit.
TBQ - Trace below quantitation limit indicated.
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
TMB - Trimethyl Benzene
* Well installed 14 May 1997
** MW-6 not located.
NS- Unable to locate the well due to excessive snow stock piled from plowing, therefore not sampled.

FIGURE 8. MW-7
VOC Concentrations

Londonderry Citgo
Londonderry, VT

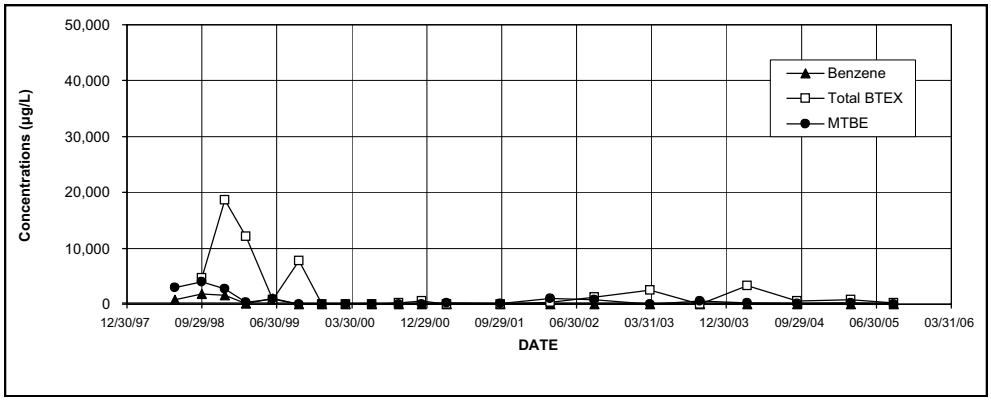


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
03/08/00	ND	**84.3**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND<1.0
06/12/00	ND	**10.2**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND<1.0
09/19/00	ND	**5.1**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND<1.0
12/13/00	ND	**22.3**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND<1.0
03/13/01	**2.4**	**85.5**	ND<1.0	ND<1.0	ND<1.0	**2.4**	ND<1.0	ND<1.0	ND<1.0
03/26/02	ND	**10.4**	ND<1.0	ND<1.0	ND<1.0	ND <1.0	ND<1.0	ND<1.0	ND<1.0
09/05/02	ND	**4.9**	ND<1.0	ND<1.0	ND<1.0	ND <2.0	ND<1.0	ND<1.0	ND<1.0
03/27/03	ND	**77.5**	ND<1.0	ND<1.0	ND<1.0	ND <2.0	ND<1.0	ND<1.0	ND<1.0
09/25/03	ND	**1.72**	ND<1.0	ND<1.0	ND<1.0	ND <2.0	ND<1.0	ND<1.0	ND<1.0
03/16/04	ND	**19.4**	ND<1.0	ND<1.0	ND<1.0	ND <2.0	ND<1.0	ND<1.0	ND<1.0
09/14/04	ND	**1.3**	ND<1.0	ND<1.0	ND<1.0	ND <2.0	ND<1.0	ND<1.0	ND<1.0
03/29/04	ND	**16.3**	ND<1.0	ND<1.0	ND<1.0	ND <2.0	ND<1.0	ND<1.0	ND<1.0
09/02/05	ND	**1.6**	ND<1.0	ND<1.0	ND<1.0	ND <2.0	ND<1.0	ND<1.0	ND<1.0
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L)
ND - None detected at indicated detection limit.
TBQ - Trace below quantitation limit indicated.
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
TMB - Trimethyl Benzene
* Well installed 23 April 1998
**MW-7 not sampled because it was damaged.

FIGURE 9. MW-8
VOC Concentrations

Londonderry Citgo
Londonderry, VT

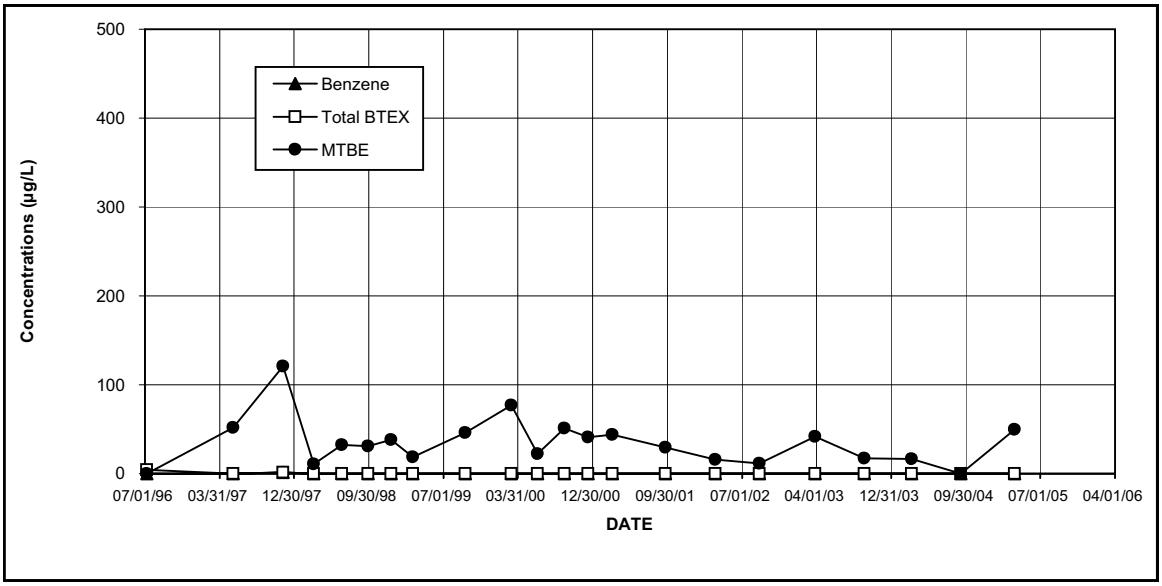


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
03/08/00	ND	**1.2**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
06/12/00	**188.2**	**53.1**	**10.2**	**7.9**	**31.1**	**139**	**37.9**	**46.8**	**10.9**
09/19/00	**625.8**	**24.4**	**10.8**	**117**	**129**	**369**	**31.5**	**103**	**19.0**
12/13/00	ND	**24.7**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
03/13/01	**44.5**	**264**	**5.9**	ND<2.0	**18.6**	**20.0**	**10.6**	**12.3**	**4.2**
09/25/01	**295.4**	**68.1**	**4.3**	**15.1**	**116**	**160**	**32.5**	**92.1**	**18.8**
03/26/02	**1,294.3**	**1,080**	**11.2**	**35.1**	**178**	**1,070**	**180**	**422**	**146**
09/05/02	**2,514.2**	**814**	**20.2**	**206.0**	**588**	**1,700**	**222**	**696**	**153**
03/27/03	**55.2**	**38.4**	**1.0**	**1.7**	**5.9**	**46.6**	**8.0**	**16.2**	**4.1**
09/25/03	**3,362.0**	**556**	ND<25.0	**116**	**824**	**2,422**	**581**	**1,690**	**376**
03/16/04	**540.5**	**178**	**12.6**	**16.9**	**217**	**294**	**184**	**360**	**77.2**
09/14/04	**838.4**	**140**	ND<10.0	**13.4**	**178**	**647**	**160**	**575**	**93.2**
03/29/05	**171.7**	**213**	**40.0**	ND<5.0	**35.6**	**96.1**	**87.4**	**299**	**29.0**
09/02/05	**11.0**	**2.4**	**1.2**	ND<1.0	**2.1**	**7.7**	**1.8**	**8.5**	**1.4**
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes:
Results given in micrograms per liter (µg/L)
ND- None detected at indicated detection limit.
TBQ - Trace below quantitation limit indicated.
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
* Well installed 23 April 1998
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
TMB - Trimethyl Benzene
Shaded concentrations exceed VGES.

FIGURE 10. MW-S2
VOC Concentrations

Londonderry Citgo
Londonderry, VT

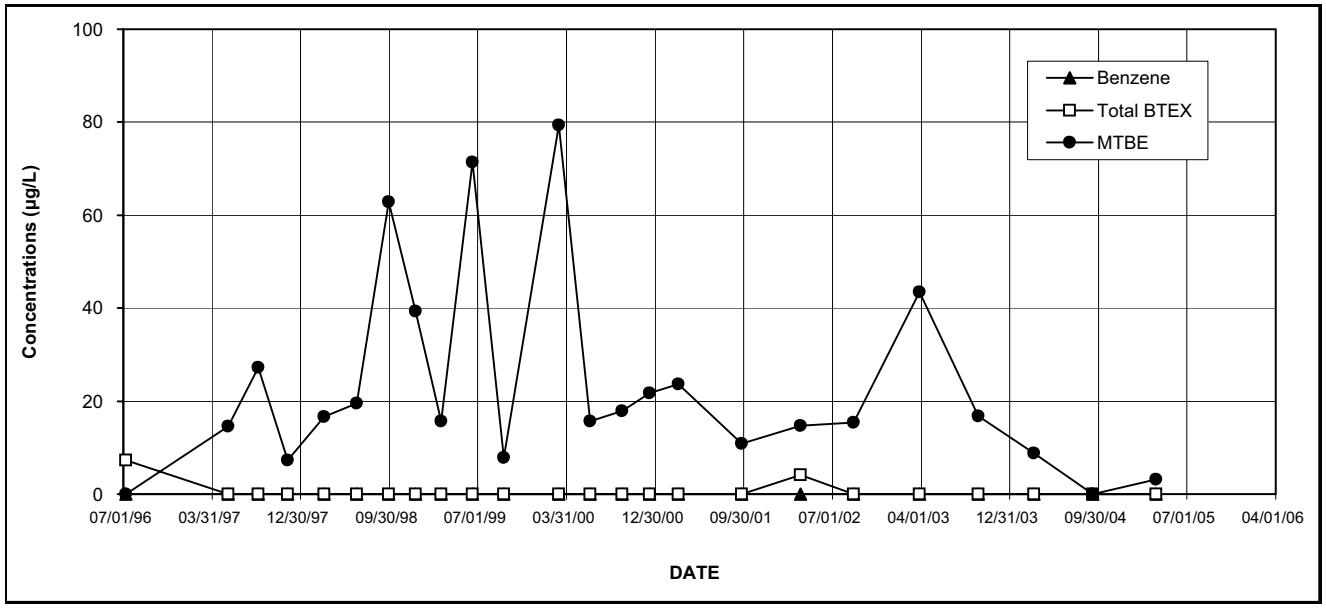


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
03/08/00	ND	**76.8**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
06/12/00	ND	**22.0**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
09/19/00	ND	**51.3**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
12/13/00	ND	**40.7**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
03/13/01	ND	**43.9**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
09/25/01	ND	**29.6**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
03/26/02	ND	**15.6**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
09/05/02	ND	**11.6**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
03/27/03	ND	**41.6**	ND <1.0	ND <1.0	ND <1.0	ND <2.0	ND <1.0	ND <1.0	ND <1.0
09/25/03	ND	**17.0**	ND <1.0	ND <1.0	ND <1.0	ND <2.0	ND <1.0	ND <1.0	ND <1.0
03/16/04	ND	**16.5**	ND <1.0	ND <1.0	ND <1.0	ND <2.0	ND <1.0	ND <1.0	ND <1.0
09/14/04	NS	NS	NS	NS	NS	NS	NS	NS	NS
03/29/05	ND	**49.9**	ND <1.0	ND <1.0	ND <1.0	ND <2.0	ND <1.0	ND <1.0	ND <1.0
09/02/05	ND	**29.1**	ND <1.0	ND <1.0	ND <1.0	ND <2.0	ND <1.0	ND <1.0	ND <1.0
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L)
ND- None detected at indicated detection limit.
TBQ - Trace below quantitaion limit indicated
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
TMB - Trimethyl Benzene
Shaded concentrations exceed VGES.
Unable to be located during Dec '99 site visit

