

**INVESTIGATION AND REMEDIATION
OF SUBSURFACE CONTAMINATION AT
WYMAN'S METER AND TANK EQUIPMENT
BERLIN, VERMONT**

November 1987

Prepared By:

**THE JOHNSON COMPANY, INC.
#5 State Street
Montpelier, Vermont 05602**

(802)229-4600

THE JOHNSON COMPANY, INC.
5 State Street, Montpelier, Vermont 05602
802/229-4600

Environmental Sciences and Engineering

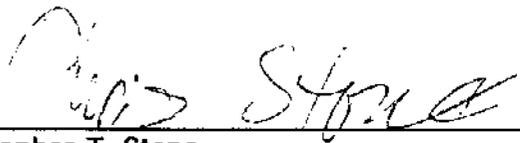
This report has been prepared for Wyman's Meter and Tank Equipment in Berlin, Vermont by The Johnson Company, Inc., in Montpelier, Vermont.

Prepared By:



Seth Pitkin
Geologist

Reviewed By:



Christopher T. Stone
Senior Hydrogeologist

SP/djm

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INTRODUCTION

Wyman's Meter and Tank Equipment, Inc., is a petroleum equipment sales and service organization located at the intersection of Route 12 and Dog River Road (see Figure 1) in Berlin, Vermont. Wyman's has offered services, including the cleaning and disposal of used fuel storage tanks, at their present location since 1967.

Tank cleaning consisted of steaming the tanks on a concrete pad. Water from the cleaning process ran off the pad, into a drainage swale and then into a drop inlet. The drop inlet lead to a culvert composed of a series of old sign posts. The posts tapered from approximately one foot square at the base to three quarters of a foot at the top. The posts were placed with the base upgradient and with the tapered end inserted into the base of the next post. This culvert extended approximately 60 feet to the first in a series of five old storage tanks laid end to end which, in turn, lead to a small pond. The pond allowed any non aqueous liquid to separate from water. The pond discharges through a multi stage gravity separator to an unnamed tributary of the Dog River. A permit allowing this discharge expired on August 31, 1986 (Appendix A). The system described above was also utilized for the disposal of sewage from the Wyman's plant.

Analysis of soil samples taken by the Division of Waste Management Personnel December 5, 1985 from the pond and the separator outlet revealed the presence of benzene, toluene, xylene, lead and cadmium. This prompted a letter, dated March 5, 1986, from John Malter, Director of the Waste Management Division, State of

FIGURE 1

Site Plan

NEWCITY SPRING

DOG RIVER ROAD



GROUNDWATER FLOW
IN LOWER AQUIFER
0.018 FT/FOOT

LATERALLY EXTENDED WELL

TANK EXCAVATION

SOIL EXCAVATION

LEW1

REC1

TP2

MWP

MINE

SEPARATOR

CULVERT SYSTEM

POND

SOIL EXCAVATION

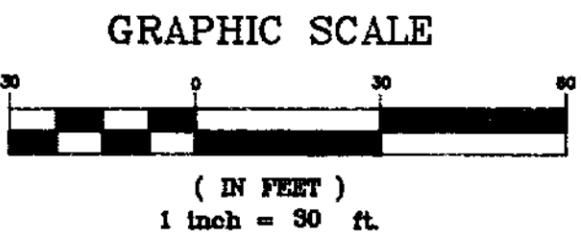
SOIL EXCAVATION

CURTAIN DRAIN

FORMER CONCRETE
WASH PAD AND
EXISTING RAMP

STORAGE

MAIN BUILDING



- ⊙ TP2 TEST PIT LOCATION WITH OBSERVATION WELL
- ⊙ TP3 HAND INSTALLED OBSERVATION WELL. WATER LEVELS ONLY.
- ⊙ MWP TWO INCH DIAMETER PVC CHEMICAL MONITORING WELL.
- REC1 THREE FOOT DIAMETER RECOVERY WELL.
- LEW1 FOUR INCH DIAMETER PVC RECOVERY/OBSERVATION WELL.
- - - SOIL EXCAVATION BOUNDARY

VERMONT ROUTE 12

| Rev No | Date | Description | Made by | Checked by | App'd by |
|---|------|-------------|---------|------------|----------|
| WYMANS, INCORPORATED MONTPELIER, VERMONT SOIL EXCAVATION AREAS | | | | | |
| Sheet 1 of 1 | | | | | |
| Scale 1"=30' | | | | | |
| Drawn by DBH | | | | | |
| Checked by SQP | | | | | |
| Date NOV 1987 | | | | | |
| Dwg. No. | | | | | |
| THE JOHNSON COMPANY, INC. Environmental Science and Engineering 5 STATE STREET MONTPELIER, VERMONT 05602 | | | | | |

Vermont Agency of Natural Resources (see Appendix B). The letter concluded that these contaminated soils posed a threat to the environment, named Wyman's as a responsible party and requested that Wyman's: 1) hire a qualified consultant to develop a plan to evaluate the extent of soil and ground water contamination on site, 2) develop a plan for the remediation of soils and ground water, and 3) to implement remediation by July 1, 1986.

Wyman's retained the services of the Johnson Company, Inc., to assist them in meeting the requests of the State.

A preliminary investigation was undertaken by Christopher T. Stone, Senior Hydrogeologist with The Johnson Company. A report entitled "Remedial Investigation Proposal Wyman's Meter and Tank Equipment, Inc.", dated October 17, 1986 was submitted in fulfillment of items 1 and 2 of the March 5 Order.

Soil samples taken from the drainage ditch, the steaming pad and the pond on September 4, 1986 revealed the presence of lead, barium, cadmium and chromium. PCBs were also detected in the pond sample (see Table 1).

Chemical Analyses of Wyman's Soils
Sampled on 9/4/86 (mg/kg)
Table 1

| Parameter | Ditch | Sample Name (WMT-INV) | | |
|-----------|--------|-----------------------|--------|-----------|
| | | Separator | Stream | Composite |
| Lead | 15,000 | 380 | 570 | 2,300 |
| Barium | 2,000 | 93 | 167 | 400 |
| Cadmium | 13.8 | 4.1 | 6.1 | 6.4 |
| Chromium | 121 | 41 | 27 | 90 |
| Arsenic | <25 | <25 | <25 | <25 |
| PCBs | <40 | 0.27 | <0.1 | <20 |

Cedric R. Sanborn, Chief of the State Environmental Release Management Section responded to the Johnson Company proposal in a letter dated November 17, 1986 (see Appendix C). The letter required:

- 1) The analysis of water supply samples as well as a sample from the unnamed tributary to the Dog River;**

- 2) Provide an approved on site septic system and cease discharge of sewage to the Dog River Tributary;**

- 3) Diversion of ground waters feeding the pond;**

- 4) Perform test pit and soil sampling procedures to delineate near surface contamination;**

- 5) Excavation and stockpiling of contaminated soils to commence in the fall of 1986;**

- 6) A Phase II investigation to determine impact to ground water in the spring of 1987; and**

- 7) Clean up of the separation pond.**

A March 1987 report entitled "Wyman's Site Investigation and Remediation Proposal", addressed the points raised in the November 17 letter. At that time the

sewage discharge had been diverted to a new system, water samples had been taken, test pits had been logged and soil samples analyzed.

This report details all investigative and remedial activities undertaken subsequent to the October 1986 report.

MONITORING WELL INSTALLATION

Adams Engineering was on-site on May 11 and 12 1987 for boring and monitoring well installation. A total of seven wells were installed. Four wells (MW-1, MW-2, MW-3, MW-5) were completed in the deeper sand aquifer. MW-1 was screened from 40 to 30 feet below ground surface. The borehole was advanced to 45 feet in search of a lower impeding layer. At this depth hydrostatic pressure caused sand to flow into the augers so that the boring could not be advanced any further. A bentonite plug was placed at 6.5 feet. MW-1A was then placed in the same borehole screened from 5.5 feet to 3.5 feet. Wells were paired, shallow and deep, to provide information as to the vertical component of ground water flow. All wells were constructed of 2 inch schedule 40, flush coupled PVC with factory slotted .020 size screen. Wells were packed with silica sand and were developed by flushing followed by pumping. See Figure 1 for well locations. Well construction details are available in Appendix D. Four two inch diameter, hand slotted, PVC piezometers (H1-H4) were hand installed in the swamp just north of the property line to provide water table elevations.

GEOLOGY

The Wyman's site is located in the Dog River Valley in the Green Mountain Physiographic Province (Centennial Geologic Map of Vermont, 1961). Bedrock is comprised of phyllite and schist of the Missisquoi formation. An outcrop is visible across Dog River Road (near its Intersection with Route 12) from Wyman's. Bedrock is also exposed to the northeast in a road cut on I-89. The rock itself has an extremely low permeability although water may move along foliations, joints or fractures.

Unconsolidated material over bedrock consists primarily of out wash. Borings performed on-site in May 1987 (see Appendix D) reveal medium to coarse sand ranging from silty to gravelly. One boring (MW-1) extended to 45 feet below ground surface (b.g.s.) without encountering a lower impeding layer. Driller's logs of three water supply wells on adjoining property belonging to Ken Weston (see Appendix E) list sand and gravel to depths ranging from 28 to 60 feet below ground surface (b.g.s.). Overlying the sand on the Wyman's site is a layer of dense gray silt, probably lacustrine and/or alluvial, several feet in thickness. This layer is found at depths ranging from 7 to 15 feet b.g.s. Above the silt on the north end of the site is a layer of organic material. This layer represents the natural ground surface as it existed prior to 1967. Much of the site at that time consisted of a swampy area in which the surficial material was a black organic rich muck. This swamp area extends, in it's natural condition, north from the Wyman's property line. Above this layer soils are silty sand and sandy silt fill. Immediately to the northeast of the Wyman's plant a kame forms a small hill.

Test pits dug prior to the construction of the new Wyman's septic system show that the kame is mantled with gray silt similar to that found below.

HYDROGEOLOGY

The aquifer beneath the Wyman's site appears to be deep (>45 feet) and is composed of medium to coarse sand. A confining layer overlying the aquifer is made up of dense gray silt.

In the upper portion of the aquifer on the northern end of the site ground water flows upward at a gradient of 0.014. The horizontal component of flow is slightly north of west (Figure 1) at a gradient of 0.010. The upward gradient is due to ground water flowing from the hill to the north and discharging to the pond and swamp. Ground water is evident seeping out all along the toe of the slope of the hill. One of these seeps serves as the water supply for the Bob Newcity residence. Water table elevation measurements (Appendix F) show this spring to have a hydraulic head greater than any measured at Wyman's. Water cannot move to areas of higher head, therefore the Newcity spring is not threatened by activities that have occurred in the tank cleaning area.

Another seep formerly served as a water supply spring on the Wyman's property. This spring has been diverted by the curtain drain north of the pond. The hydraulic head of the pond is lower than that measured in MW-6 indicating that ground water is flowing upward into the pond. At MW-1A and MW-4 ground water is moving downward at gradients of 0.05 and 0.11 respectively. These downward gradients are much stronger than the horizontal gradient resulting in

primarily downward movement of ground water in the confining layer. Flow in the aquifer itself is probably horizontal due to its thickness and areal extent.

Slug tests, both rising and falling head, were performed on MW-1 and MW-6 on October 2, 1987. A solid tube (slug) five feet in length was lowered into the water. A Geokon C10 data logger was used to record water level changes at one second intervals. When the water level stabilized the slug was removed and the rise of the water level was recorded with the data logger. The change in head was plotted against time on four cycle semi-log paper. Plots and hydraulic conductivity (K) calculations are available in Appendix G. Results are tabulated below:

Hydraulic Conductivity Tests
Table 2

| Well Name | Rising Head Ft/Day | Falling Head Ft/Day |
|--------------|-----------------------|------------------------|
| MW-1 | 31.77 | 34.56 |
| MW-6 | 0.29 | 0.37 |

As expected hydraulic conductivity values are significantly greater in MW-1, which is screened deeper in the aquifer, than in MW-6 which is screened in the shallow, silty soil. The actual seepage velocity of ground water can be calculated

with the equation $V = Ki/n$

where;

V = seepage velocity
K = hydraulic conductivity
i = hydraulic gradient
n = effective porosity

A reasonable porosity value for the silt soils is 0.50 (Bouwer). Using a hydraulic conductivity value of 0.3 ft/day and the vertical gradient of 0.1, a

seepage velocity of 0.06 ft/day is obtained for the silty soil at the southern end of the site. Assuming the silt is three feet thick it would take approximately 50 days for water to travel through the silt to the underlying sands.

In the sandy aquifer ground water flow is to the southwest with a gradient of 0.018. Near the base of the hill to the north flow in the sand is moving upward into the silt. This condition extends south past MW-5 and MW-6. With an effective porosity of 0.35 and a hydraulic conductivity of 32.0 ft/day a seepage velocity of 1.6 ft/day can be calculated. Ground water travelling from the union of the sign post culvert and the buried tanks would take approximately 50 days to move down through the silt and an additional 40 days to travel through the sand to MW-3, 60 feet downgradient.

The low flow velocity in the upper portion of the aquifer along with the upward gradient near the pond and separator have combined to inhibit the migration of contaminants to the lower portion of the aquifer. Much of the ground water moving through the pond and steaming pad area is discharged as surface water in the swamp. In addition, the pond has a lower hydraulic potential than the immediately surrounding aquifer causing ground water to flow to the pond before being discharged through the separators to the unnamed tributary of the Dog River.

REMEDIATION

Remedial efforts were focused on removal of the existing wastewater disposal system including the drainage ditch, conduit system, pond and separators as well as any contaminated soils associated with these items. Remediation began on April 20, 1987. Soils excavation was performed by G.M. Bowen Excavating, using a Kobelco 409D, under the direction of The Johnson Company. Ben Thomas, and John Amadon of the Waste Management Division were also present on that day. Soils were assayed with a 10.6 eV photoionization detector to determine gross contamination by volatile organic compounds (VOCs). By prior agreement with Waste Management Division personnel, any soil exceeding 20 ppm VOCs would be removed and stored on 6 mil polyethylene sheets in a field owned by Dave Partridge near interstate 89. Soils exhibiting VOC concentrations of less than 20 ppm were considered suitable for use as backfill. In addition, a portable gas chromatograph, owned and operated by Wagner, Heindel and Noyes, Inc. was onsite to detect and quantify trichloroethene in the soil. Soil samples were taken in duplicate with one sample being analyzed by gas chromatography (head space) on site and a duplicate held in reserve for analysis by Aquatec, Inc., South Burlington. Soil samples (W2, W3) were taken from the drainage swale which channels water from the streaming pad to the drop inlet of the conduit system. Excavation then began at the drop inlet and proceeded in a westerly direction along the sign post culvert. Culvert sections were removed and stored on polyethylene. The soil on top of the culvert as well as soils within two feet laterally and one foot below it were transported to the field near I-89. A total of 9 truckloads of soil were removed the first day. It became apparent that much of the soil registered below

20 ppm on the PID but was clearly contaminated. Ben Thomas of the Waste Management Division agreed that professional judgement be used in determining which soils to remove from the site. The drain inlet was removed as were several feet of soil in the swale. Table 2 contains values obtained from PID assays, portable gas chromatography and laboratory analysis. An explanation of the location of each sample in Table 2 can be found in Appendix H. It is clear from the data presented in Table 2 that the portable G.C. results are in strong disagreement with those obtained by Aquatec. It is likely that the results obtained by Aquatec, under controlled conditions by experienced chemists, are more reliable than those obtained in the field. Use of the portable G.C. was discontinued after April 21, 1987. The only sample to exhibit a significant concentration of TCE is W19 which was a sludge, rather than soil sample.

**Trichloroethene Concentrations in
Soils Excavated at Wyman's Meter and
Tank Equipment, Inc.**

Table 3

| Sample Name (see _____ for description of sample location) | P.I.D. Reading (ppm) | Portable Gas Chromatograph (ppm in Head Space, not corrected for Soil Mass) | Aquatec (ppm in Head Space) |
|---|-------------------------|--|-----------------------------------|
| WS-1 | N/A | 1.5 | N/A |
| WS-2 | 65 | 1.07 | N/A |
| WS-3 | 3.5 | 0.03 | N/A |
| WS-4 | 13.2 | 16.6 | N/A |
| WS-5 | 0 | 0.934 | N/A |
| WS-6 | N/A | 1.0 | <0.001 |
| WS-7 | N/A | 5.27 | N/A |
| WS-8 | N/A | 0.24 | N/A |
| WS-9 | N/A | 0.45 | <0.001 |
| WS-10 | N/A | 0.62 | <0.001 |
| WS-11 | N/A | 11.63 | 0.024 |
| WS-12 | N/A | 4.41 | <0.001 |
| WS-14 | N/A | 3.88 | <0.001 |
| WS-16 | N/A | N/A | <0.001 |
| WS-17 | N/A | N/A | <0.001 |
| WS-18 | N/A | N/A | 0.15 |
| WS-19 | N/A | N/A | 8.3 |

N/A = Not Analyzed.
< = Below detection limit.

Although the drainage ditch samples yielded low PID readings, earlier sampling detected the presence of significant quantities of lead, barium, cadmium and chromium. These soils were stockpiled pending further study to determine which disposal/treatment procedures to employ.