FIGURE 11. MW-S3
VOC Concentrations

Londonderry Citgo
Londonderry, VT

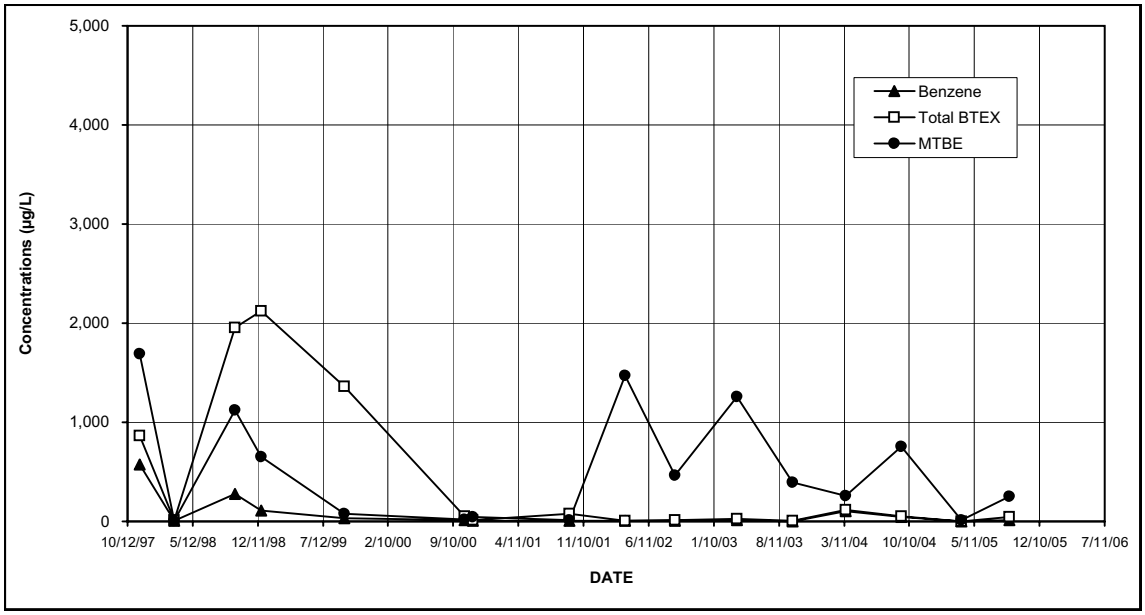


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naphthalene
03/08/00	ND	**79.4**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
06/12/00	ND	**15.7**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
09/19/00	ND	**17.9**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
12/13/00	ND	**21.8**	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0	ND <1.0
03/13/01	ND	**23.7**	ND <1.0	ND <1.0	ND <1.0	ND<1.0	ND<1.0	ND<1.0	ND <1.0
09/25/01	ND	**10.9**	ND <1.0	ND <1.0	ND <1.0	ND<1.0	ND<1.0	ND<1.0	ND <1.0
03/26/02	**4.1**	**14.7**	ND <1.0	ND <1.0	**1.3**	**2.8**	ND<1.0	ND<1.0	ND <1.0
09/05/02	ND	**15.4**	ND <1.0	ND <1.0	ND <1.0	ND<2.0	ND<1.0	ND<1.0	ND <1.0
03/27/03	ND	**43.5**	ND <1.0	ND <1.0	ND <1.0	ND<2.0	ND<1.0	ND<1.0	ND <1.0
09/25/03	ND	**16.8**	ND <1.0	ND <1.0	ND <1.0	ND<2.0	ND<1.0	ND<1.0	ND <1.0
03/16/04	ND	**8.8**	ND <1.0	ND <1.0	ND <1.0	ND<2.0	ND<1.0	ND<1.0	ND <1.0
09/14/04	NS	NS	NS	NS	NS	NS	NS	NS	NS
03/29/05	ND	**3.1**	ND <1.0	ND <1.0	ND <1.0	ND<2.0	ND<1.0	ND<1.0	ND <1.0
09/02/05	ND	**1.0**	ND <1.0	ND <1.0	ND <1.0	ND<2.0	ND<1.0	ND<1.0	ND <1.0
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L)
ND- None detected at indicated detection limit.
TBQ - Trace below quantitaion limit indicated
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
TMB - Trimethyl Benzene
Shaded concentrations exceed VGES.
Unable to be located during Dec '99 site visit

FIGURE 12. SP-1
VOC Concentrations

Londonderry Citgo
Londonderry, VT

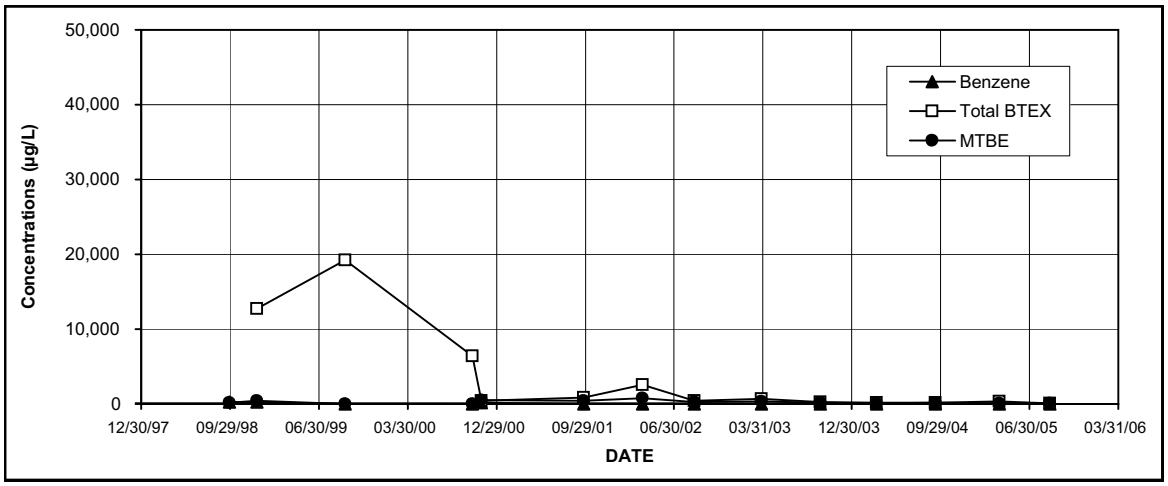


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
11/21/97	**863.9**	**1,690**	**575**	**121**	**93.5**	**74.4**	---	---	---
03/13/98	**11.9**	**4.7**	**6.9**	**1.6**	**3.4**	**TBQ<1**	---	---	---
09/29/98	**1,954**	**1,120**	**278**	**129**	**1,000**	**547**	**227**	**384**	**247**
12/22/98	**2,121**	**651**	**111**	**163**	**966**	**881**	**400**	**1,020**	**155**
09/21/99	**1,361**	**77**	**35.3**	**60.8**	**474**	**791**	**323**	**620**	**58**
10/17/00	**53.8**	**18**	**10.0**	**1.5**	**31.3**	**11.0**	**25.7**	**90.7**	**9.5**
11/14/00	**11.9**	**47.9**	**9.3**	ND<1.0	**2.6**	ND<1.0	**1.3**	**3.7**	**4.5**
09/25/01	**77.8**	**11.8**	**9.6**	**3.1**	**37.1**	**28.0**	**24.3**	**72.2**	**5.2**
03/26/02	**6.2**	**1,470**	**6.2**	ND <2.0	ND <2.0	ND <2.0	ND <2.0	ND <2.0	ND <2.0
09/05/02	**10.3**	**467**	**5.1**	ND <4.0	**5.2**	ND <8.0	ND <4.0	ND <4.0	ND <4.0
03/27/03	**24.0**	**1,260**	**14.0**	**5.2**	**4.8**	ND<8.0	**5.8**	**13.1**	ND<4.0
09/25/03	**6.4**	**392**	ND<5.0	ND<5.0	**6.4**	ND<10.0	ND<5.0	ND<5.0	**7.4**
03/16/04	**118.3**	**258**	**105**	**13.3**	ND <4.0	ND <8.0	ND <4.0	**7.5**	ND <4.0
09/14/04	**52.5**	**755**	**45.8**	ND<5.0	**6.7**	ND<10.0	ND<5.0	**5.3**	**6.4**
03/29/05	**ND**	**12.0**	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
09/02/05	**48.2**	**253.0**	**13.3**	**2.5**	**21.9**	**10.5**	**2.4**	**23.2**	**2.8**
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L).
ND- None detected at indicated detection limit.
TBQ - Trace below quantitation limit indicated.
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
6/23/98 and 3/9/00 - Not Sampled
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - methyl tertiary butyl ether
TMB - Trimethyl Benzene
Shaded concentrations denote VGES exceedences

FIGURE 13. SP-2
VOC Concentrations

Londonderry Citgo
Londonderry, VT

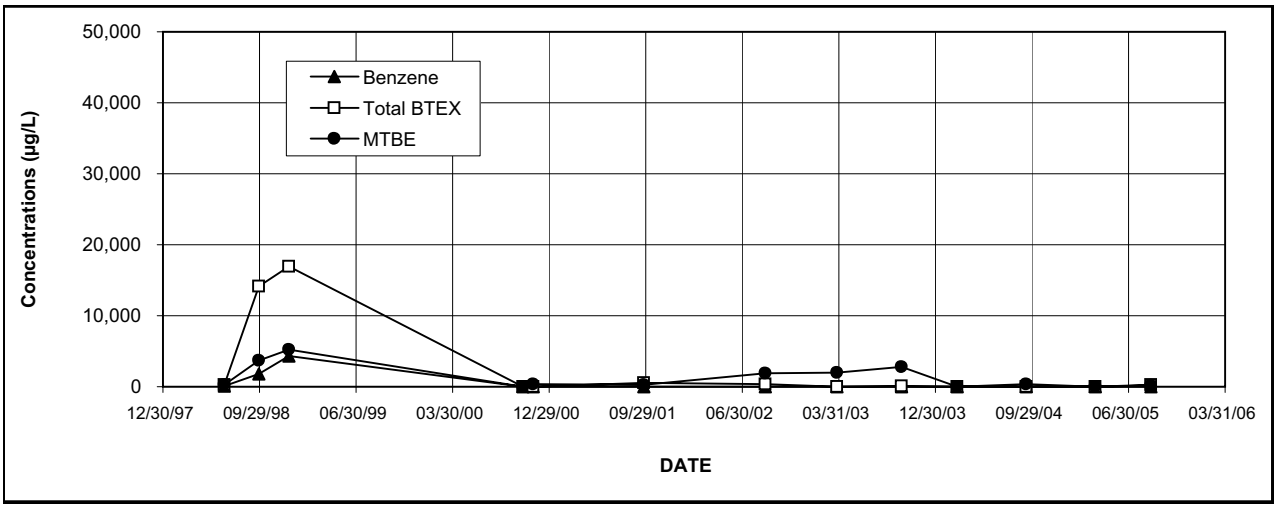


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
09/29/98	**12,751**	**195**	**291**	**1,430**	**4,040**	**6,990**	**958**	**2,840**	**835**
12/22/98	**19,211**	**429**	**271**	**2,430**	**5,810**	**10,700**	**1,120**	**3,520**	**638**
09/21/99	**6,407**	ND<50	ND<50	**367**	**1,980**	**4,060**	**618**	**1,730**	**261**
10/17/00	**409**	**6.7**	**5.0**	**15.7**	**167**	**221**	**85.6**	**244**	**27.8**
11/14/00	**816.3**	**513**	**200**	**54.3**	**402**	**160**	**129**	**555**	**161**
09/25/01	**2580**	**452**	ND<20.0	**130**	**1,050**	**1,400**	**365**	**1,060**	**126**
03/26/02	**399.4**	**789**	**12.3**	**17.1**	**238**	**132**	**96.4**	**174**	**48.2**
09/01/02	**725**	**225**	**13.8**	**41.2**	**347**	**323**	**103**	**387**	**72.7**
03/27/03	**260.8**	**305**	**16.2**	**66.2**	**50.4**	**128**	**23.6**	**68.8**	**12.6**
09/25/03	**140.95**	**149**	ND<2.5	**3.45**	**92.2**	**45.3**	**23.2**	**137**	**20.4**
03/16/04	**202.7**	**125**	ND<5.0	**10.2**	**104**	**88.5**	**25.1**	**200**	**30.2**
09/14/04	**384.3**	**167**	**12.3**	**17.0**	**176**	**179**	**53.0**	**189**	**23.1**
03/29/05	**98.0**	**45.6**	**7.8**	**2.2**	**53.8**	**34.2**	**12.0**	**89.0**	**8.5**
09/02/05	**228.0**	**50.1**	**14.1**	**7.4**	**128**	**78.5**	**14.2**	**105**	**11.9**
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter(µg/L)
ND- None detected at indicated detection limit.
TBQ - Trace below quantitation limit indicated.
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
* Well installed 23 April 1998
TMB - Trimethyl Benzene
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
Shaded concentrations exceed VGES.
All samples collected by ECS and analyzed by Endyne, Inc.
03/13/01 - not sampled