The final section of culvert was removed on April 21, 1987. Digging continued to expose the first two tanks in series. When the tanks were exposed the first one was up ended by the backhoe and allowed to drain into the trench. When empty the tank was removed and stored on plastic northwest of test pit 2. A portion of the steaming pad was surrounded with a berm of clean sand. The bermed area was then lined with polyethylene, forming a lagoon to contain sludge. A small centrifugal pump was used to remove liquid from the sludge to allow it to be removed from the pit by the backhoe. When it became apparent that this would not work a piston pump mud-sucker was used to try to pump all of the sludge from the pit. The mud-sucker clogged immediately and was abandoned. Finally a vacuum pump tank truck was used to remove the sludge. Once the sludge was removed, the pit was excavated further to remove any residue of contaminated material. A silt dam was built between the open trench and the next tank to prevent any contaminated material from seeping back into the trench from the tank. A hole was cut in the top of the second tank to permit the vacuum truck to remove the sludge before the tank was moved. This method proved far more effective in preventing soil from being contaminated by the sludge. When the tank was emptied it was removed and stored as before, the third tank was removed in the same manner. Empty tanks were washed with water. The tank truck discharged its sludge into the bermed lagoon and was then thoroughly cleaned before leaving the site. Wash water from the tanks and tank truck was discharged to the separation pond.

Prior to the removal of the fourth tank on April 22, 1987 the outlet from the conduit system to the pond was plugged with silt to prevent material from draining from the pond back into the tanks. When the sludge lagoon was filled to capacity

a 6000 gallon tank was used to contain additional sludge. After a silt dam had been placed at the inlet to the fifth tank and any remaining contaminated soil was removed, the trench was backfilled with 3 to 4 feet of clean medium sand. A 4-inch diameter PVC well with factory slotted screen was installed in the trench just north of TP-3. Where tanks 3 and 4 had abutted, the trench was excavated to a depth of 9 feet. The material at this depth was a dense gray silt which acts as an impeding layer to surface water infiltration. Care was taken not to breach the silt layer. A 3 foot diameter culvert was axially slotted for a length of 7 feet and wrapped with filter fabric. This was installed in the deepened portion of the trench which was then backfilled with clean medium sand. This laterally extended well (L.E.W.) extends from approximately 10 feet north of TP-3 to approximately 25 feet south of the separation pond (Figure 1). The fifth tank was removed and the remainder of the tank excavation was backfilled with silt to inhibit pond water from migrating back to the L.E.W. Two to three feet of silt was placed over the medium sand in the L.E.W. to slow the infiltration of surface water into the well. The top was finished with gravel.

With the conduit and contaminated material removed from the steaming pad to the separation pond the next objective became the removal of contaminated soil and sludge from the pond. It was necessary to dewater the pond in order to remove the sludge. Toward this end a curtain drain was constructed along the north side of the pond on April 23, 1987. The drain ran from the location of a spring, which formerly served as a water supply, to a discharge point in the swampy area approximately 10 feet north of the separator. In addition, a 7 foot length of slotted 15 inch culvert was wrapped with filter fabric and installed in the center of the pond to serve as a pumping sump if necessary.

By May 7, 1987 it had become apparent that recharge to the pond had not been diverted. The curtain drain was reconstructed at a greater depth in an effort to intercept more of the flow to the pond. At this point two tanks remained in the pond. One was an 18,000 gallon tank, the other was believed to be a 1,000 or 2,000 gallon tank. These were not part of the conduit system but were buried with one end in the pond to provide additional storage area in the pond.

Excavation was performed next to the pond parallel to the steaming pad in order to install a drain to intercept water moving to the pond from the east. At that time it was discovered that both of the remaining tanks extended under the steaming pad. It was determined that removal of these tanks would likely result in the failure of the steaming pad and the release of the sludge stored thereon. It was also discovered that this area was, in part, filled with old gasoline pumps, frames, signs and other metallic debris. The void spaces in this fill formed a ground water reservoir. Non aqueous phase liquid (NAPL) was evident floating on the surface of water in some of the void spaces. Installation of the drain was postponed until sludge could be removed from the steaming pad.

The sludge in the lagoon was collected with a Franklin Pumping vacuum tank truck on July 22, 1987 and removed to a hazardous waste treatment facility in Connecticut. A small portion of solid material which could not be transported was stored in a dumpster on-site.

With the sludge moved, removal of the steaming pad began on July 27, 1987. The pad was extensively cracked. A strong gasoline odor as well as PID reading

between 100 and 200 ppm indicated that contaminated water had seeped through the cracks into the soil below. To determine the vertical extent of this contamination a test pit was dug in the northeast corner of the excavated pad near the truck ramp. The pit was excavated to approximately 5 feet b.g.s. where the water table was encountered. At that depth PID readings remained as high as 50 ppm.

A silt dam was constructed in the pond to isolate the two remaining tanks. Excavation then took place around the two tanks, the smaller of the two was removed on June 27, 1987. The larger tank was removed the following day with the aid of a 35 ton capacity crane. Sludge from the tanks was left in the pit until August 4, 1987. This sludge had the same dark coloration and thick consistency as the sludge encountered in the conduit system but it yielded much lower PID readings and did not stain objects as readily. It was believed that this sludge contained much lower concentrations of contaminants than the conduit system sludge. Clean sand was mixed with this material in order to stiffen it. The sludge/sand mixture was then removed and stored in bermed, polyethylene lined areas on the site near I-89.

Construction of the extended drain began following the removal of contaminated soil on August 4, 1987. A ditch was dug to a depth of approximately 8 feet, pipe was laid in the bottom, with several feet of pea stone overlying it. Two slotted culverts were installed as pumping sumps to enhance dewatering.

By pumping from the pond itself as well as the sumps in the Interceptor trench the water level was lowered in the pond. Mixing clean sand with the pond soils

stiffened them sufficiently to allow removal. These soils also were stored in bermed areas near I-89.

As excavation proceeded in what was the pad area, PID readings ranging from 300 to 700 ppm were encountered, these soils were kept separate from soils with lower VOC levels. Material was excavated until readings from 20 to 50 ppm were obtained. The drain was left intact, the separator was then removed along with all contaminated soil around it. Soils in the swamp near the outlet of the former separator were also removed, these soils exhibited a strong odor and PID Readings up to 200 ppm.

CONTAMINATED MATERIALS HANDLING

Once recovered, material was ultimately disposed of in one of two ways:

1. Removal by a certified hauler to a secure hazardous waste disposal/treatment facility; or
2. On-site treatment of soil through biodegradation.

Criteria for determining suitability for on-site treatment were levels of lead and chlorinated hydrocarbons, most notably trichlorethene (TCE). No limits were defined for TCE, decisions were made on a case by case basis. A limit for lead was set at 500 ppm.

All of the sludge removed during the excavation of the conduit system was stored on-site near the plant in a tank and in the lagoon discussed above. This material was believed to be the most severely contaminated of any that would be encountered during remediation. Tables 4 and 5 contain information from analyses

performed on lagoon sludge and tank sludge respectively. All samples in these tables are point samples rather than composites and this is reflected in the variation in the concentrations of the compounds. Trichloroethene concentrations vary from undetectable levels to 8300 ppb. Lead was present in measurable quantities only in the liquid phase of the lagoon sludge. Due to the presence of significant levels of TCE these materials were designated to be shipped. As previously discussed, material in the steaming pad lagoon was shipped to a hazardous waste treatment facility in Waterbury, Connecticut. Approximately 2000 gallons of sludge remains in the tank and an additional two to three cubic yards remains in a dumpster pending the receipt of sample analysis results and locating a hauler and receiver for it.

Results of Analysis
Performed on Sludge Stored in Steaming Pad Lagoon

Table 4

| EPA Method 624 | | | |
|------------------------------|--------------------|-------------|-------------|
| Parameter | Sample Name | | |
| | W-19 | LL-1 | LS-1 |
| Benzene (ug/l) | 98,000 | 350 | N/D |
| 1,1,1 Trichloroethane (ug/l) | 7,300 | N/D | 240 |
| Ethylbenzene (ug/l) | 330,000 | 1,800 | 1,800 |
| Toluene (ug/l) | 290,000 | 4,100 | 3,800 |
| Trichloroethene (ug/l) | 8,300 | 210 | 150 |
| Total Xylenes (ug/l) | 1,400,000 | 11,000 | 10,000 |

| EP Toxicity Extract | | |
|----------------------------|--------------------|-------------|
| Parameter | Sample Name | |
| | LS-2 | LL-2 |
| Arsenic (ppm) | <1 | 0.024 |
| Barium (ppm) | <5 | 0.34 |
| Cadmium (ppm) | <0.25 | <0.005 |
| Chromium (ppm) | <1 | <0.02 |
| Lead (ppm) | <1 | 1.69 |
| Mercury (ppm) | <0.04 | <0.05 |
| Selenium (ppm) | <1 | <0.005 |
| Silver (ppm) | <1 | <0.02 |

**Results of Analysis
Sludge Stored in 6000 Gallon Tank**

Table 5

| Parameter | EPA Method 624 | | |
|---------------------------------|----------------|---------|---------|
| | Sample Name | | |
| | Tank Sludge | TS-727 | TS-1 |
| Benzene (ug/l) | 520 | 2,500 | 10,000 |
| Chloroform (ug/l) | N/D | 1,200 | N/D |
| Ethylbenzene (ug/l) | 290 | 12,000 | 86,000 |
| Toluene (ug/l) | 1,500 | 7,300 | 84,000 |
| Total Xylenes (ug/l) | 1,900 | 71,000 | 580,000 |
| Trichloroethene (ug/l) | 71 | N/D | 2,700 |
| 1,1,1 Trichloroethane (ug/l) | 65 | N/D | N/D |
| 1,1-Dichloroethane (ug/l) | 25 | N/D | N/D |
| | Tank-LM | Tank-SM | |
| Arsenic (mg/l) | <1 | <1 | |
| Barium (mg/l) | <5 | <5 | |
| Cadmium (mg/l) | <0.25 | <0.25 | |
| Chromium (mg/l) | <1 | <1 | |
| Lead (mg/l) | <1 | <1 | |
| Mercury (mg/l) | <0.04 | <0.04 | |
| Selenium (mg/l) | <1 | <1 | |
| Silver (mg/l) | <1 | <1 | |

Lead Content of Stockpiled Soils

Table 6

| Sample Name | Total Lead (mg/kg Dry Weight) |
|-----------------|-------------------------------|
| Soil Com (IEA) | 35.1 |
| Slidg Com (IEA) | 635 |
| SLDG-R-1 | 200 |
| SLDG-R-2 | 380 |
| SLDG-R-3 | 270 |
| SLDG-R-4 | 124 |
| SLDG-R-5 | 92 |

Approximately 130 cubic yards of soil were removed during excavation of the conduit system. This material had been stockpiled on the I-89 site. Composite samples were taken and analyzed for total lead. Results of these analyses are available in Table 5. The soil was then spread approximately 3 inches thick on a level portion of the site near I-89. Cow manure was added to enhance the availability of nutrients to soil microorganisms. The soil was then harrowed to allow mixing and aeration. An additional 175 cubic yards of material was stockpiled during the cleanup of the pond and the steaming pad area. This consisted of dry soil and wet sludgy material from the pond bottom and the two tanks formerly in the pond. Samples of this material were analyzed for compounds on the EPA priority pollutant list as well as for lead. Results are available in Table 6. The only chlorinated hydrocarbon present was carbon tetrachloride at a concentration of 650 ppb in one sample. An un-characteristically high concentration of lead (635 ppm) was detected in a composite sample from the sludge stockpiles. Composite samples were taken from each row, which had made up the previous composite and were analyzed for lead. The results came in under the 500 ppm level established by the Vermont Waste Management Division. This material was subsequently thin spread and treated as before. Composites from the spread soils will be taken at regular intervals during spring, summer and fall to monitor the progress of the biodegradation of the hydrocarbons. Manure will be added and soils will be harrowed periodically to promote biodegradation.

Sludge/Soil from Pond and Steaming Pad

Table 7

| Parameter (ug/l) | Sample Name | | | | |
|----------------------|-------------|--------|--------|--------|--------|
| | SLC-1 | SLC-2 | SLC-3 | SLC-4 | SLC-5 |
| Benzene (ug/l) | 810 | 980 | 1,000 | N/D | N/D |
| Carbon Tetrachloride | N/D | 650 | N/D | N/D | N/D |
| Ethylbenzene | 9,800 | 10,000 | 10,000 | 3,800 | 2,900 |
| Methylcyclohexane | 5,400 | 6,600 | 5,100 | 2,700 | 1,900 |
| Toluene | 3,000 | 7,000 | 3,000 | 11,000 | 1,700 |
| Total Xylenes | 92,000 | 96,000 | 81,000 | 41,000 | 37,000 |

Total Lead - Digested (Aquatec)

| Parameter | Sample Name | | | | |
|--------------|-------------|----------|----------|----------|----------|
| | SLDG-R-1 | SLDG-R-2 | SLDG-R-3 | SLDG-R-4 | SLDG-R-5 |
| Lead (mg/kg) | 200 | 380 | 270 | 124 | 92 |

Total Lead - Digested (I.E.A.)

| | Soilcom | Sldgcom |
|--------------|---------|---------|
| Lead (mg/kg) | 35.1 | 635 |

WATER QUALITY

Of utmost concern are the local water supplies, Wyman's bedrock well, Bob Newcity's spring and the gravel well supplying foreign solution. These sources were sampled on April 6, 1987 and were found to be free of contamination (see Appendix H). The Newcity water supply will be sampled quarterly.

Handwritten notes:
 April 6, 1987
 11/1/87
 - 110 -

Samples obtained from monitoring Wells MW-1, MW-2, MW-3 and MW-5 were analyzed according to EPA Method 624. Wells were sampled on May 18, 1987 (MW-3 was sampled on June 3, 1987), at that time the only well which exhibited any contaminants was MW-2. The analysis results from MW-2 are summarized in Table 7.

VOC Analysis - MW-2
Sampled May 18, 1987

Table 7

| Parameter | Concentration (ug/l) |
|-----------------|----------------------|
| Benzene | 7.0 |
| Ethylbenzene | 2.0 |
| Dichlorobenzene | 120.0 |
| Toluene | 5.0 |
| Total Xylenes | 44.0 |

These compounds are all in concentrations below the Vermont Department of Health Advisory levels for drinking water except for benzene which is equal to the advisory level. A subsequent sampling on September 3, 1987 revealed no contaminants in any of the wells. The next round of monitoring well samples will occur in December 1987.

Outfall from the separator system to the swamp was sampled on April 6, 1987. Analysis results are summarized in Table 8.

**VOC Analysis on Wyman's Pond Outfall
Samples reported ug/l**

Table 9

| Parameter | April 6, 1987 | August 13, 1987 |
|------------------------------|----------------------|------------------------|
| Benzene | 110 | <5 |
| 1,1,1 Trichloroethane | 45 | <5 |
| 1,1 Dichloroethane | 8 | <5 |
| 1,2 Dichloroethane | 48 | <5 |
| Toluene | 160 | <5 |
| Trichloroethene | 28 | <5 |
| Acetone | 48 | <10 |
| 4-Methyl-2-Pentanone | 7 | <10 |
| Total Xylenes | 250 | <5 |

As expected the separator outfall contained significant levels of benzene, toluene and xylenes. In addition several chlorinated hydrocarbons were detected. Following removal of the disposal/treatment system, including removal of the separator and removal of contaminated pond soils, the discharge from the pond to the swamp was sampled on August 13, 1987. An EPA Method 624 analysis revealed no evidence of contamination. On the same date a water sample was taken from the culvert where the unnamed tributary crosses Dog River Road. This sample was also analyzed according to EPA Method 624 and revealed no contaminants. Surface waters derived from the Wyman's site exhibit no detectable VOCs at this time.

CONCLUSIONS

It is evident that the former waste water treatment system at Wyman's did not adequately protect the environment from the release of potentially harmful compounds. Hydrocarbons and metals were found in the discharge from the system. Soils in the drainage ditch and the pond were found to contain metals and, in the latter case, polychlorinated biphenyls. Hydrocarbons had been detected, at significant levels in the unnamed tributary to the Dog River where it crosses Dog River Road. Soils surrounding the system exhibited contamination. Water supplies exhibited traces of hydrocarbons.

Discharges through the system ceased and the system was removed. Soils in contact with the system or with waste from the system were removed. Soils were analyzed for the presence of lead and chlorinated hydrocarbons and were subsequently thin spread. Sludge from the system proved to be the most highly contaminated material encountered. Sludge was stored on-site. Some of this material has been removed to a hazardous waste treatment facility in Connecticut. The remainder is stored on-site while a hauler and receiver is sought.

The thin spread soils have been enriched with cow manure and harrowed to increase the availability of nutrients and oxygen to soil microorganisms which will break down hydrocarbons in the soil. Composite samples will be taken on a regular basis during non-winter months and analyzed for oil and grease concentrations. Over time this will establish the level of effectiveness of the treatment process.

Following the removal of the system and contaminated material associated with it, both surface waters and ground water moving off the Wyman's site are clean. Monitoring wells and the Newcity water supply will continue to be analyzed quarterly to monitor water quality with respect to VOCs. While a laterally extended recovery well was constructed and stands ready for use we do not believe any further remediation is indicated at this time. The remedial efforts to date have minimized the environmental impact of past activities at Wyman's.

SP/djm
WYMAN.RPT

APPENDIX A

Discharge Permit

STATE OF VERMONT
AGENCY OF ENVIRONMENTAL CONSERVATION
DEPARTMENT OF WATER RESOURCES &
ENVIRONMENTAL ENGINEERING

Page 1 of 2

TEMPORARY POLLUTION PERMIT

File No. 12-11-039

Permit No. 2-0617

In compliance with provisions of 10 V.S.A. §1263

Wynan's, Inc.
P.O. Box 541
Montpelier, VT 05602

In accordance with "Terms and Conditions" hereinafter specified, the above named permittee is hereby granted permission to discharge waste into the waters of the State.

1. Expiration Date: August 31, 1986.
2. Revocation: 10 V.S.A. §1267 provides as follows:

"The Secretary may revoke any permit issued by it pursuant to this subchapter if it finds that the permit holder submitted false or inaccurate information in his application or has violated any requirement, restriction or condition of the permit issued. Revocation shall be effective upon actual notice thereof to the permit holder."
3. Transfer of Permit: This permit is not transferable without prior written approval of the Secretary. The permittee shall notify the Secretary immediately, in writing, of any sale, lease or other transfer of ownership of the property from which the discharge originates. The permittee shall also inform the new owner or tenant of his responsibility to make application for a permit which shall be issued in his name. Any failure to so notify shall be considered a violation of this permit.
4. Location of Discharge: Northfield Road, Berlin, Vermont

5. Receiving Waters: Unnamed tributary of the Dog River.
6. Point of Discharge: Via ditch to submerged tank, followed by three oil-water separators in series then to pond and then to receiving water via submerged baffle separator.
7. Wastes Permitted: Washwater containing petroleum products from steam cleaning of tanks and trucks after treatment specified in No. 6.
8. Volumes Permitted: Unspecified.
9. Frequency of Discharge: Daily.
10. Operation and Treatment Requirements: As specified in No. 6.
11. Maintenance Requirements: The separators shall be maintained and cleaned as necessary to provide optimal treatment.
12. Personnel and Training Requirements: None.
13. Monitoring and Reporting Requirements: See 14 below.
14. Miscellaneous Requirements: This discharge is to a designated upland stream as per Rule 12 of the Vermont Water Quality Standards (effective date March 7, 1978) and, therefore, is not allowed. Wymen's, Inc. shall complete the steps outlined below to terminate this discharge.

By October 1, 1985, identify the off-stream disposal option that is to be pursued.

By February 1, 1986, submit plans to the Department of Water Resources and Environmental Engineering for the off-stream disposal option chosen.

By September 1, 1986, implement the plans and cease discharging to the unnamed tributary of the Dog River

15. Date of Permit: April 8, 1985

AGENCY OF ENVIRONMENTAL CONSERVATION

By

Jonathan Dash
Commissioner

Department of Water Resources
and Environmental Engineering

APPENDIX B

Malter Letter March 5, 1986



State of Vermont

1986 03 05

AGENCY OF ENVIRONMENTAL CONSERVATION

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Water Resources & Environmental Engineering
Natural Resources Conservation Council
State Geologist

Montpelier, Vermont 05602
Department of Water Resources
and
Environmental Engineering

March 5, 1986

Mr. David Partridge
Wyman's Meter and Tank Equipment Co., Inc.
P.O. Box 541
Montpelier, VT 05602

Dear Mr. Partridge:

On December 5, 1985, soil samples were collected from your facility located on Northfield Road in Montpelier, Vermont. The locations sampled were the unlined lagoon, the final effluent discharge point and the unnamed stream to which the discharge enters. An analysis of the soils revealed various levels of benzene, toluene, xylene, lead and cadmium as well as other unidentified constituents.

The Secretary of the Agency of Environmental Conservation has concluded that this contaminated soil (which is classified as a hazardous waste) may present an imminent and substantial danger to the environment. He has concluded that it is necessary to take appropriate action to minimize the immediate impact of such releases to the public health and the environment. Section 1283 provides, however, that before expending State funds to do the mitigation referred to above, the Agency must provide parties, who are potentially responsible for the threat to the environment an opportunity to voluntarily perform the necessary actions under the direction of the Agency of Environmental Conservation.

The State hereby gives notice that it believes Wyman's Meter and Tank Company, Incorporated is a responsible party under 10 V.S.A. Section 1282. The Secretary has concluded that the following actions are necessary to mitigate the situation:

1. The development of a plan, by a qualified consultant, to evaluate the degree and extent of soil contamination and

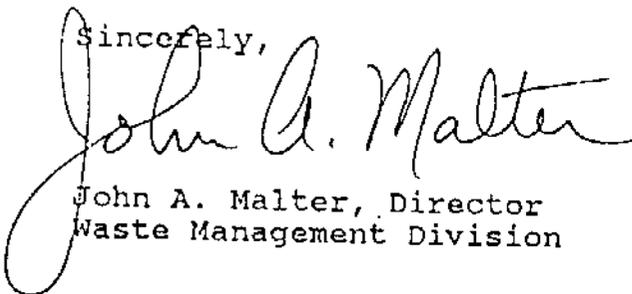
potential groundwater contamination in the areas of the unlined trench, the lagoon and the discharge area from the lagoon. This plan shall be submitted for review and approval by the Secretary prior to its implementation;

2. Following the site investigation, a plan shall be prepared to remediate any soils and groundwater contamination. This remediation plan shall be submitted for review and approval by the Secretary prior to its implementation.
3. The site investigation and development of the remediation plan shall be performed in a timely manner so that actual remediation activities commence by July 1, 1986.

Please advise this office within ten (10) days of receipt of this notice as to whether you intend to complete this work voluntarily. If you decline to do so, the Secretary will expend State funds to have the work done. If he so does, he will move, pursuant to 10 V.S.A. Section 1283, to have Wyman's reimburse the State of Vermont for the costs of the mitigation described above.

If you agree to perform the work described above, you are requested to initiate these actions within thirty (30) days of receipt of this letter. Failure to initiate these actions by this date will result in the expenditure of State funds to have this work done.

Sincerely,



John A. Malter, Director
Waste Management Division

JAM:CRS:kp

APPENDIX C

Sanborn Letter November 17, 1986



State of Vermont

OFFICE OF ENVIRONMENTAL CONSERVATION

AGENCY OF ENVIRONMENTAL CONSERVATION

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Water Resources & Environmental Engineering
Natural Resources Conservation Council
State Geologist

103 South Main Street
Waterbury, Vermont 05676
Department of Water Resources
and
Environmental Engineering

November 17, 1986

Mr. Chris Stone
Hydrogeologist/Project Manager
The Johnson Company
5 State Street
Montpelier, VT 05602

RE: Wymans Site Investigation & Remediation

Dear Chris:

This letter is to serve as a response to your October 17, 1986 "Remedial Investigation Proposal" as well as a confirmation of our on-site discussions Friday morning. While we are in general concurrment with the approach taken in your plan there is insufficient data to finalize details. We do know however, that some of the soil/sludge samples meet criteria as a hazardous waste with respect to lead and must be handled as such. Additionally we do not believe that the soils on the site proposed for landfarming are adequate for successful biodegradation.

The following tasks to be performed by Wymans & The Johnson Company were agreed on this morning:

- 1) Within the next week a minimum of 3 water samples will be obtained for analysis of BTEX/hydrocarbons and the metals lead, cadmium, & chromium. Sample locations are to be Wymans well, the neighboring down gradient well, and the tributary to the Dog River where it crosses the dirt road leading to montpelier's WWTF (Montpelier Junction Road)
2. Eliminate the domestic wastewater discharge to the separation pond this fall by providing an approved on-site septic field.
- 3) Initiate design and construction for diversion of the springs feeding the separation pond. This task should be completed this fall to allow for clean out of the separation pond early next spring.
- 4) Delineate the vertical and horizontal extent of contamination of the near surface soils. Backhoe test pits will be acceptable for visual and PID (photoionization) screening, as well as for obtaining soil samples for metals

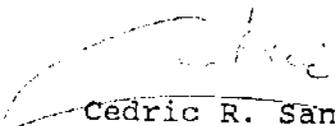
analyses. Contaminated soils will be handled according to the Agency's protocol that has been utilized at petroleum sites throughout Vermont over the past year. However total lead assays of appropriately composited soils samples must be less than 500 mg/kg. Soils/sludges with lead exceeding 500 mg/kg must be handled as hazardous material. Delineation should commence this month.

- 5) In the presence of Agency staff excavation of obviously contaminated surface soils should commence this fall. Soils must be stockpiled per the Agency's protocol on polyethylene plastic and covered with polyethylene plastic. Stockpiling may occur on the fields south of I-89 where you had proposed landfarming.
- 6) Based on the results of the water sampling and assays coupled with the test pit evaluations and soils analyses, a Phase II investigation in the Spring of 1987 may be required if groundwaters have been impacted.
- 7) Cleanup of the separation pond is to be performed in the spring in conjunction with any Phase II investigations.

We are assuming that discharges to the separation pond other than sanitary wastes have ceased. Our group is involved in the site cleanup only. The RCRA Section of the Agency is the entity to deal with with respect to alternate treatment/separation processes. Gary Gulka is Chief of that section and questions regarding the replacement treatment system should be directed to him.

Please feel free to contact me with any questions or comments you may have. I would appreciate a written confirmation of your concurrence with the tasks outlined above. Additionally we would appreciate as much advance warning as possible about any on-site excavation or investigatory activities.

Sincerely,



Cedric R. Sanborn, Chief
Environmental Release Management Section

JFA:CRS:cmc

cc: Dave Partridge
Gary Gulka

APPENDIX D

Boring and Well Logs

The Johnson Company, Inc.
 Engineering and Environmental Sciences
 5 State Street
 Montpelier, Vermont 05602

Well Number MW-1 Drilling Log

| | | | |
|-------------------|-------------------|-------------------------|-----------------|
| Project | Wyman's | Location | Berlin, Vermont |
| Date Drilled | 5/11/87 | Total Depth of Hole | 45' |
| Surface Elevation | --- | Water Level, Initial | 9' |
| Screen: Diameter | 2" | Length | 10' |
| Casing: Diameter | 2" | Length | 35' |
| Drilling | Hollow Stem Auger | Top of Casing Elevation | --- |
| Driller | Adams Engineering | Log By | Seth Pitkin |
| | | Total Pipe | 45' |
| | | Stick Up | 1.5 |
| | | Slot Size | .020 |
| | | Type | PVC |

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-------------|-------------|--|
| 1 | | | | |
| 2 | | | | |
| 3 | | | 0 | |
| 4 | | | | |
| 5 | | MW1-A | | 5'-7' 1' Pebbly, Silty Fine Sand. Wet 1' Fine sand with trace of silt. Wet Saturated. |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | Bentonite | | 9.8'-11.8' Gray-brown clean medium sand, grading to brown medium sand. |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | 0 | |
| 15 | | | | 15'-17' Brown/gray-brown clean coarse sand with pebbles. Saturated. |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | 0 | |
| 20 | | | | 20'-22' Gray medium sand w/silty lenses & pebbles over brown medium sand. Saturated. |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | 0 | |
| 26 | | | | 25'-27' Brown medium sand w/silt lenses. Bottom 0.5' contains many large rounded pebbles. Saturated. |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | 0 | |
| 31 | | | | 29.7'-31.7' 1.7' brn med. sand w/silt lenses. 0.3' gravelly coarse sand. |
| 32 | | | | |
| 33 | | | | |
| 34 | | Silica sand | 0.9 | 34.8'-36.8' 1.5' pebbly medium sand, 0.5' gravelly coarse sand w/a trace of silt. |
| 35 | | | | |
| 36 | | | | |
| 37 | | | | |
| 38 | | screen | 1.9 | 39.6'-41.6' Gray-brown pebbly medium sand. Saturated. |
| 39 | | | | |
| 40 | | | | |
| 41 | | | none | |
| 42 | | | taken | 44.8'-46.8' Gray-brown medium sand. Saturated. |
| 43 | | B.O.W. | | |

The Johnson Company, Inc.
 Engineering and Environmental Sciences
 5 State Street
 Montpelier, Vermont 05602

Well Number MW-2

Drilling Log

Project Wyman's
 Date Drilled 5/11/87
 Surface Elevation ---
 Screen: Diameter 2"
 Casing: Diameter 2"
 Drilling Hollow Stem Auger
 Driller Adams Engineering

Location Berlin, Vermont
 Total Depth of Hole 21'
 Water Level, Initial 9'
 Length 10' (5' grouted)
 Length ---
 Top of Casing Elevation ---
 Log By Seth Pitkin

Total Pipe 25'
 Stick Up 3.5'
 Slot Size .020
 Type PVC

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-------------|-------------|--|
| 1 | | | | |
| 2 | | | | |
| 3 | | Native | | |
| 4 | | Fill | | |
| 5 | | | | |
| 6 | | Volclay | | |
| 7 | | | | 8-10' 0.2" gray silty fine sand w/few pebbles. Wet. |
| 8 | | | | 0.25' fine sandy silt. Wet. |
| 9 | | | | 1.5' silty medium sand w/pebbles and organic matter. |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | Screen | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | Silica Sand | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | B.O.W. | | |
| 27 | | | | |
| 28 | | | | |
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| 32 | | | | |
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| 42 | | | | |
| 43 | | | | |

The Johnson Company, Inc.
 Engineering and Environmental Sciences
 5 State Street
 Montpelier, Vermont 05602

Well Number MW-3

Drilling Log

Project Wyman's
 Date Drilled 5/12/87
 Surface Elevation ---
 Screen: Diameter 2" PVC
 Casing: Diameter 2" PVC
 Drilling Hollow Stem Auger
 Driller Adams Engineering

Location Berlin, Vermont
 Total Depth of Hole 25.7
 Water Level, Initial 9'
 Length 10'
 Length 15'
 Top of Casing Elevation ---
 Log By Seth Pitkin

Total Pipe 25'
 Stick Up 2.0'
 Slot Size .020
 Type PVC

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-------------|-------------|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | Ben seal | 6.4 | 5.3'-7.3' Gray medium (compact) silt with some fine sand and organic matter. |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | Volclay | | |
| 9 | | | | |
| 10 | | | 2.90 | |
| 11 | | | | 9.8'-11.8' 1' gray medium (compact) silt with some fine sand, few pebbles and organic matter. 1' red brown gravelly silty fine sand. Saturated. |
| 12 | | | | |
| 13 | | Silica sand | | |
| 14 | | | | |
| 15 | | Screen | 3.1 | |
| 16 | | | | 15.7'-17.7' 0.33' brown fine sand w/trace of silt. 0.17' gray loam coarse sand. Saturated. |
| 17 | | | | |
| 18 | | | | 0.5' brown loam medium sand. |
| 19 | | | | 0.33' brown silty fine sand. |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | B.O.W. | | |
| 26 | | | 3.5 | |
| 27 | | | | 19.8'-21.8' 0.42' brown medium sand with some silt 0.17' gray brown sandy silt w/silt lense. 0.58 brown fine sand with some silt. Saturated. |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | 10.4 | |
| 34 | | | | 25.7'-27.7' Brown medium sand with some silt and silt lenses. Grading to brown silty fine sand. |
| 35 | | | | |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |

The Johnson Company, Inc.
 Engineering and Environmental Sciences
 5 State Street
 Montpelier, Vermont 05602

Well Number MW-4 Drilling Log

| | | | |
|-------------------|-------------------|-------------------------|-----------------|
| Project | Wyman's | Location | Berlin, Vermont |
| Date Drilled | 5/12/87 | Total Depth of Hole | 6.5' |
| Surface Elevation | --- | Water Level, Initial | 10' |
| Screen: Diameter | 2" | Length | 5' |
| Casing: Diameter | 2" | Length | 2.5' |
| Drilling | Hollow Stem Auger | Top of Casing Elevation | --- |
| Driller | Adams Engineering | Log By | Seth Pitkin |
| | | Total Pipe | 7' |
| | | Stick Up | 2.2' |
| | | Slot Size | .020 |
| | | Type | PVC |

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-----------|-------------|--|
| 1 | | | | |
| 2 | | Bentonite | | |
| 3 | | sand | | |
| 4 | | | 6.90 | 5'-7' Gray brown fine sandy |
| 5 | | Screen | | silt with organic matter. |
| 6 | | | | |
| 7 | | | | |
| 8 | | B.O.W. | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
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| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |

The Johnson Company, Inc.
 Engineering and Environmental Sciences
 5 State Street
 Montpelier, Vermont 05602

Well Number MW-5 Drilling Log

| | | | |
|-------------------|-------------------|-------------------------|-----------------|
| Project | Wyman's | Location | Berlin, Vermont |
| Date Drilled | 5/12/87 | Total Depth of Hole | 31' |
| Surface Elevation | --- | Water Level, Initial | 10' |
| Screen: Diameter | 2" | Length | 10' |
| Casing: Diameter | 2" | Length | 20' |
| Drilling | Hollow Stem Auger | Top of Casing Elevation | --- |
| Driller | Adams Engineering | Log By | Seth Pitkin |
| | | Total Pipe | 30' |
| | | Stick Up | 2.8' |
| | | Slot Size | .020 |
| | | Type | PVC |

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-------------|--------------|---|
| 1 | | Benseal | 0 on spoon | 0.25' brown pebbly silty fine sand. 1' gray very pebbly medium (compact) fine sandy silt. 0.33' dark brown organic rich silt with a trace of fine sand. |
| 2 | | | 6.3 in bag | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | Native | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | 0 on spoon | 0.25' brown pebbly silty fine/medium sand. 0.20' gray silt with a trace of fine sand. |
| 11 | | Volclay | 3.1 in bag. | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | 0 on spoon | 1' gray silt with a trace of fine sand. Saturated. 1' gray brown coarse sand with a trace of silt. Saturated. |
| 18 | | Silica sand | 1.3 in bag | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | B.O.W. | | |
| 24 | | | 0 on spoon | 0.67' brown medium sand with some silt. 0.08' gray silt lens. 1.25' gravelly coarse sand w/some silt. |
| 25 | | | 2.0 in bag | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | 0 on spoon | 0.42' gravelly silty medium sand |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |
| 36 | | | 0 in spoon | Brown clean medium sand |
| 37 | | | 0.60 in bag. | 0.08' coarse sand lens |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |

The Johnson Company, Inc.
 Engineering and Environmental Sciences
 5 State Street
 Montpelier, Vermont 05602

Well Number MW-6

Drilling Log

| | | | |
|-------------------|-------------------|-------------------------|-----------------|
| Project | Wyman's | Location | Berlin, Vermont |
| Date Drilled | 5/12/87 | Total Depth of Hole | 12.8' |
| Surface Elevation | --- | Water Level, Initial | 10' |
| Screen: Diameter | 2" | Length | 10' |
| Casing: Diameter | 2" | Length | 20' |
| Drilling | Hollow Stem Auger | Top of Casing Elevation | --- |
| Driller | Adams Engineering | Log By | Seth Pitkin |

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-------------|-------------|--|
| 1 | | Benseal | | See MW-5 for Stratigraphy. |
| 2 | | Silica sand | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | Screen | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | B.O.W. | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
| 42 | | | | |
| 43 | | | | |

APPENDIX E

Weston Water Supply Well Logs

RECEIVED SEP 24 1987

WELL NUMBER

943
(For Driller's Use)

This report must be completed and submitted to the Department of Water Resources and Environmental Engineering, State Office Building, Montpelier, Vermont 05602, no later than 60 days after completion of the well.