FIGURE 14. SP-3
VOC Concentrations

Londonderry Citgo
Londonderry, VT

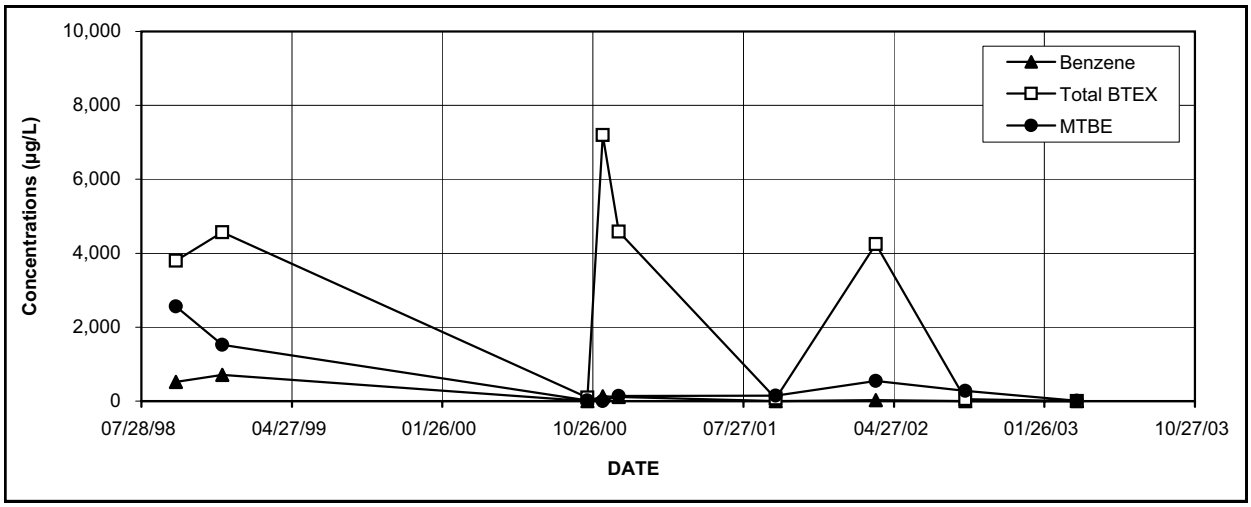


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
06/23/98	**291.7**	**256**	**80.9**	**13.0**	**80.8**	**117**	**---**	**---**	**---**
09/29/98	**14,150**	**3,690**	**1,840**	**4,980**	**1,430**	**5,900**	**634**	**1,620**	**345**
12/22/98	**16,920**	**5,200**	**4,360**	**4,980**	**1,620**	**5,960**	**634**	**1,750**	**343**
10/17/00	**30**	**6**	**<1.0**	**<1.0**	**10.2**	**19.3**	**7.5**	**25.5**	**3.9**
11/14/00	ND	**338**	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	**13.7**	ND<5.0
09/25/01	**515**	**294**	**8.0**	**37.4**	**177**	**293**	**121**	**112**	**75.1**
09/05/02	**355**	**1,920**	**27.3**	**10.1**	**119**	**199**	**165**	**142**	**36**
03/27/03	**19**	**1,970**	**19.4**	ND<10.0	ND<10.0	ND<20.0	ND<10.0	ND<10.0	ND<10.0
09/25/03	**52**	**2,750**	ND<25.0	ND<25.0	ND<25.0	**51.5**	**45**	**136**	ND<25.0
03/01/04	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/14/04	**32**	**367**	**31.7**	ND<5.0	ND<5.0	ND<10.0	ND<5.0	**7.2**	ND<5.0
03/29/05	**5**	**26.5**	**5.0**	ND<1.0	ND<1.0	ND<2.0	ND<1.0	ND<1.0	ND<1.0
09/02/05	**254**	**145**	**27.4**	**7.8**	**44.3**	**174**	**128**	**411**	**39.2**
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L).
ND- None detected at indicated detection limit.
TBQ - Trace below quantitation limit indicated.
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
* Well installed 23 April 1998
TMB - Trimethyl Benzene
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
Shaded concentrations exceed VGES.
3/9/00 and 3/13/01 - Not sampled

FIGURE 15. SP-4
VOC Concentrations

Londonderry Citgo
Londonderry, VT

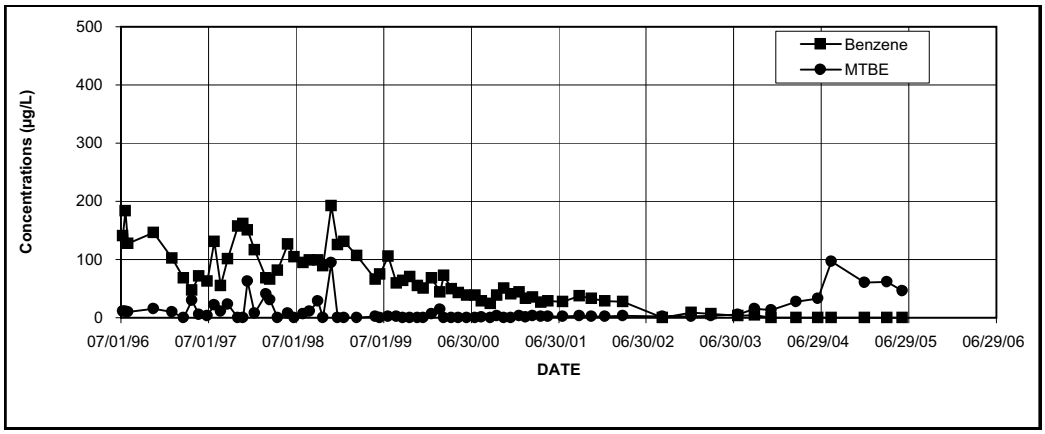


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,3,5 TMB	1,2,4 TMB	Naph-thalene
09/29/98	**3,800**	**2,560**	**515**	**TBQ <50**	**945**	**2,340**	**1,180**	**2,940**	**734**
12/22/98	**4,570**	**1,520**	**706**	**774.0**	**1,130**	**1,960**	**966**	**2,040**	**357**
10/17/00	**95**	**13.7**	**2.3**	**7.4**	**32.9**	**52.4**	**18.3**	**38.1**	**13.7**
11/14/00	**7,193**	ND<40.0	**127**	**386**	**1,480**	**5,200**	**823**	**2,550**	**490**
12/13/00	**4,583**	**137**	**109**	**394**	**1,220**	**2,860**	**551**	**1,470**	**366**
09/25/01	**66.3**	**143**	**4.0**	ND<2.0	**49.4**	**12.9**	**31.3**	**9.2**	**39.8**
03/26/02	**4,244.8**	**544**	**29.8**	**290**	**845**	**3,080**	**524**	**1,330**	**348**
09/05/02	**53.7**	**275**	**3.7**	ND<2.0	**40.0**	**10.0**	**18.1**	**22.2**	**18.0**
03/27/03	**3.6**	**12.0**	ND<1.0	ND<1.0	**3.6**	ND<2.0	**1.4**	**1.5**	**1.9**
09/25/03	NS	NS	NS	NS	NS	NS	NS	NS	NS
03/16/04	NS	NS	NS	NS	NS	NS	NS	NS	NS
03/29/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/02/05	NS	NS	NS	NS	NS	NS	NS	NS	NS
VGES	**---**	**40**	**5**	**1,000**	**700**	**10,000**	**4**	**5**	**20**

Notes: Results given in micrograms per liter (µg/L).
ND- None detected at indicated detection limit.
TBQ - Trace below quantitation limit indicated.
All samples collected by ECS and analyzed by Endyne, Inc.
VGES - Vermont Groundwater Enforcement Standards
BTEX - Benzene, toluene, ethyl benzene, & xylenes
MTBE - Methyl tertiary butyl ether
TMB - Trimethyl Benzene
Shaded concentrations exceed VGES.
3/09/00 and 3/13/01 - Not Sampled
9/25/03 - Not samped, well was dry.

FIGURE 16. LONDONDERRY SHOPPING CENTER
MAIN SUPPLY WELL
Influent VOC Concentrations

Londonderry Citgo
Londonderry, Vermont

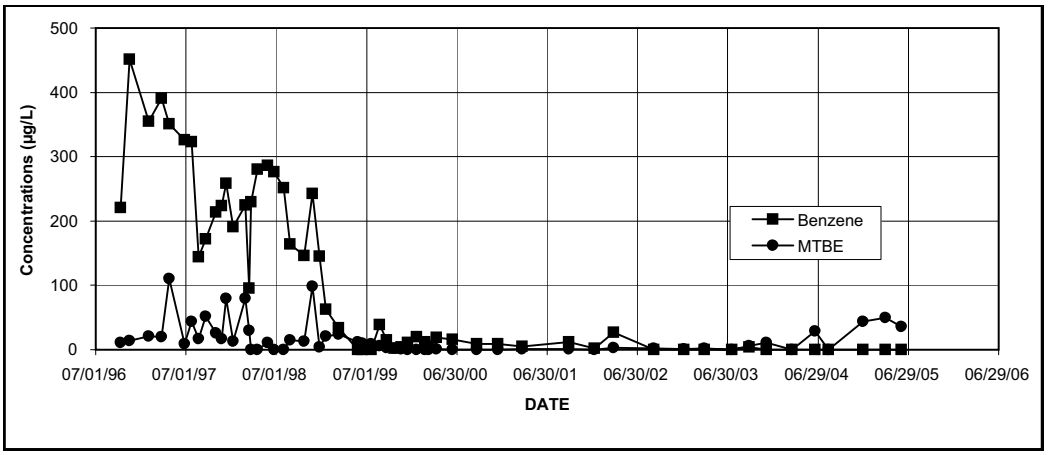


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,2,4-TMB	1,3,5 TMB	Naphthalene
09/19/00	**23.8**	ND<1	**23.8**	ND<1	ND<1	ND<1	ND <1	ND<1	ND<1
10/17/00	**38.0**	**2.8**	**38.0**	ND<1	ND<1	ND<1	**1.7**	ND<1	ND<1
11/14/00	**50.2**	ND<1	**50.2**	ND<1	ND<1	ND<1	**3.5**	ND<1	ND<1
12/13/00	**40.6**	ND<1	**40.6**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
01/17/01	**43.9**	**3.3**	**43.9**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
02/14/01	**33.2**	**1.4**	**33.2**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
03/13/01	**34.9**	**2.9**	**34.9**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
04/17/01	**26.3**	**2.0**	**26.3**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
05/17/01	**29.6**	**2.5**	**28.2**	ND<1	ND<1	**1.4**	ND<1	ND<1	ND<1
07/17/01	**27.2**	**2.7**	**27.2**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
09/25/01	**36.9**	**3.6**	**36.9**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
11/14/01	**33.5**	**2.2**	**33.5**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
01/08/02	**28.1**	**2.3**	**28.1**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
03/26/02	**27.0**	**2.8**	**27.0**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
09/05/02	ND	**2.1**	ND<1	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
01/03/03	**8.4**	**1.9**	**8.4**	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
03/27/03	**6.2**	**3.6**	**6.2**	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
07/18/03	**3.7**	**5.6**	**3.7**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
09/25/03	**4.1**	**15.4**	**4.1**	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
12/03/03	ND	**13.2**	ND<1	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
03/16/04	ND	**27.7**	ND<1	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
06/16/04	ND	**32.9**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
08/11/04	ND	**96.4**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
12/28/04	ND	**60.0**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
03/29/05	ND	**61.7**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
06/02/05	ND	**46.0**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
09/02/05	ND	**34.3**	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
MCL	**--**	**--**	**5**	**1,000**	**700**	**10,000**	**--**	**--**	**--**
VHA	**--**	**40**	**--**	**--**	**--**	**--**	**5**	**4**	**20**
VAL	**--**	**--**	**1**	**--**	**--**	**--**	**--**	**--**	**--**

Notes:
Results given in micrograms per liter (µg/L)
ND- None detected at indicated detection limit
TBQ - Trace below quantitation limit indicated.
BTEX - Benzene, toluene, ethyl benzene, & xylene
MTBE - Methyl tertiary butyl ethe
TMB - Trimethyl Benzene
MCL-Enforceable U.S. EPA Maximum Contaminant Levels for chemicals of concern in drinking water.
VHA-Vermont Health Advisories- guidelines for chemicals in drinking water that do not have MCL
VAL-Vermont Action Levels for eight chemicals of specific health concern in public water systems, established b
the Vermont Dept. of Health.
Shading indicates exceedance of MCL, VHA and/or VA