State of Vermont

DEPARTMENT OF WATER RESOURCES AND ENVIRONMENTAL ENGINEERING
WELL COMPLETION REPORT

FEB 27 1986

WATER RESOURCE USE ONLY

W.R. 371 U.S.G.S. _____
Field Location Map area 34c1
Latitude _____ Elev. _____
Longitude _____ Topo _____
Scale: 62,500 25,000 24,000
Data in Town Files

Location map attached to WCR 368

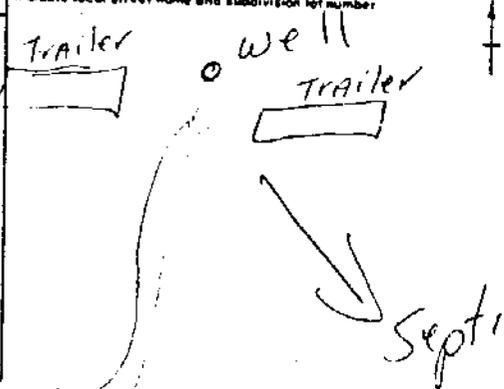
- WELL OWNER Kenneth Weston OR Montpelier, VT
WELL PURCHASER _____
Permanent Mailing Address _____
- LOCATION OF WELL: TOWN Berlin SUBDIVISION _____ LOT NO. _____
- DATE WELL WAS COMPLETED 9/30/85
- PROPOSED USE OF WELL: Domestic, Other _____
- REASON FOR DRILLING WELL: New Supply, Replace Existing Supply, Deepen Existing Well, Test or Exploration, Provide Additional Supply, Other _____
- DRILLING EQUIPMENT: Cable Tool, Rotary with A-P, Other _____
- TYPE OF WELL: Open Hole in Bedrock, Open End Casing, Screened or Bluffed, Other _____
- TOTAL DEPTH OF WELL: 205 feet below land surface.
- CASING FINISH: Above ground, Finished, Above ground, Unfinished, Buried, in Pit, Removed, None used, Other _____
- CASING DETAILS: Total length 40 ft. Length below L.S. 38 ft. Dia. 6 in. Material STEEL wt. 19 lb./ft.
- LINER OR INNER CASING DETAILS: Length used _____ ft. Diameter _____ in. Material _____ Weight _____ lb./ft.
- METHOD OF SEALING CASING TO BEDROCK: Drive Shoe, Grout - type _____, Drilled 8 1/2 in. hole 10 ft. in Bedrock
 Other Bentohite
- SCREEN DETAILS: Make and Type _____, Material _____, Length _____ ft., Diameter _____ in.
Slot Size _____, Depth to top of screen in feet below land surface _____ ft., Gravel pack if used: Gravel Size or Type _____
- YIELD TEST: Boiled, Pumped, Compressed Air, for 1 hour at 15 Gallons per minute
Measured by Bucket, Orifice pipe, Wier, Meter Permanent Airline installed
- STATIC WATER LEVEL: 20 feet below land surface, Date or Time measured _____, Overflows at _____ G.P.M.
- WATER ANALYSIS: Has the water been analyzed? Yes No, If Yes, Where _____
- SPECIAL NOTES: _____

18. WELL LOG

| Depth from Land Surface | | Water Bearing | Formation Description | Sketch |
|-------------------------|------------|---------------|-----------------------|--------|
| Feet | Feet | | | |
| Ground Surface | <u>28</u> | | <u>Gravel</u> | |
| <u>28</u> | <u>205</u> | | <u>Grey Shale</u> | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

19. SITE MAP

Show permanent structure such as buildings, septic tanks, and/or other land marks and indicate not less than 100 distances to the well. Indicate local street name and subdivision lot number.



20. TESTED YIELD

If the yield was tested at different depths during drilling, list below

| Feet | Gallons Per Minute |
|------------|--------------------|
| <u>125</u> | <u>5</u> |
| <u>200</u> | <u>15</u> |
| | |
| | |

WELL DRILLED BY: Ray Lepto, Jr

DOING BUSINESS AS: Johnson Well Co
Company or Business Name

REPORT FILED BY: Ray Lepto Jr
Authorized Signature

DATE OF REPORT: 9/30/85 WELL DRILLERS LIC. NO. 165

WELL NUMBER
47B
(For Driller's Use)

RECEIVED SEP 24 1987

34C1

Form WR-59
Rev. 7-22

State of Vermont
DEPARTMENT OF WATER RESOURCES

WELL COMPLETION REPORT

WR 210 USGS
Field Loc Map Des _____
La. _____ Alt _____ TS _____
Lo. _____ HU _____
Scale: 62500 , 25000 , 24000

(This report must be completed and submitted to the Department of Water Resources, State Office Building, Montpelier, Vermont 05602, no later than 60 days after completion of well. Complete or line out all blanks.)

SEP 26 1977

WELL OWNER Kenneth Weston Northfield Rd Montpelier, Vt.
Name Mailing Address

TOWN IN WHICH WELL IS LOCATED: Northfield Rd Mont. (Please locate well on a large scale map to accompany this report. Maps are available on request.)

DATE WELL WAS COMPLETED: _____
PROPOSED USE OF WELL: Domestic Agricultural Business Establishment
 Municipal Industrial Other (Specify) _____

DRILLING EQUIPMENT: Cable Tool Rotary Air Percussion
 Other (Specify) _____

TOTAL DEPTH OF WELL: 40 ft STATIC WATER _____
CASING DETAILS: Length 40 ft. Diameter 6 in. Material Steel
Weight 19 lb./ft.

SCREEN DETAILS: Make _____ Material _____ Length _____ ft.
Diameter _____ in. Slot Size _____

METHOD OF SEALING CASING TO SCREEN OR BEDROCK: set casing into gravel

FINAL YIELD TEST: Bailed, or Pumped, or Compressed Air
_____ Hours at _____ gallons per minute
Water level during yield test _____

WELL LOG
Depth From Ground Surface
Give description of formations penetrated, such as: peat, silt, sand, gravel, clay, hardpan, shale, limestone, granite, etc. Include size of gravel (diameter) and sand (fine, medium, coarse, color of material, structure (loose, packed, cemented, hard). For example: Surface to 27 ft. fine, packed, yellow sand; 27 ft. to 134 ft. gray granite.

Surface to 40 ft. gravel
to ft.
to ft.
to ft.

YIELD TEST DATA IN G.P.M.
If yield was tested at different depths during drilling, List Below

| | | | |
|----------|-----|----------|-----|
| G.P.M. @ | ft. | G.P.M. @ | ft. |
| G.P.M. @ | ft. | G.P.M. @ | ft. |

WATER ANALYSIS: Has water been analyzed? Yes No If Yes, Where _____
Include Analysis

DRILLED BY: Peter Benedini Jr.

DOING BUSINESS AS: B+B Artesian Well Co. Inc. Signature

DATE OF REPORT: 9/7/77 WELL DRILLERS LICENSE NO. 68 Company

3401

State of Vermont
DEPARTMENT OF WATER RESOURCES

Form WR-59

WELL COMPLETION REPORT

WR #10 USGS BLW-46

Field Loc Map Des nitted to
La. 44°14'20 Alt 660 TS te Office
Lo. 72°35'57 HU iter than
Scale: 62500 , 25000 , 24000

Do not fill in
State Well No. 144 14 20
Other No. W. 22 35 57

WELL OWNER Wagman's Inc. Northfield Rd. Montpelier
Name Mailing Address

WELL DRILLER B + B artesian Well Co. 506 Elm Montpelier
Name Mailing Address

PROPOSED USE OR USES (Check):

- Domestic Agricultural Business Establishment Municipal Industrial
 Other (Specify use)

| CASING DETAILS (Inside) | YIELD TEST | WATER LEVEL (From land surface) (if possible) | SCREEN DETAILS |
|---|--|---|------------------------|
| Length: <u>29</u> Feet | <input type="checkbox"/> Bailed or <input type="checkbox"/> Pumped <input checked="" type="checkbox"/> Compressed Air 2 Hours 20 GPM | Static: <u>25</u> Feet | Make: |
| Diameter: <u>2.0</u> inches | | During Yield Test: <u>none</u> Feet | Material: <u>none</u> |
| Kind: <u>Steel</u> | | DRILLING EQUIPMENT | Slot Size |
| Weight: <u>19</u> lbs/p/ft | | <input type="checkbox"/> Cable Tool | Length: <u>FL.</u> Ft. |
| <input checked="" type="checkbox"/> New <input type="checkbox"/> Used | Yield: <u>20</u> GPM | <input checked="" type="checkbox"/> Rotary | Diameter: <u>in.</u> |
| | | <input type="checkbox"/> Air Percussion | |
| | | <input type="checkbox"/> Other (specify) | |

TOTAL DEPTH OF WELL 270 FEET TOWN WELL IS LOCATED IN: Berlin
(Make sketch of well location on reverse side of sheet)

WELL LOG

| Depth From Ground Surface | Give description of formations penetrated, such as: peat, silt, sand, gravel, clay, hard pan, shale, limestone, granite, etc. Include size of gravel (diameter) and sand (fine, medium, coarse) color of material, structure (loose, packed, cemented, hard). For example: 0 ft. to 27 ft. fine, packed, yellow sand; 27 ft. to 134 ft. gray granite. |
|---------------------------------|---|
| <u>0</u> ft. to <u>67</u> ft. | <u>fine, packed, yellow sand</u> |
| <u>67</u> ft. to <u>270</u> ft. | fine, packed, yellow sand <u>blue slate</u> |
| ft. to ft. | |
| ft. to ft. | |
| ft. to ft. | |

YIELD TEST DATA IN G.P.M.
If yield was tested at different depth during drilling, List Below

| | |
|----------------|------------------|
| <u>150</u> ft. | <u>5</u> G.P.M. |
| <u>225</u> ft. | <u>12</u> G.P.M. |
| <u>270</u> ft. | <u>20</u> G.P.M. |

Has sample of well water been analyzed? no

Where was sample analyzed?
(Include analysis of sample if analyzed by other than Department of Water Resources.)

Date Well was Completed Oct 10, 1967 Date of Report Nov. 17, 1967
Water Well Driller's License No. 20 Well Driller Peter Beneshini Jr.
(signature)

APPENDIX F

Hydraulic Conditions Data

WYMAN'S METER AND TANK

CORRECTED HEAD DATA

Page 1

| WELL | DATE | WATER ELEV. | NAPL THICKNESS | CORRECTED HEAD |
|------|---------|-------------|----------------|----------------|
| H1 | 5/14/87 | 483.52 | 0.00 | 483.52 |
| H1 | 5/18/87 | 483.45 | 0.00 | 483.45 |
| H1 | 6/02/87 | 483.44 | 0.00 | 483.44 |
| H1 | 6/03/87 | 483.44 | 0.00 | 483.44 |
| H1 | 6/16/87 | 483.46 | 0.00 | 483.46 |
| H1 | 6/23/87 | 483.48 | 0.00 | 483.48 |
| H1 | 7/02/87 | 483.49 | 0.00 | 483.49 |
| H1 | 7/10/87 | 483.49 | 0.00 | 483.49 |
| H1 | 7/16/87 | 483.53 | 0.00 | 483.53 |
| H1 | 7/30/87 | 483.51 | 0.00 | 483.51 |
| H2 | 5/14/87 | 483.13 | 0.00 | 483.13 |
| H2 | 5/18/87 | 483.11 | 0.00 | 483.11 |
| H2 | 6/02/87 | 483.08 | 0.00 | 483.08 |
| H2 | 6/03/87 | 483.08 | 0.00 | 483.08 |
| H2 | 6/16/87 | 483.12 | 0.00 | 483.12 |
| H2 | 6/23/87 | 483.12 | 0.00 | 483.12 |
| H2 | 7/02/87 | 483.13 | .01 | 483.14 |
| H2 | 7/10/87 | 483.11 | 0.00 | 483.11 |
| H2 | 7/16/87 | 483.12 | 0.00 | 483.12 |
| H2 | 7/30/87 | 483.13 | .01 | 483.14 |
| H3 | 5/14/87 | 482.04 | 0.00 | 482.04 |
| H3 | 5/18/87 | 482.02 | 0.00 | 482.02 |
| H3 | 6/02/87 | 481.85 | 0.00 | 481.85 |
| H3 | 6/03/87 | 481.85 | 0.00 | 481.85 |
| H3 | 6/16/87 | 481.91 | 0.00 | 481.91 |
| H3 | 6/23/87 | 482.09 | 0.00 | 482.09 |
| H3 | 7/02/87 | 481.95 | 0.00 | 481.95 |
| H3 | 7/10/87 | 481.90 | 0.00 | 481.90 |
| H3 | 7/16/87 | 481.94 | 0.00 | 481.94 |
| H3 | 7/30/87 | 481.95 | 0.00 | 481.95 |
| H4 | 5/14/87 | 485.07 | 0.00 | 485.07 |
| H4 | 5/18/87 | 485.11 | .00 | 485.12 |
| H4 | 6/02/87 | 485.06 | 0.00 | 485.06 |
| H4 | 6/03/87 | 485.06 | 0.00 | 485.06 |
| H4 | 6/16/87 | 485.05 | 0.00 | 485.05 |
| H4 | 6/23/87 | 485.05 | 0.00 | 485.05 |
| H4 | 7/02/87 | 485.05 | 0.00 | 485.05 |
| H4 | 7/10/87 | 485.06 | 0.00 | 485.06 |
| H4 | 7/16/87 | 484.94 | 0.00 | 484.94 |
| H4 | 7/30/87 | 484.99 | 0.00 | 484.99 |
| LEW1 | 5/14/87 | 487.13 | 0.00 | 487.13 |
| LEW1 | 6/16/87 | 487.23 | 0.00 | 487.23 |
| LEW1 | 6/23/87 | 488.02 | 0.00 | 488.02 |
| LEW1 | 7/02/87 | 487.40 | 0.00 | 487.40 |
| LEW1 | 7/10/87 | 487.39 | 0.00 | 487.39 |
| LEW1 | 7/16/87 | 487.48 | 0.00 | 487.48 |
| LEW1 | 7/30/87 | 487.29 | 0.00 | 487.29 |
| MW1 | 5/14/87 | 487.70 | 0.00 | 487.70 |
| MW1 | 5/18/87 | 487.62 | 0.00 | 487.62 |
| MW1 | 6/02/87 | 487.60 | 0.00 | 487.60 |
| MW1 | 6/03/87 | 487.60 | 0.00 | 487.60 |