FIGURE 17.
THORNE-THOMPSON SUPPLY WELL
Influent VOC Concentrations

Londonderry Citgo
Londonderry, Vermont

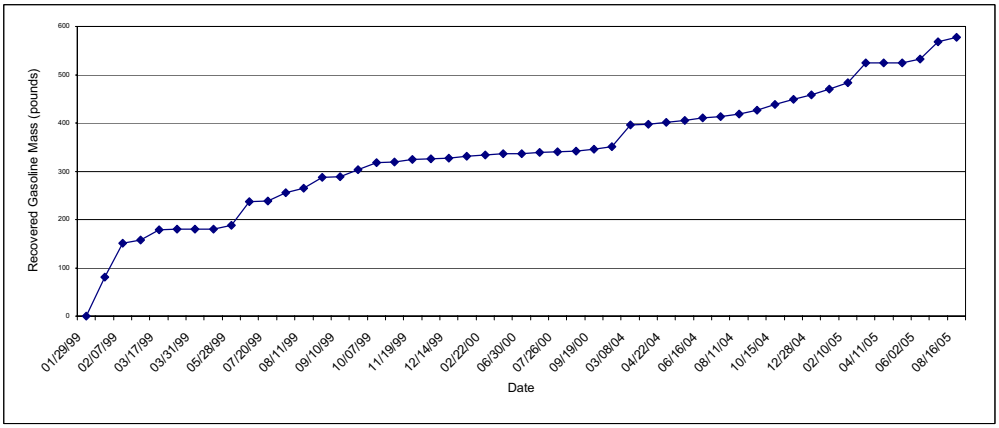


Date	Total BTEX	MTBE	Benzene	Toluene	Ethyl benzene	Xylenes	1,2,4-TMB	1,2,4-TMB	Naphthalene
09/19/00	**8.7**	ND<1	**8.7**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
12/13/00	**9.0**	ND<1	**9.0**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
03/22/01	**4.6**	**1.0**	**4.6**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
09/25/01	**12.0**	**1.38**	**12.0**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
01/08/02	**2.0**	ND<1	**2.0**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
03/26/02	**27.0**	**2.8**	**27.0**	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1
09/05/02	ND	**2.0**	ND<1	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
01/03/03	ND	**1.2**	ND<1	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
03/27/03	ND	**1.6**	ND<1	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
07/18/03	NS	NS	NS	NS	NS	NS	NS	NS	NS
09/25/03	**4.1**	**5.5**	**4.1**	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
12/03/03	ND	**10.7**	ND<1	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
03/16/04	NS	NS	NS	NS	NS	NS	NS	NS	NS
06/16/04	ND	**28.7**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
08/11/04	NS	NS	NS	NS	NS	NS	NS	NS	NS
12/28/04	ND	**43.9**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
03/29/05	ND	**50.1**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
06/02/05	ND	**36.2**	ND <1	ND <1	ND <1	ND <2	ND <1	ND <1	ND <1
09/02/05	ND	**45.1**	ND<1	ND<1	ND<1	ND<2	ND<1	ND<1	ND<1
MCL	**--**	**--**	**5**	**1,000**	**700**	**10,000**	**--**	**--**	**--**
VHA	**--**	**40**	**--**	**--**	**--**	**--**	**5**	**4**	**20**
VAL	**--**	**--**	**1**	**--**	**--**	**--**	**--**	**--**	**--**

Notes:

Results given in micrograms per liter (µg/L).
NS - Not Sampled
ND- None detected at indicated detection limit
TBQ - Trace below quantitation limit indicated
BTEX - Benzene, toluene, ethyl benzene, & xylene
MTBE - Methyl tertiary butyl ethe
TMB - Trimethyl Benzene
MCL-Enforceable U.S. EPA Maximum Contaminant Levels for chemicals of concern in drinking water.
VHA-Vermont Health Advisories- guidelines for chemicals in drinking water that do not have MCLs
VAL-Vermont Action Levels for eight chemicals of specific health concern in public water systems, established by the Vermont Dept. of Health.
Shading indicates exceedance of MCL, VHA and/or VAI

Figure 18.
Londonderry Citgo
Cumulative Gasoline Mass Recovery by AS/SVE System



Date	PID (ppm)	Air Flow Rate (scfm)	Gasoline Recovery Rate (lb / day)	Cumulative Recovered Gasoline Mass (lb)
01/29/99				0
01/30/99	456.0	77	11.473	80
02/07/99	352.0	77	8.856	151
03/11/99	248.0	77	6.240	157
03/17/99	40.0	75	3.576	179
03/18/99	40.0	75	0.980	180
03/31/99	0.2	25	0.002	180
04/15/99	9.0	22	0.035	180
05/28/99	4.9	134	0.177	188
07/16/99	41.1	134	1.007	237
07/20/99	33.3	111	1.208	239
08/03/99	33.3	111	1.208	255
08/11/99	31.9	115	1.204	265
08/23/99	79.4	89	1.855	287
09/10/99	58.8	70	1.345	289
09/21/99	58.8	70	1.345	303
10/07/99	1.3	105	0.859	317
10/20/99	5.4	112	0.119	319
11/19/99	5.8	93	0.188	324
12/03/99	2.5	88	0.123	326
12/14/99	4.2	93	0.099	327
01/19/00	1.6	104	0.093	331
02/22/00	4.4	104	0.102	334
03/08/00	7.1	104	0.195	337
06/30/00	--	--	--	337
07/17/00	1.3	123.2	0.156	340
07/26/00	0.0	109.0	0.025	340
08/14/00	4.5	93.4	0.078	341
09/19/00	1.9	88.0	0.108	345
02/18/04	325.0	48.8	5.182	350
03/08/04	4.6	41.0	2.418	396
03/16/04	5.4	42.8	0.068	397
04/22/04	12.0	48.6	0.130	402
05/11/04	18.3	40.0	0.219	406
06/16/04	4.1	37.3	0.141	411
07/06/04	5.2	77.6	0.087	413
08/11/04	8.8	77.6	0.177	419
09/14/04	8.0	87.3	0.226	427
10/15/04	19.2	85.3	0.384	439
11/09/04	11.0	92.6	0.439	450
12/28/04	3.2	58.5	0.175	458
01/18/05	52.0	64.4	0.554	470
02/10/05	6.5	61.9	0.604	484
03/29/05	75.6	68.3	0.873	525
04/11/05	--	--	--	525
05/23/05	--	--	--	525
06/02/05	24.0	103.4	0.811	533
07/18/05	18.0	117.0	0.756	568
08/16/05	0.0	126.8	0.358	578
09/02/05	--	--	--	578

Notes:
eq. 1.) Recovery Rate = (ppm volume) (1xe-6) (cfm) (1440 min/day) (86 lbs/mole) / (379 cf/moles of gas)
2.) 2/22/00 air flow rate estimated based on 1/19/00 and 3/09/00 data
3.) 4/11/05 and 5/23/05 PID was malfunctioning, so the recovery rates were not calculated.
4.) SVE system down upon arrival.

APPENDIX A

LABORATORY REPORT FORMS

Report Date:
12-Sep-05 16:04

☑ Final Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Environmental Compliance Services
65 Millet Street; Suite 301
Richmond, VT 05477
Attn: Jaymi Cleland

Project: Londonderry Citgo - Londonderry, VT
Project #: VT96-0093

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SA33638-01	MW-S2	Ground Water	02-Sep-05 13:30	07-Sep-05 09:45
SA33638-02	MW-S3	Ground Water	02-Sep-05 13:25	07-Sep-05 09:45
SA33638-03	MW-3	Ground Water	02-Sep-05 14:10	07-Sep-05 09:45
SA33638-04	MW-5	Ground Water	02-Sep-05 14:05	07-Sep-05 09:45
SA33638-05	MW-6	Ground Water	02-Sep-05 13:35	07-Sep-05 09:45
SA33638-06	MW-7	Ground Water	02-Sep-05 13:40	07-Sep-05 09:45
SA33638-07	MW-8	Ground Water	02-Sep-05 13:50	07-Sep-05 09:45
SA33638-08	SP-1	Ground Water	02-Sep-05 13:55	07-Sep-05 09:45
SA33638-09	SP-2	Ground Water	02-Sep-05 14:15	07-Sep-05 09:45
SA33638-10	SP-3	Ground Water	02-Sep-05 14:00	07-Sep-05 09:45
SA33638-11	MM-MID F	Ground Water	02-Sep-05 14:25	07-Sep-05 09:45
SA33638-12	MM-MID B	Ground Water	02-Sep-05 14:20	07-Sep-05 09:45
SA33638-13	Trip Blank	Ground Water	02-Sep-05 07:30	07-Sep-05 09:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. All applicable NELAC requirements have been met.
Please note that this report contains 19 pages of analytical data including Chain of Custody document(s).
This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Massachusetts Certification # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538/2972
New York # 11393/11840
Rhode Island # 98
USDA # S-51435
Vermont # VT-11393

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method indicated. Please refer to our "Quality" webpage at www.spectrum-analytical.com for a full listing of our current certifications.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-S2	VT96-0093	Ground Water	02-Sep-05 13:30	07-Sep-05
SA33638-01				

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	09-Sep-05	10-Sep-05	5090591	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	29.1	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*94.0*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*95.8*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*108*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*107*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-S3	VT96-0093	Ground Water	02-Sep-05 13:25	07-Sep-05
SA33638-02				

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	09-Sep-05	10-Sep-05	5090591	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	1.0	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*92.2*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*95.0*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*109*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*109*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-3	VT96-0093	Ground Water	02-Sep-05 14:10	07-Sep-05
SA33638-03				

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	09-Sep-05	10-Sep-05	5090591	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*94.0*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*95.0*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*109*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*109*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-5	VT96-0093	Ground Water	02-Sep-05 14:05	07-Sep-05
SA33638-04				

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	09-Sep-05	10-Sep-05	5090591	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*94.0*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*98.4*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*114*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*112*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-6	VT96-0093	Ground Water	02-Sep-05 13:35	07-Sep-05
SA33638-05				

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	09-Sep-05	10-Sep-05	5090591	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*93.0*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*94.8*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*111*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*111*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-7 SA33638-06	VT96-0093	Ground Water	02-Sep-05 13:40	07-Sep-05

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	09-Sep-05	10-Sep-05	5090591	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	1.6	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*91.2*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*93.8*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*112*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*110*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MW-8 SA33638-07	VT96-0093	Ground Water	02-Sep-05 13:50	07-Sep-05

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	1.2	1.0 µg/l	1	SW846 8260B	09-Sep-05	10-Sep-05	5090591	RLJ	
100-41-4	Ethylbenzene	2.1	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	2.4	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	1.4	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	8.5	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	1.8	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	7.7	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*93.2*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*95.6*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*111*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*109*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP-1	VT96-0093	Ground Water	02-Sep-05 13:55	07-Sep-05
SA33638-08				

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	13.3	1.0 µg/l	1	SW846 8260B	12-Sep-05	12-Sep-05	5090657	RLJ	
100-41-4	Ethylbenzene	21.9	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	253	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	2.8	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	2.5	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	23.2	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	2.4	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	8.2	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	2.3	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*96.4*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*90.8*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*109*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*107*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP-2	VT96-0093	Ground Water	02-Sep-05 14:15	07-Sep-05
SA33638-09				

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	14.1	1.0 µg/l	1	SW846 8260B	09-Sep-05	10-Sep-05	5090591	RLJ	
100-41-4	Ethylbenzene	128	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	50.1	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	11.9	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	7.4	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	105	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	14.2	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	63.4	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	15.1	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*98.4*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*100*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*117*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*113*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
SP-3	VT96-0093	Ground Water	02-Sep-05 14:00	07-Sep-05
SA33638-10				

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	27.4	5.0 µg/l	5	SW846 8260B	12-Sep-05	12-Sep-05	5090657	RLJ	
100-41-4	Ethylbenzene	44.3	5.0 µg/l	5	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	145	5.0 µg/l	5	"	"	"	"	"	
91-20-3	Naphthalene	39.2	5.0 µg/l	5	"	"	"	"	"	
108-88-3	Toluene	7.8	5.0 µg/l	5	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	411	5.0 µg/l	5	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	128	5.0 µg/l	5	"	"	"	"	"	
1330-20-7	m,p-Xylene	158	10.0 µg/l	5	"	"	"	"	"	
95-47-6	o-Xylene	15.8	5.0 µg/l	5	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*95.4*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*92.2*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*108*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*108*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MM-MID F SA33638-11	VT96-0093	Ground Water	02-Sep-05 14:25	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method SW846 5030 Water MS							
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	12-Sep-05	12-Sep-05	5090657	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	8.8	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*94.4*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*93.6*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*114*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*111*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MM-MID B SA33638-12	VT96-0093	Ground Water	02-Sep-05 14:20	07-Sep-05

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	8.5	1.0 µg/l	1	SW846 8260B	12-Sep-05	12-Sep-05	5090657	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	7.4	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*92.6*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*88.6*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*113*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*113*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Trip Blank SA33638-13	VT96-0093	Ground Water	02-Sep-05 07:30	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method	SW846 5030 Water MS						
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	12-Sep-05	12-Sep-05	5090657	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*93.6*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*95.8*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*115*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*112*	*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5090591 - SW846 5030 Water MS										
Blank (5090591-BLK1)				Prepared & Analyzed: 09-Sep-05						
Benzene	BRL	1.0	µg/l							
Ethylbenzene	BRL	1.0	µg/l							
Methyl tert-butyl ether	BRL	1.0	µg/l							
Naphthalene	BRL	1.0	µg/l							
Toluene	BRL	1.0	µg/l							
1,2,4-Trimethylbenzene	BRL	1.0	µg/l							
1,3,5-Trimethylbenzene	BRL	1.0	µg/l							
m,p-Xylene	BRL	2.0	µg/l							
o-Xylene	BRL	1.0	µg/l							
Surrogate: 4-Bromofluorobenzene	*46.7*		µg/l	*50.0*		*93.4*	*70-130*			
Surrogate: Toluene-d8	*48.5*		µg/l	*50.0*		*97.0*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*51.1*		µg/l	*50.0*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*51.9*		µg/l	*50.0*		*104*	*70-130*			
LCS (5090591-BS1)				Prepared: 09-Sep-05 Analyzed: 10-Sep-05						
Benzene	19.9		µg/l	20.0		99.5	70-130			
Ethylbenzene	20.7		µg/l	20.0		104	70-130			
Methyl tert-butyl ether	21.7		µg/l	20.0		108	70-130			
Naphthalene	18.0		µg/l	20.0		90.0	70-130			
Toluene	19.2		µg/l	20.0		96.0	70-130			
1,2,4-Trimethylbenzene	19.8		µg/l	20.0		99.0	70-130			
1,3,5-Trimethylbenzene	20.2		µg/l	20.0		101	70-130			
m,p-Xylene	43.1		µg/l	40.0		108	70-130			
o-Xylene	21.6		µg/l	20.0		108	70-130			
Surrogate: 4-Bromofluorobenzene	*49.9*		µg/l	*50.0*		*99.8*	*70-130*			
Surrogate: Toluene-d8	*48.7*		µg/l	*50.0*		*97.4*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*50.6*		µg/l	*50.0*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*49.3*		µg/l	*50.0*		*98.6*	*70-130*			
LCS Dup (5090591-BSD1)				Prepared: 09-Sep-05 Analyzed: 10-Sep-05						
Benzene	19.4		µg/l	20.0		97.0	70-130	2.54	30	
Ethylbenzene	19.9		µg/l	20.0		99.5	70-130	4.42	30	
Methyl tert-butyl ether	22.7		µg/l	20.0		114	70-130	5.41	30	
Naphthalene	19.3		µg/l	20.0		96.5	70-130	6.97	30	
Toluene	18.6		µg/l	20.0		93.0	70-130	3.17	30	
1,2,4-Trimethylbenzene	19.2		µg/l	20.0		96.0	70-130	3.08	30	
1,3,5-Trimethylbenzene	19.8		µg/l	20.0		99.0	70-130	2.00	30	
m,p-Xylene	41.5		µg/l	40.0		104	70-130	3.77	30	
o-Xylene	21.2		µg/l	20.0		106	70-130	1.87	30	
Surrogate: 4-Bromofluorobenzene	*49.7*		µg/l	*50.0*		*99.4*	*70-130*			
Surrogate: Toluene-d8	*48.6*		µg/l	*50.0*		*97.2*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*52.5*		µg/l	*50.0*		*105*	*70-130*			
Surrogate: Dibromofluoromethane	*52.9*		µg/l	*50.0*		*106*	*70-130*			
Matrix Spike (5090591-MS1)	**Source: SA33507-01**			Prepared: 09-Sep-05 Analyzed: 10-Sep-05						
Benzene	19.7		µg/l	20.0	BRL	98.5	70-130			
Chlorobenzene	21.4		µg/l	20.0	BRL	107	70-130			
1,1-Dichloroethene	20.3		µg/l	20.0	1.40	94.5	70-130			
Toluene	18.6		µg/l	20.0	BRL	93.0	70-130			
Trichloroethene	19.0		µg/l	20.0	0.700	91.5	70-130			
Surrogate: 4-Bromofluorobenzene	*49.8*		µg/l	*50.0*		*99.6*	*70-130*			
Surrogate: Toluene-d8	*47.4*		µg/l	*50.0*		*94.8*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*59.0*		µg/l	*50.0*		*118*	*70-130*			
Surrogate: Dibromofluoromethane	*57.0*		µg/l	*50.0*		*114*	*70-130*			
Matrix Spike Dup (5090591-MSD1)	**Source: SA33507-01**			Prepared: 09-Sep-05 Analyzed: 10-Sep-05						

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5090591 - SW846 5030 Water MS										
Matrix Spike Dup (5090591-MSD1)	**Source: SA33507-01**			Prepared: 09-Sep-05 Analyzed: 10-Sep-05						
Benzene	19.0		µg/l	20.0	BRL	95.0	70-130	3.62	30	
Chlorobenzene	20.7		µg/l	20.0	BRL	104	70-130	2.84	30	
1,1-Dichloroethene	29.1		µg/l	20.0	1.40	138	70-130	37.4	30	QM-07
Toluene	18.9		µg/l	20.0	BRL	94.5	70-130	1.60	30	
Trichloroethene	21.8		µg/l	20.0	0.700	106	70-130	14.7	30	
Surrogate: 4-Bromofluorobenzene	*49.2*		µg/l	*50.0*		*98.4*	*70-130*			
Surrogate: Toluene-d8	*50.2*		µg/l	*50.0*		*100*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*55.8*		µg/l	*50.0*		*112*	*70-130*			
Surrogate: Dibromofluoromethane	*55.5*		µg/l	*50.0*		*111*	*70-130*			
Batch 5090657 - SW846 5030 Water MS										
Blank (5090657-BLK1)				Prepared & Analyzed: 12-Sep-05						
Benzene	BRL	1.0	µg/l							
Ethylbenzene	BRL	1.0	µg/l							
Methyl tert-butyl ether	BRL	1.0	µg/l							
Naphthalene	BRL	1.0	µg/l							
Toluene	BRL	1.0	µg/l							
1,2,4-Trimethylbenzene	BRL	1.0	µg/l							
1,3,5-Trimethylbenzene	BRL	1.0	µg/l							
m,p-Xylene	BRL	2.0	µg/l							
o-Xylene	BRL	1.0	µg/l							
Surrogate: 4-Bromofluorobenzene	*46.7*		µg/l	*50.0*		*93.4*	*70-130*			
Surrogate: Toluene-d8	*48.6*		µg/l	*50.0*		*97.2*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*48.5*		µg/l	*50.0*		*97.0*	*70-130*			
Surrogate: Dibromofluoromethane	*53.0*		µg/l	*50.0*		*106*	*70-130*			
LCS (5090657-BS1)				Prepared & Analyzed: 12-Sep-05						
Benzene	18.9		µg/l	20.0		94.5	70-130			
Ethylbenzene	19.8		µg/l	20.0		99.0	70-130			
Methyl tert-butyl ether	21.4		µg/l	20.0		107	70-130			
Naphthalene	17.9		µg/l	20.0		89.5	70-130			
Toluene	18.3		µg/l	20.0		91.5	70-130			
1,2,4-Trimethylbenzene	19.0		µg/l	20.0		95.0	70-130			
1,3,5-Trimethylbenzene	19.2		µg/l	20.0		96.0	70-130			
m,p-Xylene	40.9		µg/l	40.0		102	70-130			
o-Xylene	20.8		µg/l	20.0		104	70-130			
Surrogate: 4-Bromofluorobenzene	*49.0*		µg/l	*50.0*		*98.0*	*70-130*			
Surrogate: Toluene-d8	*48.4*		µg/l	*50.0*		*96.8*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.2*		µg/l	*50.0*		*98.4*	*70-130*			
Surrogate: Dibromofluoromethane	*53.4*		µg/l	*50.0*		*107*	*70-130*			
LCS Dup (5090657-BSD1)				Prepared & Analyzed: 12-Sep-05						
Benzene	18.5		µg/l	20.0		92.5	70-130	2.14	30	
Ethylbenzene	19.2		µg/l	20.0		96.0	70-130	3.08	30	
Methyl tert-butyl ether	21.7		µg/l	20.0		108	70-130	0.930	30	
Naphthalene	18.2		µg/l	20.0		91.0	70-130	1.66	30	
Toluene	17.1		µg/l	20.0		85.5	70-130	6.78	30	
1,2,4-Trimethylbenzene	18.5		µg/l	20.0		92.5	70-130	2.67	30	
1,3,5-Trimethylbenzene	18.6		µg/l	20.0		93.0	70-130	3.17	30	
m,p-Xylene	39.5		µg/l	40.0		98.8	70-130	3.19	30	
o-Xylene	20.2		µg/l	20.0		101	70-130	2.93	30	
Surrogate: 4-Bromofluorobenzene	*49.4*		µg/l	*50.0*		*98.8*	*70-130*			
Surrogate: Toluene-d8	*46.9*		µg/l	*50.0*		*93.8*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*51.3*		µg/l	*50.0*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*53.0*		µg/l	*50.0*		*106*	*70-130*			

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BRL	Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and

Validated by:
Hanibal C. Tayeh, Ph.D.
Nicole Brown

SDG 33638

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CHAIN OF CUSTODY RECORD

Page 1 of 2

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS
65 MILLER ST, SUITE 301
RICHMOND, VT 05477

Project Mgr.: J. CLELAND

Invoice To: → SAME

P.O. No.: _____ RQN: _____

Project No.: V796-0093
Site Name: LONDONDERRY CITGO
Location: LONDONDERRY State: VT
Sampler(s): B. BACHMANN & M. GUERINO

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: 8021B VT SCAN	QA Reporting Notes: (check if needed)
33638-01	MW-S2	9/2/05	13:30	G	GW	2	2				X	State specific reporting standards *If applicable, please list below.*
-02	MW-S3		13:25									☐ Provide MCP CAM Report Were all field QC requirements met as per MADEP CAM Section 2.0? ☐ Yes ☐ No *(Response required for CAM report)*
-03	MW-3		14:10									
-04	MW-5		14:05									
-05	MW-6		13:35									
-06	MW-7		13:40									
-07	MW-8		13:50									
-08	SP-1		13:55									
-09	SP-2		14:15									
-10	SP-3		14:00									

☐ Fax results when available to (____) _____
☒ E-mail to jcleland@ecsconsult.com
EDD Format _____

Condition upon receipt: ☒ Iced ☐ Ambient ☐ °C 3

Relinquished by:	Received by:	Date:	Time:
Matthew J Guerino	Matthew J Guerino	9/2/05	17:30
Matthew J Guerino		9/6/05	15:55
Fed Ex		9/7/05	945

33638

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HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 2 of 2

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☒ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS
65 MILLET ST, SUITE 201
RICHMOND, VT 05477

Project Mgr.: J. CLELAND

Invoice To: ~~ECS~~ SAME

P.O. No.: _____ RQN: _____

Project No.: VT96-0033
Site Name: LONDONDERRY CITGO
Location: LONDONDERRY State: VT
Sampler(s): B. BACHMANN & M. GUERIN