WYMAN'S METER AND TANK

CORRECTED HEAD DATA

Page 2

| WELL | DATE | WATER ELEV. | NAPL THICKNESS | CORRECTED HEAD |
|------|---------|-------------|----------------|----------------|
| MW1 | 6/23/87 | 487.70 | 0.00 | 487.70 |
| MW1 | 7/02/87 | 487.50 | 0.00 | 487.50 |
| MW1 | 7/10/87 | 487.56 | 0.00 | 487.56 |
| MW1 | 7/16/87 | 487.47 | 0.00 | 487.47 |
| MW1 | 7/30/87 | 487.50 | 0.00 | 487.50 |
| MW1A | 5/14/87 | 488.79 | 0.00 | 488.79 |
| MW1A | 5/18/87 | 488.63 | 0.00 | 488.63 |
| MW1A | 6/02/87 | 488.83 | 0.00 | 488.83 |
| MW1A | 6/03/87 | 488.83 | 0.00 | 488.83 |
| MW1A | 6/16/87 | 488.74 | 0.00 | 488.74 |
| MW1A | 6/23/87 | 489.47 | 0.00 | 489.47 |
| MW1A | 7/02/87 | 488.98 | 0.00 | 488.98 |
| MW1A | 7/10/87 | 489.04 | .01 | 489.04 |
| MW1A | 7/16/87 | 488.92 | 0.00 | 488.92 |
| MW1A | 7/30/87 | 489.04 | 0.00 | 489.04 |
| MW2 | 5/14/87 | 487.90 | 0.00 | 487.90 |
| MW2 | 5/18/87 | 487.83 | 0.00 | 487.83 |
| MW2 | 6/02/87 | 487.81 | 0.00 | 487.81 |
| MW2 | 6/03/87 | 487.81 | 0.00 | 487.81 |
| MW2 | 6/23/87 | 488.02 | 0.00 | 488.02 |
| MW2 | 7/02/87 | 487.75 | .01 | 487.76 |
| MW2 | 7/10/87 | 487.85 | 0.00 | 487.85 |
| MW2 | 7/16/87 | 487.82 | 0.00 | 487.82 |
| MW2 | 7/30/87 | 487.79 | 0.00 | 487.79 |
| MW3 | 5/14/87 | 485.74 | 0.00 | 485.74 |
| MW3 | 5/18/87 | 485.62 | 0.00 | 485.62 |
| MW3 | 6/02/87 | 485.62 | 0.00 | 485.62 |
| MW3 | 6/03/87 | 485.62 | 0.00 | 485.62 |
| MW3 | 6/23/87 | 485.70 | 0.00 | 485.70 |
| MW3 | 7/02/87 | 485.52 | .01 | 485.53 |
| MW3 | 7/10/87 | 486.76 | 0.00 | 486.76 |
| MW3 | 7/16/87 | 486.91 | 0.00 | 486.91 |
| MW3 | 7/30/87 | 486.55 | 0.00 | 486.55 |
| MW4 | 5/14/87 | 486.02 | 0.00 | 486.02 |
| MW4 | 5/18/87 | 485.87 | 0.00 | 485.87 |
| MW4 | 6/02/87 | 486.47 | 0.00 | 486.47 |
| MW4 | 6/03/87 | 486.47 | 0.00 | 486.47 |
| MW4 | 6/16/87 | 485.94 | 0.00 | 485.94 |
| MW4 | 6/23/87 | 487.14 | 0.00 | 487.14 |
| MW4 | 7/02/87 | 486.21 | .01 | 486.22 |
| MW4 | 7/16/87 | 485.67 | 0.00 | 485.67 |
| MW4 | 7/30/87 | 485.67 | 0.00 | 485.67 |
| MW5 | 5/14/87 | 487.41 | 0.00 | 487.41 |
| MW5 | 5/18/87 | 486.42 | 0.00 | 486.42 |
| MW5 | 6/02/87 | 487.33 | 0.00 | 487.33 |
| MW5 | 6/03/87 | 487.33 | 0.00 | 487.33 |
| MW5 | 6/16/87 | 487.21 | 0.00 | 487.21 |
| MW5 | 6/23/87 | 487.32 | 0.00 | 487.32 |
| MW5 | 7/02/87 | 487.22 | .01 | 487.23 |
| MW5 | 7/10/87 | 487.25 | 0.00 | 487.25 |
| MW5 | 7/16/87 | 487.18 | 0.00 | 487.18 |
| MW5 | 7/30/87 | 487.18 | 0.00 | 487.18 |

WYMAN'S METER AND TANK

CORRECTED HEAD DATA

Page 3

| WELL | DATE | WATER ELEV. | NAPL THICKNESS | CORRECTED HEAD |
|--------|---------|-------------|----------------|----------------|
| MW6 | 5/14/87 | 487.12 | 0.00 | 487.12 |
| MW6 | 5/18/87 | 487.02 | 0.00 | 487.02 |
| MW6 | 6/02/87 | 487.06 | 0.00 | 487.06 |
| MW6 | 6/03/87 | 487.06 | 0.00 | 487.06 |
| MW6 | 6/16/87 | 487.03 | 0.00 | 487.03 |
| MW6 | 6/23/87 | 487.12 | 0.00 | 487.12 |
| MW6 | 7/02/87 | 487.02 | 0.00 | 487.02 |
| MW6 | 7/10/87 | 487.03 | 0.00 | 487.03 |
| MW6 | 7/16/87 | 487.02 | 0.00 | 487.02 |
| MW6 | 7/30/87 | 486.98 | .01 | 486.99 |
| POND | 6/16/87 | 485.86 | 0.00 | 485.86 |
| POND | 6/23/87 | 485.96 | 0.00 | 485.96 |
| POND | 7/02/87 | 485.91 | 0.00 | 485.91 |
| POND | 7/10/87 | 485.45 | 0.00 | 485.45 |
| POND | 7/16/87 | 485.95 | 0.00 | 485.95 |
| POND | 7/30/87 | 482.19 | 0.00 | 482.19 |
| REC1 | 5/14/87 | 487.18 | 0.00 | 487.18 |
| REC1 | 6/16/87 | 487.25 | 0.00 | 487.25 |
| REC1 | 6/23/87 | 487.78 | 0.00 | 487.78 |
| REC1 | 7/02/87 | 487.44 | 0.00 | 487.44 |
| REC1 | 7/16/87 | 487.49 | 0.00 | 487.49 |
| REC1 | 7/30/87 | 487.18 | 0.00 | 487.18 |
| SPRING | 6/16/87 | 488.57 | 0.00 | 488.57 |
| SPRING | 6/23/87 | 488.28 | 0.00 | 488.28 |
| SPRING | 7/02/87 | 488.27 | 0.00 | 488.27 |
| SPRING | 7/10/87 | 488.16 | 0.00 | 488.16 |
| SPRING | 7/16/87 | 488.27 | 0.00 | 488.27 |
| SPRING | 7/30/87 | 488.27 | 0.00 | 488.27 |
| TP4 | 6/02/87 | 486.79 | 0.00 | 486.79 |
| TP4 | 6/03/87 | 485.58 | 0.00 | 485.58 |
| TP4 | 6/16/87 | 486.51 | .02 | 486.53 |
| TP4 | 6/23/87 | 485.88 | 0.00 | 485.88 |
| TP4 | 7/02/87 | 486.65 | .03 | 486.68 |
| TP4 | 7/10/87 | 486.64 | .03 | 486.67 |
| TP4 | 7/16/87 | 485.62 | 0.00 | 485.62 |
| TP4 | 7/30/87 | 485.25 | 0.00 | 485.25 |

APPENDIX G

Hydraulic Conductivity Calculations

CALCULATE K FOR WYMAN'S MW-1 FALLING HEAD

| | | |
|-------|---|---------|
| r_c | = | 0.08' |
| r_w | = | 0.33' |
| L_e | = | 10' |
| L_w | = | 38.5 |
| H | = | 65' |
| A | = | 2.5 |
| B | = | 0.4 |
| y_o | = | 1.6 |
| y_t | = | 0.021 |
| t | = | 10 sec. |

$$\ln \frac{R_o}{r_w} = \frac{1}{1.1} + \frac{A+B \ln[(H-L_w)/r_w]}{\ln(L_w/r_w) \cdot L_e/r_w}$$

$$\ln \frac{R_e}{r_w} = \frac{1}{\frac{1.1}{4.76} + \frac{2.5 + 0.4(4.39)}{30.3}} = \frac{1}{0.65} = 2.69$$

$$K = \frac{r_c^2 \ln(R_o/r_w)}{2L_e} = \frac{1}{20} \ln \frac{y_o}{y_t} = \frac{.006 \cdot 1.54}{20} = \frac{1}{10} \ln \frac{1.6}{.021} = .0002 \text{ ft/sec}$$

$$K = \frac{.006 \cdot 1.54}{20} = \frac{1}{10} \cdot 4.08 = .0002 \text{ ft/sec}$$

$K = 34.56 \text{ ft/day}$

FALLING-HEAD

10

Wymans Mw1 Falling Head K Test October 2, 1987

1

Yt
(ft)

.1

.01

.001

0 5 10 15 20 25 30 35

+

+

+

+

+

+

+

+

+

+

+

+

+

Vertical text on the left margin, possibly a file path or reference number.

CALCULATE K FOR WYMAN'S MW-1 RISING HEAD

| | | | | | |
|----|------------|------------|----|---|-------------|
| Lw | Total Pipe | 45 | rc | = | 1" or 0.08' |
| | Water Well | <u>6.5</u> | rw | = | 0.33' |
| | Lw = | 38.5 | Le | = | 10' |
| | | | Lw | = | 38.5 |
| | | | yo | = | 1.25 |
| | | | A | = | 2.5 |
| | | | B | = | 0.4 |
| | | | H | = | 65 |
| | | | yt | = | 0.021 |
| | | | t | = | 10 sec. |

$$\ln \frac{R_e}{r_w} = \frac{1}{\frac{1.1}{\ln(L_w/r_w)} + \frac{A+B \ln[(H-L_w)/r_w]}{L_e/r_w}}$$

$$\ln \frac{R_e}{0.33} = \frac{1}{\frac{1.1}{\ln(38.5/0.33)} + \frac{2.5+0.4 \ln[(65-38.5)/0.33]}{(10/0.33)}}$$

$$\ln \frac{R_e}{0.33} = \frac{1}{\frac{1.1}{4.76} + \frac{12.71}{30.3}} = 0.65$$

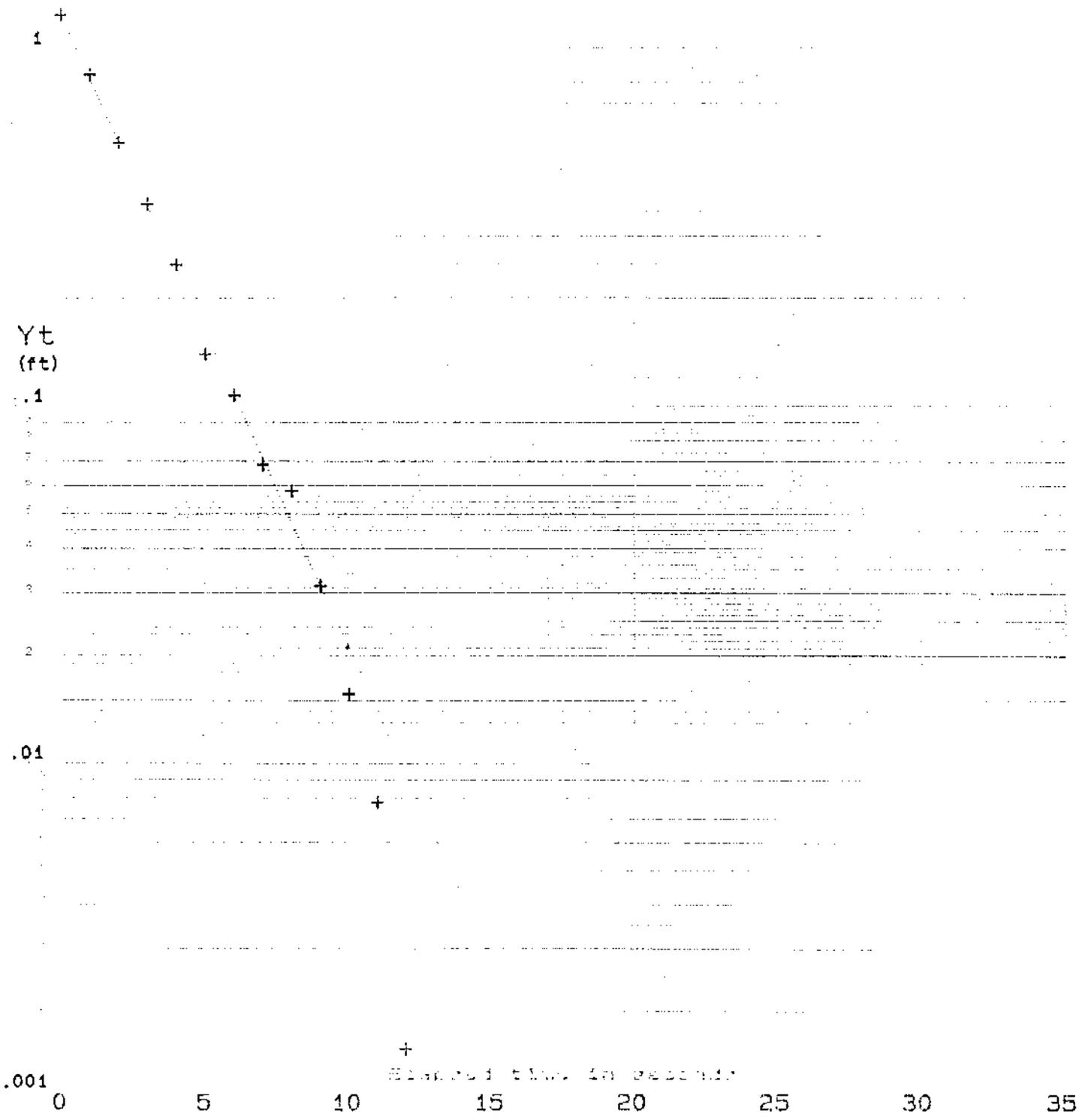
$$\ln \frac{R_e}{0.33} = 2.69$$

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \cdot \frac{1}{t} \ln \frac{y_o}{y_t}$$

$$K = \frac{.006 \cdot 1.54}{20} \cdot \frac{1}{10} \cdot 4.08 = .0004 \text{ ft/sec}$$

= 0.022 ft/min x 1440 min/day
 = 31.77 ft/day

WYMANS RISING HEAD TEST MW1 OCT. 2, 1987



CALCULATE K FOR WYMAN'S MW-6 FALLING HEAD SLUG TEST

| | | |
|-------|---|--------|
| r_c | = | 0.08' |
| r_w | = | 0.33' |
| L_e | = | 10' |
| L_w | = | 10.68' |
| y_o | = | 1.5 |
| A | = | 2.5 |
| B | = | 0.4 |
| H | = | 16' |
| y_t | = | 0.24 |
| t | = | 5 min. |

$$\ln \frac{R_e}{r_w} = \frac{1.1}{\ln(L_w/r_w)} + \frac{1}{\frac{A+B \ln[(H-L_w)/r_w]}{L_e/r_w}}$$

$$\ln \frac{R_e}{r_w} = \frac{1.1}{\ln(10.68/0.33)} + \frac{1}{\frac{2.5+0.4 \ln[(16-10.68)0.33]}{(10/0.33)}}$$

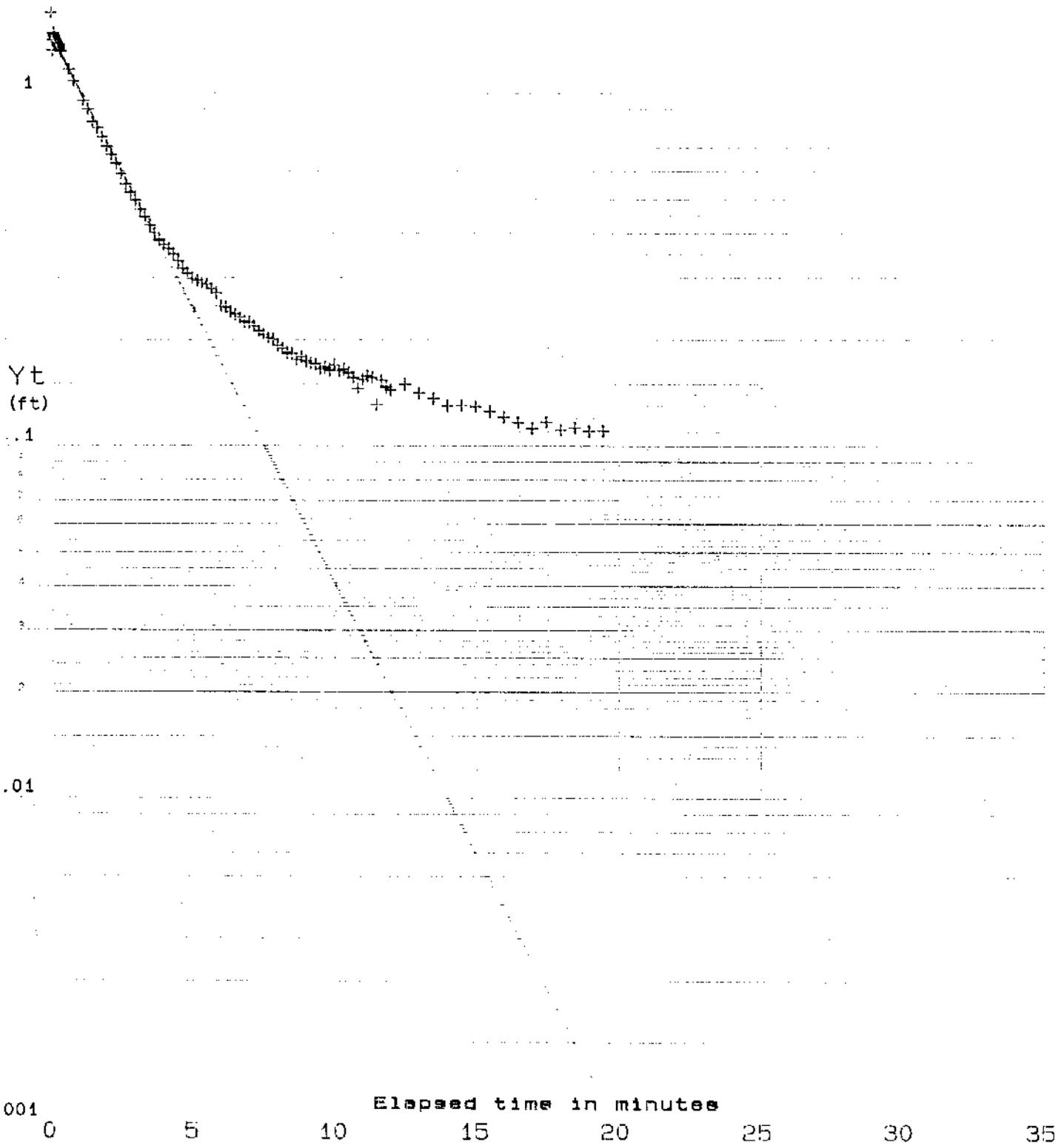
$$\ln \frac{R_e}{r_w} = 2.3$$

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{y_o}{y_t}$$

K = 0.0003 ft/min
 K = 0.37 ft/day

WYMAN'S-SLUG.RIS

Wyman's Hydraulic Conductivity Test MW 6 Falling Head October 2, 1987



CALCULATE K FOR WYMAN'S MW-6 RISING HEAD SLUG TEST

| | | | | | |
|----|------------|-------------|----|---|--------|
| Lw | Total Pipe | 15' | rc | = | 0.08' |
| | Water Well | <u>4.32</u> | rw | = | 0.33' |
| | Lw = | 10.68 | Le | = | 10' |
| | | | Lw | = | 10.68' |
| | | | yo | = | 0.70 |
| | | | A | = | 2.5 |
| | | | B | = | 0.4 |
| | | | H | = | 16' |
| | | | yt | = | 0.165 |
| | | | t | = | 5 min. |

$$\ln \frac{R_e}{r_w} = \frac{1.1}{\ln(L_w/r_w)} + \frac{1}{\frac{A+B \ln[(H-L_w)/r_w]}{L_e/r_w}}$$

$$\ln \frac{R_e}{r_w} = \frac{1.1}{\ln(10.68/0.33)} + \frac{1}{\frac{2.5+0.4 \ln[(16-10.68)/0.33]}{(10/0.33)}}$$

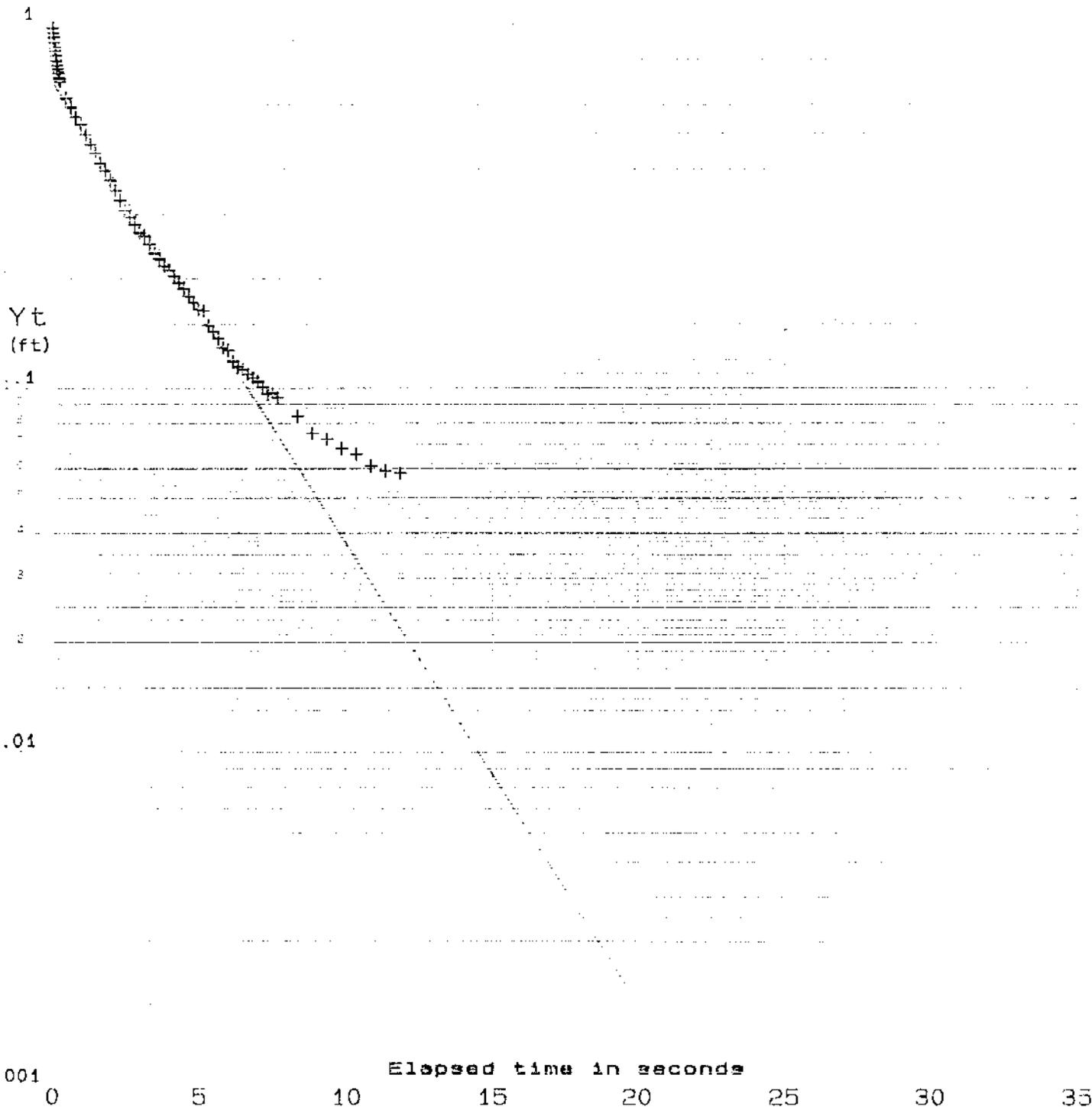
$$\ln \frac{R_e}{r_w} = 2.3$$

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \cdot \frac{1}{t} \ln \frac{y_o}{y_t}$$

K = 0.0002 ft/min
 K = 0.29 ft/day

WYMAN'S-RISING.SLUG

Wyman's Hydraulic Conductivity Test MW6 Rising Head October 2, 1987



U.S. GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

APPENDIX H

Soil Sample Location Descriptions

WYMAN'S SOIL SAMPLES

Sample Number: W1
Date: 4/20/87 Taken from pile of soil near steaming pad. Later moved to soil storage site.

Time:

Sample Number: W2
Date: 4/20/87 Taken from east end of drainage ditch approximately 6 inches deep.

Time: 10:10

PID: 65

Sample Number: W3
Date 4/20/87 Taken approximately 7 feet west of drain and 2 feet below surface.

Time:

PID: 3.5

Sample Number: W4
Date: 4/20/87 Taken below W3 at approximately 5 feet. Adjacent to first section of culvert.

Time: 11:05

PID: 13.2

Sample Number: W5
Date: 4/20/87 Taken at a depth of 3 feet, 17 feet west of drain, 3 feet to the north of culvert.

Time: 11:52

PID: 0

Sample Number: W6 *
Date: 4/20/87 Taken at a depth of 1 foot below first section of culvert, 5 feet west of drain, sandy silt.

Time: 13:13

PID:

Sample Number: W7
Date: 4/20/87 Taken at a depth of 1 foot (just above tank) between TP 3 and TP 4, grey stoney silt.

Time:

PID:

Sample Number: W8
Date: 4/20/87 Taken across Route 12 in a lawn. For use as a "blank" in portable gas chromatograph. No duplicate taken.

Time:

PID:

Sample Number: W9 *
Date: Taken from the bottom of the excavated drainage ditch
Time:
PID:

Sample Number: W10 *
Date: Taken from the side of the excavated drainage ditch.
Time:
PID:

Sample Number: W11 *
Date: 4/20/87 Taken in cavity from which drain inlet was removed.
Time: 16:01
PID:

Sample Number: W12 *
Date: 4/20/87 Taken at a depth of 3 feet from the wall of the excavated drain near TP 5.
Time:
PID:

Sample Number: W14 *
Date: 4/21/87 Taken at a depth of approximately 2.5 feet just above and to the northwest of the second tank.
Time: 9:29
PID:

Sample Number: W15
Date: 4/21/87 Sludge in trench from tanks 1 and 2.
Time: 11:12
PID:

Sample Number: W16 *
Date: 4/21/87 Taken at a depth of 2 feet approximately 3 feet northwest of tank #3.
Time:
PID:

Sample Number: W17 *
Date 4/23/87 From west side of trench at westernmost tank in pond (tank #5) grey silty sand.
Time: 7:45
PID:

Sample Number: W18 *
Date: 4/23/87 Composit of slude from separation pond.
Time: 2:50
PID:

Sample Number: W19*
Date: 4/23/87 Composit of sludge from sludge lagoon.
Time: 2:45
PID:

Sample Number: Lagoon
For lead analysis of lagoon sludge.

* Sent to Aquatec on 4/24/87 for analysis.

SP/djM
WYMAN'S.SAM

APPENDIX I

Water Supply Lab Sheets



A division of Groundwater Technology, Inc.

Northeast Region
4 Mill Street, Greenville, NH 03048
(603) 878-2500
NE Area (800) 423-6153
In NH (800) 922-3422

HYDROCARBONS IN WATER ug/L (ppb)
REPORT NO. MA-2461-36

Table with 9 columns: Sample I.D., DATE SAMPLED, DATE RUN, BENZENE, TOLUENE, ETHYL BENZENE, TOTAL XYLENES, TOTAL BTEX. Rows include samples 34910 WSO, 34911 WIR, and 34912 SAAB with their respective concentrations.

*NOTES:

ND = NONE DETECTED

TOTAL BTEX = THE SUM OF BENZENE, TOLUENE, ETHYL BENZENE, AND XYLENES, ROUNDED TO TWO SIGNIFICANT FIGURES.



A division of Groundwater Technology, Inc.

Northeast Region
4 Mill Street, Greenville, NH 03048
(603) 878-2500
NE Area (800) 423-6153
In NH (800) 922-3422

HYDROCARBONS IN WATER ug/L (ppb)
REPORT NO. MA-2461-36

Table with 5 columns: SAMPLE NO., I.D., C4-C12 ALIPHATIC HYDROCARBONS, MISC AROMATICS C8-C12, TOTAL. Rows include sample numbers 34910, 34911, and 34912 with their respective I.D. and hydrocarbon concentrations.

*NOTES:

TOTAL = THE SUM OF THE TOTAL BTEX AND THE ABOVE PARAMETERS.

ND = NONE DETECTED

WSO = WYMAN SEPARATOR OUTFLOW

WIR = WYMAN INT. ROAD

SAAB = SAAB REPAIR

S = UNCATEGORIZED COMPOUNDS PRESENT AT LESS THAN 12 PPB.



A division of Groundwater Technology, Inc.

Northeast Region
4 Mill Street, Greenville, NH 03048
(603) 878-2500
NE Area (800) 423-6153
In NH (800) 922-3422

HYDROCARBONS IN WATER ug/L (ppb)
REPORT NO. MA-2461-59

| SAMPLE NO. | I.D. | C4-C12 ALIPHATIC HYDROCARBONS | MISC AROMATICS C8-C12 | TOTAL |
|------------|------|-------------------------------------|-----------------------------|-------|
| 37345 | TAP | 0.7 | 0.6 | 1.9 |

*NOTES:

TOTAL = THE SUM OF THE TOTAL BTEX AND THE ABOVE PARAMETERS.

ND = NONE DETECTED

Exception: Sample contained bubbles.



A division of Groundwater Technology, Inc.

Northeast Region
4 Mill Street, Greenville, NH 03048
(603) 878-2500
NE Area (800) 423-6153
In NH (800) 922-3422

HYDROCARBONS IN WATER ug/L. (ppb)
REPORT NO. MA-2461-59

| Sample I.D. | DATE SAMPLED | DATE RUN | BENZENE | TOLUENE | ETHYL BENZENE | TOTAL XYLENES | TOTAL BTEX |
|-------------|--------------|----------|---------|---------|---------------|---------------|------------|
| 37345 TAP | 1/13/87 | 1/16/87 | ND | 0.6 | ND | ND | 0.6 |

*NOTES:

ND = NONE DETECTED

TOTAL BTEX = THE SUM OF BENZENE, TOLUENE, ETHYL BENZENE,
AND XYLENES, ROUNDED TO TWO SIGNIFICANT FIGURES.



Industrial & Environmental Analysis, Inc.

P.O. Box 626 • Essex Junction, Vermont 05452 • 802-878-5138

ANALYSIS REPORT

Customer: Johnson Co.
 Address: 5 State Street
 City, State, Zip: Montpelier, VT 05602
 Attention: Chris Stone

Date: 22 Dec 1986
 Date Samples Received: 5 Dec 1986

 WYMAN PUMP & METER - WATER ANALYSIS

| | <u>Dissolved Lead (mg/L)</u> | <u>Dissolved Chromium (mg/L)</u> | <u>Dissolved Cadmium (mg/L)</u> |
|-----------|----------------------------------|--------------------------------------|-------------------------------------|
| SAAB | <0.005 | <0.025 | <0.01 |
| Culvert | <0.005 | <0.025 | <0.01 |
| Pond Out | <0.005 | <0.025 | <0.01 |
| Tap Water | <0.005 | <0.025 | <0.01 |

Signature

Reference: 28650



aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL: 802-858-1004

ANALYTICAL REPORT

Date: 13 April 1987

Aquatec Lab No.: 69273

ETR No.: 10100

Sample Received On: 8 April 1987

Sample Identification: The Johnson Company, water sample labeled WYMAN,
4/6/87 at 0900 hours

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
111-892-655-1074

ANALYTICAL REPORT

Date: 13 April 1987

Aquatec Lab No.: 69272

ETR No.: 10100

Sample Received On: 8 April 1987

Sample Identification: The Johnson Company, water sample labeled SAAB, 4/6/87
at 0840 hours

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 13 April 1987

Aquatec Lab No.: 69271

ETR No.: 10100

Sample Received On: 8 April 1987

Sample Identification: The Johnson Company, water sample labeled NEWCTTY,
4/6/87 at 0820 hours

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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

APPENDIX J

Ground Water Lab Sheets



A division of Groundwater Technology, Inc.

Northeast Region
4 Mill Street, Greenville, NH 03048
(603) 878-2500
NE Area (800) 423-6153
In NH (800) 922-3422

HYDROCARBONS IN WATER ug/L (ppb)
REPORT NO. MA-2461-47

| SAMPLE NO. | I.D. | C4-C12 ALIPHATIC HYDROCARBONS | MISC AROMATICS C8-C12 | TOTAL |
|------------|------|-------------------------------------|-----------------------------|-------|
| 36170 | TP-1 | 390 | 1000 | 1600 |
| 36171 | TP-2 | NOT ANALYZED; EMULSION PRESENT | | |
| 36172 | TP-4 | NOT ANALYZED; EMULSION PRESENT | | |

*NOTES:

TOTAL = THE SUM OF THE TOTAL BTEX AND THE ABOVE PARAMETERS.

ND = NONE DETECTED



A division of Groundwater Technology, Inc.

Northeast Region
4 Mill Street, Greenville, NH 03048
(603) 878-2500
NE Area (800) 423-6153
In NH (800) 922-3422

HYDROCARBONS IN WATER ug/L (ppb)
REPORT NO. MA-2461-47

| Sample I.D. | DATE SAMPLED | DATE RUN | BENZENE | TOLUENE | ETHYL BENZENE | TOTAL XYLENES | TOTAL BTEX |
|-------------|-----------------|-------------|--------------------------------|---------|------------------|------------------|---------------|
| 36170 TP-1 | 12/8/86 | 12/15/86 | 8.0 | 4.1 | 11 | 180 | 200 |
| 36171 TP-2 | 12/8/86 | | NOT ANALYZED; EMULSION PRESENT | | | | |
| 36172 TP-4 | 12/8/86 | | NOT ANALYZED; EMULSION PRESENT | | | | |

*NOTES:

ND = NONE DETECTED

TOTAL BTEX = THE SUM OF BENZENE, TOLUENE, ETHYL BENZENE,
AND XYLENES, ROUNDED TO TWO SIGNIFICANT FIGURES.



RECEIVED JUN 16 1987

aquatec

ENVIRONMENTAL SERVICES

73 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 656-1074

ANALYTICAL REPORT

Date: 16 June 1987

Aquatec Lab No.: 71134

ETR No.: 10569

Sample Received On: 4 June 1987

Sample Identification: Wyman Meter and Tank, water sample, received from The Johnson Company, labeled MW-3, collected 6/3/87 at 1145 hours

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



aquatec

ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL: 802 658-1074

ANALYTICAL REPORT

Date: 23 May 1987

Aquatec Lab No.: 70588

ETR No.: 10455

Sample Received On: 20 May 1987

Sample Identification: The Johnson Company, water sample labeled monitoring well #1, 5/18/87 at 1410 hours

Volatile Organic Compounds in ug/l

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

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

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

LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.