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8=$NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW=Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: 8021B VTSCAN	QA Reporting Notes: (check if needed)
33638-11	MM-MIDF	9/2/05	14:25	G	GW	Z	2				X	State specific reporting standards *If applicable, please list below.* _____ ☐ Provide MCP CAM Report Were all field QC requirements met as per MADEP CAM Section 2.0? ☐ Yes ☐ No *(Response required for CAM report)*
-12	MM-MIDB	"	14:20	"	"	"	"				"	
-13	TRIP BLANK	"	07:30	"	"	"	"				"	

☐ Fax results when available to (____) _____
☒ E-mail to jcleland@ecsconsult.com
EDD Format _____
Condition upon receipt: ☐ Iced ☐ Ambient ☐ °C 3

Relinquished by:	Received by:	Date:	Time:
Matthew J Guerin	Matthew J Guerin	9/2/05	17:30
Matthew J Guerin		9/6/05	15:55
FedEx	V Knowles	9/7/05	945

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Report Date:
20-Sep-05 11:40

☐ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
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Laboratory Report

Environmental Compliance Services
65 Millet Street; Suite 301
Richmond, VT 05477
Attn: Jaymi Cleland

Project: Londonderry Citgo - Londonderry, VT
Project #: VT96-0093

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SA33901-01	T-T Inf	Ground Water	02-Sep-05 14:25	07-Sep-05 09:45
SA33901-02	T-T Effluent	Ground Water	02-Sep-05 14:15	07-Sep-05 09:45
SA33901-03	T-T Mid Carbon	Ground Water	02-Sep-05 14:20	07-Sep-05 09:45
SA33901-04	Rogers	Ground Water	02-Sep-05 15:10	07-Sep-05 09:45
SA33901-05	MM-Inf	Ground Water	02-Sep-05 14:35	07-Sep-05 09:45
SA33901-06	MM-Eff	Ground Water	02-Sep-05 14:15	07-Sep-05 09:45
SA33901-07	MM-Mid	Ground Water	02-Sep-05 14:30	07-Sep-05 09:45
SA33901-08	Duplicate	Ground Water	02-Sep-05 15:15	07-Sep-05 09:45

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. All applicable NELAC requirements have been met.
Please note that this report contains 19 pages of analytical data plus Chain of Custody document(s).
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Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538/2972
New York # 11393/11840
Rhode Island # 98
USDA # S-51435
Vermont # VT-11393

ACCREDITED IN ACCORDANCE WITH nelac

Authorized by:

Hanibal C. Tayeh, Ph.D.
President/Laboratory Director

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Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
T-T Inf	VT96-0093	Ground Water	02-Sep-05 14:25	07-Sep-05
SA33901-01				

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method SW846 5030 Water MS							
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	16-Sep-05	16-Sep-05	5091089	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	45.1	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*94.4*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*112*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*110*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*110*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
T-T Effluent SA33901-02	VT96-0093	Ground Water	02-Sep-05 14:15	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method SW846 5030 Water MS							
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	16-Sep-05	16-Sep-05	5091089	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*93.4*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*111*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*110*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*111*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
T-T Mid Carbon SA33901-03	VT96-0093	Ground Water	02-Sep-05 14:20	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method SW846 5030 Water MS							
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	16-Sep-05	16-Sep-05	5091089	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	8.4	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*94.4*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*112*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*111*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*111*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Rogers SA33901-04	VT96-0093	Ground Water	02-Sep-05 15:10	07-Sep-05

CAS No.	*Analyte(s)*	*Result*	**RDL/Units*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Batch*	*Analyst*	*Flag*
Volatile Organic Compounds										
Volatile Organic Compounds by 8260B			Prepared by method SW846 5030 Water MS							
71-43-2	Benzene	BRL	1.0 µg/l	1	SW846 8260B	16-Sep-05	16-Sep-05	5091089	RLJ	
100-41-4	Ethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	4.4	1.0 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	1.0 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	1.0 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	2.0 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	1.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*94.4*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*112*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*111*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*117*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MM-Inf SA33901-05	VT96-0093	Ground Water	02-Sep-05 14:35	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
524.2 Purgeable Organic Compounds			Prepared by method SW846 5030 Water MS							
67-64-1	Acetone	BRL	10.0 µg/l	1	EPA 524.2	13-Sep-05	14-Sep-05	5090819	RLJ	
107-13-1	Acrylonitrile	BRL	1.0 µg/l	1	"	"	"	"	"	
71-43-2	Benzene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-86-1	Bromobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
74-97-5	Bromochloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-25-2	Bromoform	BRL	0.5 µg/l	1	"	"	"	"	"	
74-83-9	Bromomethane	BRL	0.5 µg/l	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	BRL	10.0 µg/l	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-15-0	Carbon disulfide	BRL	0.5 µg/l	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL	0.5 µg/l	1	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-00-3	Chloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
67-66-3	Chloroform	BRL	0.5 µg/l	1	"	"	"	"	"	
74-87-3	Chloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL	0.5 µg/l	1	"	"	"	"	"	
74-95-3	Dibromomethane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	BRL	0.5 µg/l	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
100-41-4	Ethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL	0.5 µg/l	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	BRL	10.0 µg/l	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
99-87-6	4-Isopropyltoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	34.3	0.5 µg/l	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MM-Inf SA33901-05	VT96-0093	Ground Water	02-Sep-05 14:35	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
524.2 Purgeable Organic Compounds			Prepared by method SW846 5030 Water MS							
108-10-1	4-Methyl-2-pentanone (MIBK)	BRL	10.0 µg/l	1	EPA 524.2	13-Sep-05	14-Sep-05	5090819	RLJ	
75-09-2	Methylene chloride	BRL	0.5 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	0.5 µg/l	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
100-42-5	Styrene	BRL	0.5 µg/l	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	0.5 µg/l	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-01-6	Trichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	BRL	0.5 µg/l	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL	0.5 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	0.5 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	0.5 µg/l	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	BRL	10.0 µg/l	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	4.4	0.5 µg/l	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	BRL	10.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*95.8*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*104*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*98.6*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*107*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MM-Eff SA33901-06	VT96-0093	Ground Water	02-Sep-05 14:15	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
524.2 Purgeable Organic Compounds			Prepared by method SW846 5030 Water MS							
67-64-1	Acetone	BRL	10.0 µg/l	1	EPA 524.2	13-Sep-05	14-Sep-05	5090819	RLJ	
107-13-1	Acrylonitrile	BRL	1.0 µg/l	1	"	"	"	"	"	
71-43-2	Benzene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-86-1	Bromobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
74-97-5	Bromochloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-25-2	Bromoform	BRL	0.5 µg/l	1	"	"	"	"	"	
74-83-9	Bromomethane	BRL	0.5 µg/l	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	BRL	10.0 µg/l	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-15-0	Carbon disulfide	BRL	0.5 µg/l	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL	0.5 µg/l	1	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-00-3	Chloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
67-66-3	Chloroform	BRL	0.5 µg/l	1	"	"	"	"	"	
74-87-3	Chloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL	0.5 µg/l	1	"	"	"	"	"	
74-95-3	Dibromomethane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	BRL	0.5 µg/l	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
100-41-4	Ethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL	0.5 µg/l	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	BRL	10.0 µg/l	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	0.6	0.5 µg/l	1	"	"	"	"	"	
99-87-6	4-Isopropyltoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MM-Eff SA33901-06	VT96-0093	Ground Water	02-Sep-05 14:15	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
524.2 Purgeable Organic Compounds			Prepared by method SW846 5030 Water MS							
108-10-1	4-Methyl-2-pentanone (MIBK)	BRL	10.0 µg/l	1	EPA 524.2	13-Sep-05	14-Sep-05	5090819	RLJ	
75-09-2	Methylene chloride	BRL	0.5 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	0.5 µg/l	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
100-42-5	Styrene	BRL	0.5 µg/l	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	0.5 µg/l	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-01-6	Trichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	BRL	0.5 µg/l	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL	0.5 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	0.5 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	0.5 µg/l	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	BRL	10.0 µg/l	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	BRL	10.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*95.2*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*103*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*98.6*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*106*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MM-Mid SA33901-07	VT96-0093	Ground Water	02-Sep-05 14:30	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
524.2 Purgeable Organic Compounds			Prepared by method SW846 5030 Water MS							
67-64-1	Acetone	BRL	10.0 µg/l	1	EPA 524.2	13-Sep-05	14-Sep-05	5090819	RLJ	
107-13-1	Acrylonitrile	BRL	1.0 µg/l	1	"	"	"	"	"	
71-43-2	Benzene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-86-1	Bromobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
74-97-5	Bromochloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-25-2	Bromoform	BRL	0.5 µg/l	1	"	"	"	"	"	
74-83-9	Bromomethane	BRL	0.5 µg/l	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	BRL	10.0 µg/l	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-15-0	Carbon disulfide	BRL	0.5 µg/l	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL	0.5 µg/l	1	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-00-3	Chloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
67-66-3	Chloroform	BRL	0.5 µg/l	1	"	"	"	"	"	
74-87-3	Chloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL	0.5 µg/l	1	"	"	"	"	"	
74-95-3	Dibromomethane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	BRL	0.5 µg/l	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
100-41-4	Ethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL	0.5 µg/l	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	BRL	10.0 µg/l	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
99-87-6	4-Isopropyltoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	8.3	0.5 µg/l	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
MM-Mid SA33901-07	VT96-0093	Ground Water	02-Sep-05 14:30	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
524.2 Purgeable Organic Compounds			Prepared by method SW846 5030 Water MS							
108-10-1	4-Methyl-2-pentanone (MIBK)	BRL	10.0 µg/l	1	EPA 524.2	13-Sep-05	14-Sep-05	5090819	RLJ	
75-09-2	Methylene chloride	BRL	0.5 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	0.5 µg/l	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
100-42-5	Styrene	BRL	0.5 µg/l	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	0.5 µg/l	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-01-6	Trichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	BRL	0.5 µg/l	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL	0.5 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	0.5 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	0.5 µg/l	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	BRL	10.0 µg/l	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	BRL	10.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*94.8*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*104*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*98.8*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*107*	*70-130 %*		"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Duplicate SA33901-08	VT96-0093	Ground Water	02-Sep-05 15:15	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
524.2 Purgeable Organic Compounds			Prepared by method SW846 5030 Water MS							
67-64-1	Acetone	BRL	10.0 µg/l	1	EPA 524.2	13-Sep-05	14-Sep-05	5090819	RLJ	
107-13-1	Acrylonitrile	BRL	1.0 µg/l	1	"	"	"	"	"	
71-43-2	Benzene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-86-1	Bromobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
74-97-5	Bromochloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-27-4	Bromodichloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-25-2	Bromoform	BRL	0.5 µg/l	1	"	"	"	"	"	
74-83-9	Bromomethane	BRL	0.5 µg/l	1	"	"	"	"	"	
78-93-3	2-Butanone (MEK)	BRL	10.0 µg/l	1	"	"	"	"	"	
104-51-8	n-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
135-98-8	sec-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
98-06-6	tert-Butylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-15-0	Carbon disulfide	BRL	0.5 µg/l	1	"	"	"	"	"	
56-23-5	Carbon tetrachloride	BRL	0.5 µg/l	1	"	"	"	"	"	
108-90-7	Chlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-00-3	Chloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
67-66-3	Chloroform	BRL	0.5 µg/l	1	"	"	"	"	"	
74-87-3	Chloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-49-8	2-Chlorotoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
106-43-4	4-Chlorotoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
96-12-8	1,2-Dibromo-3-chloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
124-48-1	Dibromochloromethane	BRL	0.5 µg/l	1	"	"	"	"	"	
106-93-4	1,2-Dibromoethane (EDB)	BRL	0.5 µg/l	1	"	"	"	"	"	
74-95-3	Dibromomethane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-50-1	1,2-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
541-73-1	1,3-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
106-46-7	1,4-Dichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-71-8	Dichlorodifluoromethane (Freon12)	BRL	0.5 µg/l	1	"	"	"	"	"	
75-34-3	1,1-Dichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
107-06-2	1,2-Dichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
75-35-4	1,1-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
156-59-2	cis-1,2-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
156-60-5	trans-1,2-Dichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
78-87-5	1,2-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
142-28-9	1,3-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
594-20-7	2,2-Dichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
563-58-6	1,1-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
10061-01-5	cis-1,3-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
10061-02-6	trans-1,3-Dichloropropene	BRL	0.5 µg/l	1	"	"	"	"	"	
100-41-4	Ethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
87-68-3	Hexachlorobutadiene	BRL	0.5 µg/l	1	"	"	"	"	"	
591-78-6	2-Hexanone (MBK)	BRL	10.0 µg/l	1	"	"	"	"	"	
98-82-8	Isopropylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
99-87-6	4-Isopropyltoluene	BRL	0.5 µg/l	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	35.7	0.5 µg/l	1	"	"	"	"	"	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Duplicate SA33901-08	VT96-0093	Ground Water	02-Sep-05 15:15	07-Sep-05