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

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



ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 28 May 1987

Aquatec Lab No.: 70539

EFR No.: 10455

Sample Received On: 20 May 1987

Sample Identification: The Johnson Company, water sample labeled monitoring well #2, 5/18/87 at 1500 hours

Volatile Organic Compounds in ug/l

| | | | | |
|---------------------------|-----|---|----------------------|------|
| benzene | 7 | | methylene chloride | LCB |
| carbon tetrachloride | 5 | U | chloromethane | 10 U |
| chlorobenzene | 5 | U | bromomethane | 10 U |
| 1,2-dichloroethane | 5 | U | bromoform | 5 U |
| 1,1,1-trichloroethane | 5 | U | bromodichloromethane | 5 U |
| 1,1-dichloroethane | 5 | U | dibromochloromethane | 5 U |
| 1,1,2-trichloroethane | 5 | U | tetrachloroethene | 5 U |
| 1,1,2,2-tetrachloroethane | 5 | U | toluene | 5 C |
| chloroethane | 10 | U | trichloroethene | 5 U |
| 2-chloroethyl vinyl ether | 10 | U | vinyl chloride | 10 U |
| chloroform | 5 | U | acetone | 10 U |
| 1,1-dichloroethene | 5 | U | 2-butanone | 10 U |
| 1,2-dichloroethene | 5 | U | carbon disulfide | 5 U |
| 1,2-dichloropropane | 5 | U | 2-hexanone | 10 U |
| trans-1,3-dichloropropene | 5 | U | 4-methyl-2-pentanone | 10 U |
| cis-1,3-dichloropropene | 5 | U | styrene | 5 U |
| ethylbenzene | 2 | J | vinyl acetate | 10 U |
| dichlorobenzenes | 120 | | total xylenes | 44 |

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 28 May 1987

Aquatec Lab No.: 70590

ETR No.: 10455

Sample Received On: 20 May 1987

Sample Identification: The Johnson Company, water sample labeled monitoring well #5, 5/18/87 at 1630 hours

Volatile Organic Compounds in ug/l

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

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

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

LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.

J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.

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

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802-658-1074

ANALYTICAL REPORT

Date: 15 September 1987
Aquatec Lab No.: 74801
ETR No.: 11501
Sample Received On: 3 September 1987
Sample Identification: Wyman's Meter and Tank Equipment, Inc., water sample labeled MW-2

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802-658-1074

ANALYTICAL REPORT

Date: 15 September 1987

Aquatec Lab No.: 74800

ETR No.: 11501

Sample Received On: 3 September 1987

Sample Identification: Wyman's Meter and Tank Equipment, Inc., water sample labeled MW-1

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 15 September 1987

Aquatec Lab No.: 74802

ETR No.: 11501

Sample Received On: 3 September 1987

Sample Identification: Wyman's Meter and Tank Equipment, Inc., water sample
labeled MW-3

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 15 September 1987

Aquatec Lab No.: 74803

ETR No.: 11501

Sample Received On: 3 September 1987

Sample Identification: Wyman's Meter and Tank Equipment, Inc., water sample labeled MW-5

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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

APPENDIX K

Surface Water Lab Sheets



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL: 802 658-1074

ANALYTICAL REPORT

Date: 13 April 1987

Aquatec Lab No.: 68274

ETR No.: 10100

Sample Received On: 8 April 1987

Sample Identification: The Johnson Company, water sample labeled SEPOUT,
4/6/87 at 0910 hours

Volatile Organic Compounds in ug/l

| | | | |
|---------------------------|------|----------------------|------|
| benzene | 110 | methylene chloride | 5 U |
| carbon tetrachloride | 5 U | chloromethane | 10 U |
| chlorobenzene | 5 U | bromomethane | 10 U |
| 1,2-dichloroethane | 5 U | bromoform | 5 U |
| 1,1,1-trichloroethane | 45 | bromodichloromethane | 5 U |
| 1,1-dichloroethane | 8 | dibromochloromethane | 5 U |
| 1,1,2-trichloroethane | 5 U | tetrachloroethene | 5 U |
| 1,1,2,2-tetrachloroethane | 5 U | toluene | 160 |
| chloroethane | 10 U | trichloroethene | 28 |
| 2-chloroethyl vinyl ether | 10 U | vinyl chloride | 10 U |
| chloroform | 5 U | acetone | 48 C |
| 1,1-dichloroethene | 5 U | 2-butanone | 10 U |
| 1,2-dichloroethene | 48 | carbon disulfide | 5 U |
| 1,2-dichloropropane | 5 U | 2-hexanone | 10 U |
| trans-1,3-dichloropropene | 5 U | 4-methyl-2-pentanone | 7 J |
| cis-1,3-dichloropropene | 5 U | styrene | 5 U |
| ethylbenzene | 5 U | vinyl acetate | 10 U |
| | | total xylenes | 250 |

Sample contains other aromatic and aliphatic hydrocarbons.

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

- | | |
|---|--|
| U - The compound was analyzed for but not detected. The number is the detection limit for the compound. | J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound. |
| LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible. | C - The result has been corrected for the presence of the compound in the blank. |

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-7074

ANALYTICAL REPORT

Date: 3 September 1987

Aquatec Lab No.: 73895

ETR No.: 11292

Sample Received On: 14 August 1987

Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., water sample labeled ERCVT, collected 8/13/87 at 0900 hours

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Date: 3 September 1987

Aquatec Lab No.: 73894

ETR No.: 11292

Sample Received On: 14 August 1987

Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., water sample
labeled Pond, collected 8/13/87 at 0930 hours

Volatile Organic Compounds in ug/l

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

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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

APPENDIX L

Soil and Sludge Lab Sheets



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ENVIRONMENTAL SERVICES

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

RECEIVED OCT 01 1986

ANALYTICAL REPORT

The Johnson Company
5 State Street
Montpelier, VT 05602

Attn: Karl Johnson

Date: 9/30/86
Project No: 86500
ETR No: 8528
Sample(s) Received On: 9/4/86
Page 2 of 2

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 62239 | 62240 | 62241 | 62242 | | | | |
|--|-------|-------|-------|-------|--|--|--|--|
| The Following are Metals in an EP Toxicity Extract | | | | | | | | |
| Lead | 11 | 88 | <2.5 | <2.5 | | | | |
| Barium | <20 | <20 | <20 | <20 | | | | |
| Cadmium | <0.5 | <0.5 | <0.5 | <0.5 | | | | |
| Chromium | <2.5 | <2.5 | <2.5 | <2.5 | | | | |
| Arsenic | <2.5 | <2.5 | <2.5 | <2.5 | | | | |

Lab No.

Sample Description

- 62239. Soil sample labeled WMT-INV composite, collected 9/4/86 at 1018 hours.
- 62240. Soil sample labeled WMT-INV ditch, collected 9/4/86 at 1010 hours.
- 62241. Soil sample labeled WMT-INV separator, collected 9/4/86 at 1015 hours.
- 62242. Soil sample labeled WMT-INV stream, collected 9/4/86 at 1012 hours.

Submitted By:

R. Mason McKeen

Aquatec Inc.



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ENVIRONMENTAL SERVICES

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

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WYMAN'S

ANALYTICAL REPORT

The Johnson Company
5 State Street
Montpelier, VT 05602

Attn: Karl Johnson

Date: 9/30/86
Project No: 86500
ETR No: 8528
Sample(s) Received On: 9/4/86
Page 1 of 2

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 62239 | 62240 | 62241 | 62242 | | | | |
|--|-------|--------|-------|-------|--|--|--|--|
| Flashpoint (°F) | 110 | 135 | 138 | 134 | | | | |
| PCB's in Soil (mg/Kg wet) | <20* | <40* | 0.27 | <0.1 | | | | |
| The Following Results are in mg/Kg wet | | | | | | | | |
| Total Lead | 2,300 | 15,000 | 380 | 570 | | | | |
| Total Barium | 400 | 2000 | 93 | 167 | | | | |
| Total Cadmium | 6.4 | 13.8 | 4.1 | 6.1 | | | | |
| Total Chromium | 90 | 121 | 41 | 27 | | | | |
| Total Arsenic | <25 | <25 | <25 | <25 | | | | |
| Note: P.O. No. 1040, Client Code WMT/INV | | | | | | | | |

Lab No.

Sample Description

62239. Soil sample labeled WMT-INV composite, collected 9/4/86 at 1018 hours.

62240. Soil sample labeled WMT-INV ditch, collected 9/4/86 at 1010 hours.

62241. Soil sample labeled WMT-INV separator, collected 9/4/86 at 1015 hours.

62242. Soil sample labeled WMT-INV stream, collected 9/4/86 at 1012 hours.

* = Interfering substances precluded quantification to a lower detection limit.

Submitted By:

R. Mason McAfee

Aquatec Inc.



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074**ANALYTICAL REPORT**

Date: 9 October 1986

Aquatec Lab No.: 62204

ETR No.: 8516

Sample Received On: 3 September 1986

Sample Identification: The Johnson Company soil sample labeled
Wyman's stream, collected 9/2/86 at 1555 hours

Volatile Organic Compounds in ug/kg

| | |
|---------------------------|-----|
| chloromethane | <5 |
| bromomethane | <5 |
| vinyl chloride | <5 |
| chloroethane | <5 |
| 1,1-dichloroethane | <5 |
| trans-1,2-dichloroethene | <5 |
| chloroform | <5 |
| 1,2-dichloroethane | <5 |
| 1,1,1-trichloroethane | 100 |
| carbon tetrachloride | <5 |
| bromodichloromethane | <5 |
| 1,2-dichloropropane | <5 |
| trans-1,3-dichloropropene | <5 |
| trichloroethene | 47 |
| cis-1,3-dichloropropene | <5 |
| dibromochloromethane | <5 |
| 1,1,2-trichloroethane | <5 |
| bromoform | <5 |
| tetrachloroethene | <5 |
| 1,1,2,2-tetrachloroethane | <5 |
| chlorobenzene | <5 |
| methylene chloride | <5 |
| trichlorofluoromethane | <5 |
| 1,1-dichloroethene | <5 |
| o-dichlorobenzene | <5 |
| p-dichlorobenzene | <5 |
| m-dichlorobenzene | <5 |

Note: The sample was analyzed by gas chromatography, EPA
Method 601.



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05401
TEL. 802/658-1074**ANALYTICAL REPORT**

Date: 9 October 1986

Aquatec Lab No.: 62203

ETR No.: 8516

Sample Received On: 3 September 1986

Sample Identification: The Johnson Company soil sample labeled
Wyman's separator, collected 9/2/86 at
1550 hours

Volatile Organic Compounds in ug/kg

| | |
|---------------------------|-----|
| chloromethane | <5 |
| bromomethane | <5 |
| vinyl chloride | <5 |
| chloroethane | <5 |
| 1,1-dichloroethane | 56 |
| trans-1,2-dichloroethene | 330 |
| chloroform | <5 |
| 1,2-dichloroethane | <5 |
| 1,1,1-trichloroethane | 110 |
| carbon tetrachloride | <5 |
| bromodichloromethane | <5 |
| 1,2-dichloropropane | <5 |
| trans-1,3-dichloropropene | <5 |
| trichloroethene | 23 |
| cis-1,3-dichloropropene | <5 |
| dibromochloromethane | <5 |
| 1,1,2-trichloroethane | <5 |
| bromoform | <5 |
| tetrachloroethene | <5 |
| 1,1,2,2-tetrachloroethane | <5 |
| chlorobenzene | 17 |
| methylene chloride | <5 |
| trichlorofluoromethane | <5 |
| 1,1-dichloroethene | <5 |
| o-dichlorobenzene | 9.4 |
| p-dichlorobenzene | <5 |
| m-dichlorobenzene | <5 |

Note: The sample was analyzed by gas chromatography, EPA
Method 601.



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ENVIRONMENTAL SERVICES

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

RECEIVED OCT 16 1986

ANALYTICAL REPORT

Date: 9 October 1986
Aquatec Lab No.: 62202
ETR No.: 8516
Sample Received On: 3 September 1986
Sample Identification: The Johnson Company soil sample labeled
Wyman's ditch, collected 9/2/86 at 1545 hours

Volatile Organic Compounds in ug/kg

| | |
|---------------------------|-----------|
| chloromethane | <10,000 |
| bromomethane | <10,000 |
| vinyl chloride | <10,000 |
| chloroethane | <10,000 |
| 1,1-dichloroethane | 64,000 |
| trans-1,2-dichloroethene | <10,000 |
| chloroform | <10,000 |
| 1,2-dichloroethane | <10,000 |
| 1,1,1-trichloroethane | 5,100,000 |
| carbon tetrachloride | <10,000 |
| bromodichloromethane | <10,000 |
| 1,2-dichloropropane | <10,000 |
| trans-1,3-dichloropropene | <10,000 |
| trichloroethene | 2,900,000 |
| cis-1,3-dichloropropene | <10,000 |
| dibromochloromethane | <10,000 |
| 1,1,2-trichloroethane | <10,000 |
| bromoform | <10,000 |
| tetrachloroethene | <10,000 |
| 1,1,2,2-tetrachloroethane | <10,000 |
| chlorobenzene | <10,000 |
| methylene chloride | <10,000 |
| trichlorofluoromethane | <10,000 |
| 1,1-dichloroethene | <10,000 |
| o-dichlorobenzene | <10,000 |
| p-dichlorobenzene | <10,000 |
| m-dichlorobenzene | <10,000 |

Note: The sample was analyzed by gas chromatography, EPA Method 601.



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ENVIRONMENTAL SERVICES

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

ANALYTICAL REPORT

Date: 9 October 1986

Aquatec Lab No.: 62201

ETR No.: 8516

Sample Received On: 3 September 1986

Sample Identification: The Johnson Company soil sample labeled
Wyman's (C) collected 9/2/86 at 1545 hours

Volatile Organic Compounds in ug/kg

| | |
|---------------------------|---------|
| chloromethane | <1000 |
| bromomethane | <1000 |
| vinyl chloride | <1000 |
| chloroethane | <1000 |
| 1,1-dichloroethane | 6100 |
| trans-1,2-dichloroethene | <1000 |
| chloroform | <1000 |
| 1,2-dichloroethane | <1000 |
| 1,1,1-trichloroethane | 320,000 |
| carbon tetrachloride | <1000 |
| bromodichloromethane | <1000 |
| 1,2-dichloropropane | <1000 |
| trans-1,3-dichloropropene | <1000 |
| trichloroethene | 190,000 |
| cis-1,3-dichloropropene | <1000 |
| dibromochloromethane | <1000 |
| 1,1,2-trichloroethane | <1000 |
| bromoform | <1000 |
| tetrachloroethene | <1000 |
| 1,1,2,2-tetrachloroethane | <1000 |
| chlorobenzene | <1000 |
| methylene chloride | <1000 |
| trichlorofluoromethane | <1000 |
| 1,1-dichloroethene | <1000 |
| o-dichlorobenzene | <1000 |
| p-dichlorobenzene | <1000 |
| m-dichlorobenzene | <1000 |

Note: The sample was analyzed by gas chromatography, EPA Method 601.



Industrial & Environmental Analysts, Inc.
P.O. Box 626 • Essex Junction, Vermont 05452 • 802-878-5138

ANALYSIS REPORT

| | |
|------------------------|----------------------|
| Customer: | Johnson Company |
| Address: | 5 State Street |
| City, State, Zip: | Montpelier, VT 05602 |
| Attention: | Chris Stone |
| Date: | 22 Dec 1986 |
| Date Samples Received: | 12 Dec 1986 |

=====

WYMAN LEAD ANALYSIS

| | <u>Lead (mg/kg dry wt.)</u> |
|-----------|-----------------------------|
| TP1: 0-1' | 48.8 |
| TP1: 1-2' | 8.45 |
| TP1: 3-4' | 6.97 |
| TP2: 0-3' | 4.04 |
| TP5 | 4.72 |

Signature Catherine W. Cutting

Reference: 28650



ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802.638-1074

ANALYTICAL REPORT

Date: 3 September 1987
Aquatec Lab No.: 73887
ETR No.: 11292
Sample Received On: 14 August 1987
Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., sludge
sample labeled SLC #1, collected 8/7/87 at 1530 hours

Volatile Organic Compounds in ug/kg as received

| | | | |
|---------------------------|--------|----------------------|--------|
| benzene | 810 J | methylene chloride | LCB |
| carbon tetrachloride | 3000 U | chloromethane | 6000 U |
| chlorobenzene | 3000 U | bromomethane | 6000 U |
| 1,2-dichloroethane | 3000 U | bromoform | 3000 U |
| 1,1,1-trichloroethane | 3000 U | bromodichloromethane | 3000 U |
| 1,1-dichloroethane | 3000 U | dibromochloromethane | 3000 U |
| 1,1,2-trichloroethane | 3000 U | tetrachloroethene | 3000 U |
| 1,1,2,2-tetrachloroethane | 3000 U | toluene | 3000 |
| chloroethane | 6000 U | trichloroethene | 3000 U |
| 2-chloroethyl vinyl ether | 6000 U | vinyl chloride | 6000 U |
| chloroform | 3000 U | acetone | LCB |
| 1,1-dichloroethene | 3000 U | 2-butanone | LCB |
| 1,2-dichloroethene | 3000 U | carbon disulfide | 3000 U |
| 1,2-dichloropropane | 3000 U | 2-hexanone | 6000 U |
| trans-1,3-dichloropropene | 3000 U | 4-methyl-2-pentanone | 6000 U |
| cis-1,3-dichloropropene | 3000 U | styrene | 3000 U |
| ethylbenzene | 9800 | vinyl acetate | 6000 U |
| methylcyclohexane | 5400 | total xylenes | 92,000 |

Sample was diluted 600 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



Aquatec

ENVIRONMENTAL SERVICES

77 Green Mountain Drive, So. Burlington, VT 05403
TEL: 802-658-1074

ANALYTICAL REPORT

Date: 28 May 1987

Aquatec Lab No.: 70240

ETR No.: 10361

Sample Received On: 8 May 1987

Sample Identification: The Johnson Company, tank sludge sample dated 5/4/87
at 1600 hours

Volatile Organic Compounds in ug/l

| | | | |
|---------------------------|-------|----------------------|--------|
| benzene | 520 | methylene chloride | 5 U |
| carbon tetrachloride | 100 U | chloromethane | 200 U |
| chlorobenzene | 100 U | bromomethane | 200 U |
| 1,2-dichloroethane | 100 U | bromoform | 100 U |
| 1,1,1-trichloroethane | 65 J | bromodichloromethane | 100 U |
| 1,1-dichloroethane | 25 J | dibromochloromethane | 100 U |
| 1,1,2-trichloroethane | 100 U | tetrachloroethene | 100 U |
| 1,1,2,2-tetrachloroethane | 100 U | toluene | 1500 C |
| chloroethane | 200 U | trichloroethene | 71 J |
| 2-chloroethyl vinyl ether | 200 U | vinyl chloride | 200 U |
| chloroform | 100 U | acetone | 200 U |
| 1,1-dichloroethene | 100 U | 2-butanone | 200 U |
| 1,2-dichloroethene | 100 U | carbon disulfide | 100 U |
| 1,2-dichloropropane | 100 U | 2-hexanone | 200 U |
| trans-1,3-dichloropropene | 100 U | 4-methyl-2-pentanone | 200 U |
| cis-1,3-dichloropropene | 100 U | styrene | 100 U |
| ethylbenzene | 290 | vinyl acetate | 200 U |
| | | total xylenes | 1900 |

Sample was diluted 20 fold for analysis.

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

- | | |
|---|--|
| U - The compound was analyzed for but not detected. The number is the detection limit for the compound. | J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound. |
| LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible. | C - The result has been corrected for the presence of the compound in the blank. |

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1071

ANALYTICAL REPORT

Wyman's Meter and Tank
Box 541
Montpelier, VT 05602

Date: 6/15/87
Project No: 87400
ETR No: 10372
Sample(s) Received On: 5/8/87
Page 1 of 2

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 70263 | | | | | | | |
|---------------------------------------|-------|--|--|--|--|--|--|--|
| <u>Metals in EP Toxicity Extract:</u> | | | | | | | | |
| Arsenic | <1 | | | | | | | |
| Barium | <5 | | | | | | | |
| Cadmium | <0.25 | | | | | | | |
| Chromium | <1 | | | | | | | |
| Lead | <1 | | | | | | | |
| Mercury | <0.04 | | | | | | | |
| Selenium | <1 | | | | | | | |
| Silver | <1 | | | | | | | |

Lab No.

Sample Description

70263. Sludge, labeled LS-2, 5/8/87 at 1415 hours.

Submitted By:

R. Mason McNeely

Aquatec Inc.



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL: 802 638-1074

ANALYTICAL REPORT

Wyman's Meter and Tank
Box 541
Montpelier, VT 05602

Date: 6/15/87
Project No: 87400
ETR No: 10372
Sample(s) Received On: 5/8/87
Page 2 of 2

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 70262* | | | | | | | |
|---------------------------------|--------|--|--|--|--|--|--|--|
| Following Results are in mg/kg* | | | | | | | | |
| Arsenic | 0.024 | | | | | | | |
| Barium | 0.34 | | | | | | | |
| Cadmium | <0.005 | | | | | | | |
| Chromium | <0.02 | | | | | | | |
| Lead | 1.69 | | | | | | | |
| Mercury | <0.05 | | | | | | | |
| Selenium | <0.005 | | | | | | | |
| Silver | <0.02 | | | | | | | |

Lab No.

Sample Description

70262. Sludge, labeled LL-2, 5/8/87 at 1410 hours.

* Analysis was performed on filtered portion of the sample.

Submitted By:

Rickerson McPhee

Aquatec Inc.



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 302-658-1074

ANALYTICAL REPORT

Date: 12 June 1987

Aquatec Lab No.: 70260

ETR No.: 10372

Sample Received On: 8 May 1987

Sample Identification: Wyman's Meter and Tank, sludge sample received from
The Johnson Company, labeled LL-1, 5/8/87 at 1400
hours

Volatile Organic Compounds in mg/l

| | | | |
|---------------------------|--------|-----------------------|--------|
| benzene | 350 J | methylene chloride | LCB |
| carbon tetrachloride | 500 U | chloromethane | 1000 U |
| chlorobenzene | 500 U | bromomethane | 1000 U |
| 1,2-dichloroethane | 500 U | bromoform | 500 U |
| 1,1,1-trichloroethane | 500 U | brnomodichloromethane | 500 U |
| 1,1-dichloroethane | 500 U | dibromochloromethane | 500 U |
| 1,1,2-trichloroethane | 500 U | tetrachloroethene | 500 U |
| 1,1,2,2-tetrachloroethane | 500 U | toluene | 4100 |
| chloroethane | 1000 U | trichloroethene | 210 J |
| 2-chloroethyl vinyl ether | 1000 U | vinyl chloride | 1000 U |
| chloroform | 500 U | acetone | 1000 U |
| 1,1-dichloroethene | 500 U | 2-butanone | 1000 U |
| 1,2-dichloroethene | 500 U | carbon disulfide | 500 U |
| 1,2-dichloropropane | 500 U | 2-hexanone | 1000 U |
| trans-1,3-dichloropropene | 500 U | 4-methyl-2-pentanone | 1000 U |
| cis-1,3-dichloropropene | 500 U | styrene | 500 U |
| ethylbenzene | 1800 | vinyl acetate | 1000 U |
| | | total xylenes | 11,000 |

Note: Sample was diluted 100,000 fold for analysis and results are reported in mg/l (ppm).

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802-675-1074

ANALYTICAL REPORT

Date: 12 June 1987

Aquatec Lab No.: 70261

ETR No.: 10372

Sample Received On: 8 May 1987

Sample Identification: Wyman's Meter and Tank, sludge sample received from
The Johnson Company, labeled LS-1, 5/8/87 at 1405
hours

Volatile Organic Compounds in mg/l

| | | | |
|---------------------------|--------|----------------------|--------|
| benzene | 500 U | methylene chloride | LCB |
| carbon tetrachloride | 500 U | chloromethane | 1000 U |
| chlorobenzene | 500 U | bromomethane | 1000 U |
| 1,2-dichloroethane | 500 U | bromoform | 500 U |
| 1,1,1-trichloroethane | 240 J | bromodichloromethane | 500 U |
| 1,1-dichloroethane | 500 U | dibromochloromethane | 500 U |
| 1,1,2-trichloroethane | 500 U | tetrachloroethene | 500 U |
| 1,1,2,2-tetrachloroethane | 500 U | toluene | 3800 |
| chloroethane | 1000 U | trichloroethene | 150 J |
| 2-chloroethyl vinyl ether | 1000 U | vinyl chloride | 1000 U |
| chloroform | 500 U | acetone | 1000 U |
| 1,1-dichloroethene | 500 U | 2-butanone | 1000 U |
| 1,2-dichloroethene | 500 U | carbon disulfide | 500 U |
| 1,2-dichloropropane | 500 U | 2-hexanone | 1000 U |
| trans-1,3-dichloropropene | 500 U | 4-methyl-2-pentanone | 1000 U |
| cis-1,3-dichloropropene | 500 U | styrene | 500 U |
| ethylbenzene | 1800 | vinyl acetate | 1000 U |
| | | total xylenes | 10,000 |

Note: Sample was diluted 100,000 fold for analysis and results are reported in mg/l (ppm).

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

RECEIVED JUN 2 1987

ANALYTICAL REPORT

The Johnson Company
5 State Street
Montpelier, VT 05602

Date: 5/29/87
Project No: 87400
ETR No: 10360
Sample(s) Received On: 5/8/87
Page 1 of 1

Attn: Chris Stone

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 70238 | 70239 | | | | | | |
|---|-------|-------|--|--|--|--|--|--|
| Metals in EP Toxicity Extract | | | | | | | | |
| Arsenic | <1 | <1 | | | | | | |
| Barium | <5 | <5 | | | | | | |
| Cadmium | <0.25 | <0.25 | | | | | | |
| Chromium | <1 | <1 | | | | | | |
| Lead | <1 | <1 | | | | | | |
| Mercury | <0.04 | <0.04 | | | | | | |
| Selenium | <1 | <1 | | | | | | |
| Silver | <1 | <1 | | | | | | |
| P.O. No. 1095, Client Code: 1-2306-2 43 | | | | | | | | |

Lab No.

Sample Description

70238. Sludge sample labeled tank-IM, 4/24/87 at 1540 hours.

70239. Sludge sample labeled tank-SM, 5/7/87 at 0905 hours.

Submitted By:

R. Mason Miller

Aquatec Inc.



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 812-655-1874

ANALYTICAL REPORT

Date: 5 May 1987

Aquatec Lab No.: 69876

EIR No.: 10244

Sample Received On: 24 April 1987

Sample Identification: The Johnson Company, sludge lagoon sample labeled
W19, 4/24/87

Volatile Organic Compounds in ug/kg wet

| | | | | |
|---------------------------|---------|----------------------|-----------|---|
| benzene | 98,000 | methylene chloride | 50000 | U |
| carbon tetrachloride | 50000 | chloromethane | 100000 | U |
| chlorobenzene | 50000 | bromomethane | 100000 | U |
| 1,2-dichloroethane | 50000 | bromoform | 50000 | U |
| 1,1,1-trichloroethane | 7300 | bromodichloromethane | 50000 | U |
| 1,1-dichloroethane | 50000 | dibromochloromethane | 50000 | U |
| 1,1,2-trichloroethane | 50000 | tetrachloroethane | 50000 | U |
| 1,1,2,2-tetrachloroethane | 50000 | toluene | 290,000 | C |
| chloroethane | 100000 | trichloroethene | 8300 | |
| 2-chloroethyl vinyl ether | 100000 | vinyl chloride | 100000 | U |
| chloroform | 50000 | acetone | 100000 | U |
| 1,1-dichloroethene | 50000 | 2-butanone | 100000 | U |
| 1,2-dichloroethene | 50000 | carbon disulfide | 50000 | U |
| 1,2-dichloropropane | 50000 | 2-hexanone | 100000 | U |
| trans-1,3-dichloropropene | 50000 | 4-methyl-2-pentanone | 100000 | U |
| cis-1,3-dichloropropene | 50000 | styrene | 50000 | U |
| ethylbenzene | 330,000 | vinyl acetate | 100000 | U |
| | | total xylenes | 1,400,000 | C |

Sample was diluted 10,000 fold for analysis (200 fold for quantification of 1,1,1-trichloroethane and trichloroethene.

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

- | | |
|---|--|
| U - The compound was analyzed for but not detected. The number is the detection limit for the compound. | J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound. |
| LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible. | C - The result has been corrected for the presence of the compound in the blank. |

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658 1074

ANALYTICAL REPORT

Date: 5 May 1987

Aquatec Lab No.: 69875

ETR No.: 10244

Sample Received On: 24 April 1987

Sample Identification: The Johnson Company, pond sludge sample labeled
W18, 4/24/87

Volatile Organic Compounds in ug/kg

| | | | | |
|---------------------------|-----|----------------------|------|---|
| benzene | 490 | methylene chloride | 250 | U |
| carbon tetrachloride | 250 | chloromethane | 500 | U |
| chlorobenzene | 250 | bromomethane | 500 | U |
| 1,2-dichloroethane | 250 | bromoform | 250 | U |
| 1,1,1-trichloroethane | 110 | bromodichloromethane | 250 | U |
| 1,1-dichloroethane | 250 | dibromochloromethane | 250 | U |
| 1,1,2-trichloroethane | 250 | tetrachloroethene | 250 | U |
| 1,1,2,2-tetrachloroethane | 250 | toluene | 2500 | |
| chloroethane | 500 | trichloroethene | 150 | J |
| 2-chloroethyl vinyl ether | 500 | vinyl chloride | 500 | U |
| chloroform | 250 | acetone | 500 | U |
| 1,1-dichloroethene | 250 | 2-butanone | 500 | U |
| 1,2-dichloroethene | 250 | carbon disulfide | 250 | U |
| 1,2-dichloropropane | 250 | 2-hexanone | 500 | U |
| trans-1,3-dichloropropene | 250 | 4-methyl-2-pentanone | 500 | U |
| cis-1,3-dichloropropene | 250 | styrene | 250 | U |
| ethylbenzene | 820 | vinyl acetate | 500 | U |
| | | total xylenes | 630 | |

Sample was diluted 50 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

The Johnson Company
5 State Street
Montpelier, VT 05602

Attn: Chris Stone

Date: 5/11/87
Project No: 87400
ETR No: 10244
Sample(s) Received On: 4/24/87
Page 2 of 2

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 69874 | | | | | | | |
|---|-------|--|--|--|--|--|--|--|
| Trichloroethene by headspace analysis (µg/Kg) | <1 | | | | | | | |
| Note: P.O. #1090, Client Code: 12306-2/43 | | | | | | | | |

Lab No.

Sample Description

69874. Soil sample labeled W17, 4/23/87.

Submitted By:

R. Mason

Aquatec Inc.



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 655-1074

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ANALYTICAL REPORT

The Johnson Company
5 State Street
Montpelier, VT 05602

Attn: Chris Stone

Date: 5/11/87
Project No: 87400
ETR No: 10244
Sample(s) Received On: 4/24/87
Page 1 of 2

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 69866 | 69867 | 69868 | 69869 | 69870 | 69871 | 69872 | 69873 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| Lead (mg/Kg) | 340 | | | | | | | |
| Trichloroethene by headspace analysis (µg/Kg) | | <1 | <1 | <1 | 24 | <1 | <1 | <1 |

Note: P.O. #1090, Client Code: 12306-2/43

| Lab No. | Sample Description |
|---------|--|
| 69866. | Sludge sample labeled lagoon, 4/24/87. |
| 69867. | Soil sample labeled W6, 4/20/87. |
| 69868. | Soil sample labeled W9, 4/20/87. |
| 69869. | Soil sample labeled W10, 4/20/87. |
| 69870. | Soil sample labeled W11, 4/20/87. |
| 69871. | Soil sample labeled W12. |
| 69872. | Soil sample labeled W14, 4/21/87. |
| 69873. | Soil sample labeled W16, 4/21/87. |

Submitted By: *R. Burton McAfee* Aquatec Inc.

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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 12 August 1987
Aquatec Lab No.: 73154
ETR No.: 11108
Sample Received On: 30 July 1987
Sample Identification: Wyman's Meter and Tank Equipment Co.,
sludge collected on 7/27/87 at 1630
hours, sample #TS-727

Volatile Compounds not on the Hazardous Substances List

| <u>Scan No.*</u> | <u>Name</u> | <u>Estimated Conc.** (ug/l)</u> |
|------------------|--|-------------------------------------|
| 55 | ethyl alcohol | 4100 |
| 183 | 2-methylbutane | 7400 |
| 217 | pentane | 5200 |
| 228 | a hexene | 2300 |
| 269 | 2,3-dimethylbutane | 3200 |
| 285 | 3-methylpentane | 7500 |
| 324 | hexane | 4400 |
| 357 | 2,3-dimethylpentane | 3700 |
| 381 | 3-methylhexane | 7200 |
| 391 | 2-methylhexane | 6100 |
| 404 | a dimethylheptane | 18,000 |
| 455 | a C ₉ H ₂₀ hydrocarbon | 2900 |
| 561 | propylbenzene | 5800 |
| 602 | a trimethylbenzene | 22,000 |
| 618 | an ethyl-methylbenzene | 12,000 |

* Indicates relative location of chromatographic peak in a total of 650 scans in the chromatogram, at three seconds per scan.

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



ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403

TEL. 802-636-1074

ANALYTICAL REPORT

Date: 3 September 1987

Aquatec Lab No.: 73893

ETR No.: 11292

Sample Received On: 14 August 1987

Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., sludge sample labeled Swamp-DG, collected 8/13/87 at 0930 hours

Volatile Organic Compounds in ug/kg as received

| | | | |
|---------------------------|--------|----------------------|--------|
| benzene | 500 U | methylene chloride | LCB |
| carbon tetrachloride | 500 U | chloromethane | 1000 U |
| chlorobenzene | 500 U | bromomethane | 1000 U |
| 1,2-dichloroethane | 500 U | bromofom | 500 U