CAS No.	Analyte(s)	Result	*RDL/Units	Dilution	Method Ref.	Prepared	Analyzed	Batch	Analyst	Flag
Volatile Organic Compounds										
524.2 Purgeable Organic Compounds			Prepared by method SW846 5030 Water MS							
108-10-1	4-Methyl-2-pentanone (MIBK)	BRL	10.0 µg/l	1	EPA 524.2	13-Sep-05	14-Sep-05	5090819	RLJ	
75-09-2	Methylene chloride	BRL	0.5 µg/l	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL	0.5 µg/l	1	"	"	"	"	"	
103-65-1	n-Propylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
100-42-5	Styrene	BRL	0.5 µg/l	1	"	"	"	"	"	
630-20-6	1,1,1,2-Tetrachloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-34-5	1,1,2,2-Tetrachloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
127-18-4	Tetrachloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-88-3	Toluene	BRL	0.5 µg/l	1	"	"	"	"	"	
87-61-6	1,2,3-Trichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
120-82-1	1,2,4-Trichlorobenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
71-55-6	1,1,1-Trichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-00-5	1,1,2-Trichloroethane	BRL	0.5 µg/l	1	"	"	"	"	"	
79-01-6	Trichloroethene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-69-4	Trichlorofluoromethane (Freon 11)	BRL	0.5 µg/l	1	"	"	"	"	"	
96-18-4	1,2,3-Trichloropropane	BRL	0.5 µg/l	1	"	"	"	"	"	
95-63-6	1,2,4-Trimethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
108-67-8	1,3,5-Trimethylbenzene	BRL	0.5 µg/l	1	"	"	"	"	"	
75-01-4	Vinyl chloride	BRL	0.5 µg/l	1	"	"	"	"	"	
1330-20-7	m,p-Xylene	BRL	0.5 µg/l	1	"	"	"	"	"	
95-47-6	o-Xylene	BRL	0.5 µg/l	1	"	"	"	"	"	
109-99-9	Tetrahydrofuran	BRL	10.0 µg/l	1	"	"	"	"	"	
994-05-8	Tert-amyl methyl ether	4.6	0.5 µg/l	1	"	"	"	"	"	
637-92-3	Ethyl tert-butyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
108-20-3	Di-isopropyl ether	BRL	0.5 µg/l	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	BRL	10.0 µg/l	1	"	"	"	"	"	
Surrogate recoveries:										
460-00-4	*4-Bromofluorobenzene*	*95.8*	*70-130 %*		"	"	"	"	"	
2037-26-5	*Toluene-d8*	*103*	*70-130 %*		"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*99.0*	*70-130 %*		"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*107*	*70-130 %*		"	"	"	"	"	

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5090819 - SW846 5030 Water MS										
Blank (5090819-BLK1)				Prepared & Analyzed: 13-Sep-05						
Acetone	BRL	10.0	µg/l							
Acrylonitrile	BRL	1.0	µg/l							
Benzene	BRL	0.5	µg/l							
Bromobenzene	BRL	0.5	µg/l							
Bromochloromethane	BRL	0.5	µg/l							
Bromodichloromethane	BRL	0.5	µg/l							
Bromoform	BRL	0.5	µg/l							
Bromomethane	BRL	0.5	µg/l							
2-Butanone (MEK)	BRL	10.0	µg/l							
n-Butylbenzene	BRL	0.5	µg/l							
sec-Butylbenzene	BRL	0.5	µg/l							
tert-Butylbenzene	BRL	0.5	µg/l							
Carbon disulfide	BRL	0.5	µg/l							
Carbon tetrachloride	BRL	0.5	µg/l							
Chlorobenzene	BRL	0.5	µg/l							
Chloroethane	BRL	0.5	µg/l							
Chloroform	BRL	0.5	µg/l							
Chloromethane	BRL	0.5	µg/l							
2-Chlorotoluene	BRL	0.5	µg/l							
4-Chlorotoluene	BRL	0.5	µg/l							
1,2-Dibromo-3-chloropropane	BRL	0.5	µg/l							
Dibromochloromethane	BRL	0.5	µg/l							
1,2-Dibromoethane (EDB)	BRL	0.5	µg/l							
Dibromomethane	BRL	0.5	µg/l							
1,2-Dichlorobenzene	BRL	0.5	µg/l							
1,3-Dichlorobenzene	BRL	0.5	µg/l							
1,4-Dichlorobenzene	BRL	0.5	µg/l							
Dichlorodifluoromethane (Freon12)	BRL	0.5	µg/l							
1,1-Dichloroethane	BRL	0.5	µg/l							
1,2-Dichloroethane	BRL	0.5	µg/l							
1,1-Dichloroethene	BRL	0.5	µg/l							
cis-1,2-Dichloroethene	BRL	0.5	µg/l							
trans-1,2-Dichloroethene	BRL	0.5	µg/l							
1,2-Dichloropropane	BRL	0.5	µg/l							
1,3-Dichloropropane	BRL	0.5	µg/l							
2,2-Dichloropropane	BRL	0.5	µg/l							
1,1-Dichloropropene	BRL	0.5	µg/l							
cis-1,3-Dichloropropene	BRL	0.5	µg/l							
trans-1,3-Dichloropropene	BRL	0.5	µg/l							
Ethylbenzene	BRL	0.5	µg/l							
Hexachlorobutadiene	BRL	0.5	µg/l							
2-Hexanone (MBK)	BRL	10.0	µg/l							
Isopropylbenzene	BRL	0.5	µg/l							
4-Isopropyltoluene	BRL	0.5	µg/l							
Methyl tert-butyl ether	BRL	0.5	µg/l							
4-Methyl-2-pentanone (MIBK)	BRL	10.0	µg/l							
Methylene chloride	BRL	0.5	µg/l							
Naphthalene	BRL	0.5	µg/l							
n-Propylbenzene	BRL	0.5	µg/l							
Styrene	BRL	0.5	µg/l							
1,1,1,2-Tetrachloroethane	BRL	0.5	µg/l							
1,1,2,2-Tetrachloroethane	BRL	0.5	µg/l							
Tetrachloroethene	BRL	0.5	µg/l							
Toluene	BRL	0.5	µg/l							

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5090819 - SW846 5030 Water MS										
Blank (5090819-BLK1)				Prepared & Analyzed: 13-Sep-05						
1,2,3-Trichlorobenzene	BRL	0.5	µg/l							
1,2,4-Trichlorobenzene	BRL	0.5	µg/l							
1,1,1-Trichloroethane	BRL	0.5	µg/l							
1,1,2-Trichloroethane	BRL	0.5	µg/l							
Trichloroethene	BRL	0.5	µg/l							
Trichlorofluoromethane (Freon 11)	BRL	0.5	µg/l							
1,2,3-Trichloropropane	BRL	0.5	µg/l							
1,2,4-Trimethylbenzene	BRL	0.5	µg/l							
1,3,5-Trimethylbenzene	BRL	0.5	µg/l							
Vinyl chloride	BRL	0.5	µg/l							
m,p-Xylene	BRL	0.5	µg/l							
o-Xylene	BRL	0.5	µg/l							
Tetrahydrofuran	BRL	10.0	µg/l							
Tert-amyl methyl ether	BRL	0.5	µg/l							
Ethyl tert-butyl ether	BRL	0.5	µg/l							
Di-isopropyl ether	BRL	0.5	µg/l							
Tert-Butanol / butyl alcohol	BRL	10.0	µg/l							
Surrogate: 4-Bromofluorobenzene	*47.3*		µg/l	*50.0*		*94.6*	*70-130*			
Surrogate: Toluene-d8	*51.4*		µg/l	*50.0*		*103*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.7*		µg/l	*50.0*		*99.4*	*70-130*			
Surrogate: Dibromofluoromethane	*53.5*		µg/l	*50.0*		*107*	*70-130*			
LCS (5090819-BS1)				Prepared & Analyzed: 13-Sep-05						
Acetone	16.2		µg/l	20.0		81.0	70-130			
Acrylonitrile	20.0		µg/l	20.0		100	70-130			
Benzene	21.1		µg/l	20.0		106	80-120			
Bromobenzene	20.3		µg/l	20.0		102	80-120			
Bromochloromethane	20.5		µg/l	20.0		102	80-120			
Bromodichloromethane	21.6		µg/l	20.0		108	80-120			
Bromoform	18.4		µg/l	20.0		92.0	80-120			
Bromomethane	19.4		µg/l	20.0		97.0	80-120			
2-Butanone (MEK)	17.1		µg/l	20.0		85.5	70-130			
n-Butylbenzene	16.2		µg/l	20.0		81.0	80-120			
sec-Butylbenzene	19.9		µg/l	20.0		99.5	80-120			
tert-Butylbenzene	20.0		µg/l	20.0		100	80-120			
Carbon disulfide	20.1		µg/l	20.0		100	70-130			
Carbon tetrachloride	21.6		µg/l	20.0		108	80-120			
Chlorobenzene	21.5		µg/l	20.0		108	80-120			
Chloroethane	21.9		µg/l	20.0		110	80-120			
Chloroform	20.9		µg/l	20.0		104	80-120			
Chloromethane	24.1		µg/l	20.0		120	80-120			
2-Chlorotoluene	21.1		µg/l	20.0		106	80-120			
4-Chlorotoluene	20.9		µg/l	20.0		104	80-120			
1,2-Dibromo-3-chloropropane	16.3		µg/l	20.0		81.5	80-120			
Dibromochloromethane	23.3		µg/l	20.0		116	80-120			
1,2-Dibromoethane (EDB)	20.3		µg/l	20.0		102	80-120			
Dibromomethane	20.0		µg/l	20.0		100	80-120			
1,2-Dichlorobenzene	18.8		µg/l	20.0		94.0	80-120			
1,3-Dichlorobenzene	21.8		µg/l	20.0		109	80-120			
1,4-Dichlorobenzene	19.2		µg/l	20.0		96.0	80-120			
Dichlorodifluoromethane (Freon12)	24.9		µg/l	20.0		124	80-120			QC-1
1,1-Dichloroethane	20.6		µg/l	20.0		103	80-120			
1,2-Dichloroethane	19.0		µg/l	20.0		95.0	80-120			
1,1-Dichloroethene	20.0		µg/l	20.0		100	80-120			
cis-1,2-Dichloroethene	21.3		µg/l	20.0		106	80-120			

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5090819 - SW846 5030 Water MS										
LCS (5090819-BS1)				Prepared & Analyzed: 13-Sep-05						
trans-1,2-Dichloroethene	20.4		µg/l	20.0		102	80-120			
1,2-Dichloropropane	20.2		µg/l	20.0		101	80-120			
1,3-Dichloropropane	20.5		µg/l	20.0		102	80-120			
2,2-Dichloropropane	16.5		µg/l	20.0		82.5	80-120			
1,1-Dichloropropene	19.0		µg/l	20.0		95.0	80-120			
cis-1,3-Dichloropropene	19.0		µg/l	20.0		95.0	80-120			
trans-1,3-Dichloropropene	18.6		µg/l	20.0		93.0	80-120			
Ethylbenzene	20.2		µg/l	20.0		101	80-120			
Hexachlorobutadiene	16.0		µg/l	20.0		80.0	80-120			
2-Hexanone (MBK)	14.6		µg/l	20.0		73.0	70-130			
Isopropylbenzene	19.1		µg/l	20.0		95.5	80-120			
4-Isopropyltoluene	18.7		µg/l	20.0		93.5	80-120			
Methyl tert-butyl ether	18.7		µg/l	20.0		93.5	80-120			
4-Methyl-2-pentanone (MIBK)	14.6		µg/l	20.0		73.0	70-130			
Methylene chloride	21.2		µg/l	20.0		106	80-120			
Naphthalene	16.3		µg/l	20.0		81.5	80-120			
n-Propylbenzene	19.9		µg/l	20.0		99.5	80-120			
Styrene	20.0		µg/l	20.0		100	80-120			
1,1,1,2-Tetrachloroethane	22.1		µg/l	20.0		110	80-120			
1,1,2,2-Tetrachloroethane	19.7		µg/l	20.0		98.5	80-120			
Tetrachloroethene	20.5		µg/l	20.0		102	80-120			
Toluene	19.7		µg/l	20.0		98.5	80-120			
1,2,3-Trichlorobenzene	17.9		µg/l	20.0		89.5	80-120			
1,2,4-Trichlorobenzene	17.0		µg/l	20.0		85.0	80-120			
1,1,1-Trichloroethane	19.6		µg/l	20.0		98.0	80-120			
1,1,2-Trichloroethane	20.8		µg/l	20.0		104	80-120			
Trichloroethene	20.8		µg/l	20.0		104	80-120			
Trichlorofluoromethane (Freon 11)	21.0		µg/l	20.0		105	80-120			
1,2,3-Trichloropropane	19.8		µg/l	20.0		99.0	80-120			
1,2,4-Trimethylbenzene	20.2		µg/l	20.0		101	80-120			
1,3,5-Trimethylbenzene	19.6		µg/l	20.0		98.0	80-120			
Vinyl chloride	23.9		µg/l	20.0		120	80-120			
m,p-Xylene	42.7		µg/l	40.0		107	80-120			
o-Xylene	21.9		µg/l	20.0		110	80-120			
Tetrahydrofuran	17.5		µg/l	20.0		87.5	70-130			
Tert-amyl methyl ether	22.9		µg/l	20.0		114	70-130			
Ethyl tert-butyl ether	18.5		µg/l	20.0		92.5	70-130			
Di-isopropyl ether	19.9		µg/l	20.0		99.5	70-130			
Tert-Butanol / butyl alcohol	163		µg/l	200		81.5	70-130			
Surrogate: 4-Bromofluorobenzene	*52.8*		µg/l	*50.0*		*106*	*70-130*			
Surrogate: Toluene-d8	*52.3*		µg/l	*50.0*		*105*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*46.3*		µg/l	*50.0*		*92.6*	*70-130*			
Surrogate: Dibromofluoromethane	*52.0*		µg/l	*50.0*		*104*	*70-130*			
Matrix Spike (5090819-MS1)	**Source: SA33896-01**			Prepared: 13-Sep-05 Analyzed: 14-Sep-05						
Benzene	14.5		µg/l	15.0	BRL	96.7	80-120			
Chlorobenzene	16.4		µg/l	15.0	BRL	109	80-120			
1,1-Dichloroethene	11.8		µg/l	15.0	BRL	78.7	80-120			QM-07
Toluene	14.7		µg/l	15.0	BRL	98.0	80-120			
Trichloroethene	14.2		µg/l	15.0	BRL	94.7	80-120			
Surrogate: 4-Bromofluorobenzene	*47.7*		µg/l	*50.0*		*95.4*	*70-130*			
Surrogate: Toluene-d8	*50.7*		µg/l	*50.0*		*101*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*47.8*		µg/l	*50.0*		*95.6*	*70-130*			
Surrogate: Dibromofluoromethane	*52.0*		µg/l	*50.0*		*104*	*70-130*			

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5090819 - SW846 5030 Water MS										
Matrix Spike Dup (5090819-MSD1)	**Source: SA33896-01**			Prepared: 13-Sep-05 Analyzed: 14-Sep-05						
Benzene	14.0		µg/l	15.0	BRL	93.3	80-120	3.58	20	
Chlorobenzene	15.9		µg/l	15.0	BRL	106	80-120	2.79	20	
1,1-Dichloroethene	11.4		µg/l	15.0	BRL	76.0	80-120	3.49	20	QM-07
Toluene	14.2		µg/l	15.0	BRL	94.7	80-120	3.43	20	
Trichloroethene	13.9		µg/l	15.0	BRL	92.7	80-120	2.13	20	
Surrogate: 4-Bromofluorobenzene	*47.4*		µg/l	*50.0*		*94.8*	*70-130*			
Surrogate: Toluene-d8	*50.9*		µg/l	*50.0*		*102*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*48.3*		µg/l	*50.0*		*96.6*	*70-130*			
Surrogate: Dibromofluoromethane	*52.0*		µg/l	*50.0*		*104*	*70-130*			
Batch 5091089 - SW846 5030 Water MS										
Blank (5091089-BLK1)				Prepared & Analyzed: 16-Sep-05						
Benzene	BRL	1.0	µg/l							
Ethylbenzene	BRL	1.0	µg/l							
Methyl tert-butyl ether	BRL	1.0	µg/l							
Naphthalene	BRL	1.0	µg/l							
Toluene	BRL	1.0	µg/l							
1,2,4-Trimethylbenzene	BRL	1.0	µg/l							
1,3,5-Trimethylbenzene	BRL	1.0	µg/l							
m,p-Xylene	BRL	2.0	µg/l							
o-Xylene	BRL	1.0	µg/l							
Surrogate: 4-Bromofluorobenzene	*47.1*		µg/l	*50.0*		*94.2*	*70-130*			
Surrogate: Toluene-d8	*55.7*		µg/l	*50.0*		*111*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*55.2*		µg/l	*50.0*		*110*	*70-130*			
Surrogate: Dibromofluoromethane	*55.5*		µg/l	*50.0*		*111*	*70-130*			
LCS (5091089-BS1)				Prepared & Analyzed: 16-Sep-05						
Benzene	21.4		µg/l	20.0		107	70-130			
Ethylbenzene	18.9		µg/l	20.0		94.5	70-130			
Methyl tert-butyl ether	19.6		µg/l	20.0		98.0	70-130			
Naphthalene	15.6		µg/l	20.0		78.0	70-130			
Toluene	20.1		µg/l	20.0		100	70-130			
1,2,4-Trimethylbenzene	19.1		µg/l	20.0		95.5	70-130			
1,3,5-Trimethylbenzene	18.5		µg/l	20.0		92.5	70-130			
m,p-Xylene	40.4		µg/l	40.0		101	70-130			
o-Xylene	21.0		µg/l	20.0		105	70-130			
Surrogate: 4-Bromofluorobenzene	*52.8*		µg/l	*50.0*		*106*	*70-130*			
Surrogate: Toluene-d8	*54.5*		µg/l	*50.0*		*109*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*49.5*		µg/l	*50.0*		*99.0*	*70-130*			
Surrogate: Dibromofluoromethane	*54.0*		µg/l	*50.0*		*108*	*70-130*			
LCS Dup (5091089-BSD1)				Prepared & Analyzed: 16-Sep-05						
Benzene	20.7		µg/l	20.0		104	70-130	2.84	30	
Ethylbenzene	18.4		µg/l	20.0		92.0	70-130	2.68	30	
Methyl tert-butyl ether	19.6		µg/l	20.0		98.0	70-130	0.00	30	
Naphthalene	16.1		µg/l	20.0		80.5	70-130	3.15	30	
Toluene	19.4		µg/l	20.0		97.0	70-130	3.05	30	
1,2,4-Trimethylbenzene	18.7		µg/l	20.0		93.5	70-130	2.12	30	
1,3,5-Trimethylbenzene	18.2		µg/l	20.0		91.0	70-130	1.63	30	
m,p-Xylene	39.4		µg/l	40.0		98.5	70-130	2.51	30	
o-Xylene	20.6		µg/l	20.0		103	70-130	1.92	30	
Surrogate: 4-Bromofluorobenzene	*53.2*		µg/l	*50.0*		*106*	*70-130*			
Surrogate: Toluene-d8	*54.2*		µg/l	*50.0*		*108*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*48.7*		µg/l	*50.0*		*97.4*	*70-130*			
Surrogate: Dibromofluoromethane	*54.1*		µg/l	*50.0*		*108*	*70-130*			

Analyte(s)	Result	*RDL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch 5091089 - SW846 5030 Water MS										
Matrix Spike (5091089-MS1)	**Source: SA34052-13**			Prepared & Analyzed: 16-Sep-05						
Benzene	13.5		µg/l	15.0	BRL	90.0	70-130			
Chlorobenzene	16.5		µg/l	15.0	BRL	110	70-130			
1,1-Dichloroethene	11.9		µg/l	15.0	BRL	79.3	70-130			
Toluene	14.7		µg/l	15.0	BRL	98.0	70-130			
Trichloroethene	13.5		µg/l	15.0	BRL	90.0	70-130			
Surrogate: 4-Bromofluorobenzene	*46.6*		µg/l	*50.0*		*93.2*	*70-130*			
Surrogate: Toluene-d8	*51.3*		µg/l	*50.0*		*103*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*51.9*		µg/l	*50.0*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*51.6*		µg/l	*50.0*		*103*	*70-130*			
Matrix Spike Dup (5091089-MSD1)	**Source: SA34052-13**			Prepared & Analyzed: 16-Sep-05						
Benzene	13.4		µg/l	15.0	BRL	89.3	70-130	0.781	30	
Chlorobenzene	16.6		µg/l	15.0	BRL	111	70-130	0.905	30	
1,1-Dichloroethene	11.7		µg/l	15.0	BRL	78.0	70-130	1.65	30	
Toluene	14.8		µg/l	15.0	BRL	98.7	70-130	0.712	30	
Trichloroethene	13.5		µg/l	15.0	BRL	90.0	70-130	0.00	30	
Surrogate: 4-Bromofluorobenzene	*46.8*		µg/l	*50.0*		*93.6*	*70-130*			
Surrogate: Toluene-d8	*51.6*		µg/l	*50.0*		*103*	*70-130*			
Surrogate: 1,2-Dichloroethane-d4	*52.0*		µg/l	*50.0*		*104*	*70-130*			
Surrogate: Dibromofluoromethane	*51.5*		µg/l	*50.0*		*103*	*70-130*			

Notes and Definitions

QC-1 Analyte out of acceptance range.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

BRL Below Reporting Limit - Analyte NOT DETECTED at or above the reporting limit

dry Sample results reported on a dry weight basis

NR Not Reported

RPD Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure The method blank is used to document contamination resulting from the analytical process

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples These compounds are spiked into all blanks, standards, and

Validated by:
Hanibal C. Tayeh, Ph.D.

SA33901

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: ECS
65 MALLET ST, SUITE 301
RICHMOND, NH 03470

Project Mgr.: J. CLELAND

Invoice To: ~~ECS~~ SAME
INTSA 3094

P.O. No.: _____ RQN: _____

Project No.: 96-0023
Site Name: LONDONDERRY CITGO
Location: LONDONDERRY State: NH
Sampler(s): B. BACHMANN & M GUERRINO

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses: 524.2	VT Scan	QA Reporting Notes: (check if needed)
SA33901-01	T-T INF	9/2/05	14:25	G	GW	2	2				X	✓	State specific reporting standards *If applicable, please list below.* _____ ☐ Provide MCP CAM Report Were all field QC requirements met as per MADEP CAM Section 2.0? ☐ Yes ☐ No *(Response required for CAM report)*
02	T-T EFFLUENT		14:15									✓	
03	TT - MID CARBON		14:20									✓	
04	ROGERS		15:10									✓	
05	MM-INF		14:35										
06	MM- EFF		14:15										
07	MM MID [illegible]		14:30										
08	DUPLICATE		15:15										
													Per client fax 9/7/05

☐ Fax results when available to (____) _____
☒ E-mail to jcleland@ecsconsult.com
EDD Format _____

Condition upon receipt: ☒ Iced ☐ Ambient ☐ °C 3

Relinquished by:	Received by:	Date:	Time:
[signature]	[signature]	9/6/05	17:30
[signature]	[signature]	9/5/05	15:55
Fed Ex	[signature]	9/7/05	945

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☐ Standard TAT - 7 to 10 business days
- ☐ Rush TAT - Date Needed: _____
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: _____

Invoice To: _____

Project No.: _____

Site Name: _____

Location: _____ State: _____

Project Mgr.: _____

P.O. No.: _____ RQN: _____

Sampler(s): _____

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH_3OH 8= $NaHSO_4$ 9=_____ 10=_____

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	Preservative	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analyses:								QA Reporting Notes: (check if needed)
																			State specific reporting standards *If applicable, please list below.* _____ ☐ Provide MCP CAM Report Were all field QC requirements met as per MADEP CAM Section 2.0? ☐ Yes ☐ No *(Response required for CAM report)*

☐ Fax results when available to (_____) _____

☐ E-mail to _____

EDD Format _____

Condition upon receipt: ☐ Iced ☐ Ambient ☐ °C _____

Relinquished by:	Received by:	Date:	Time: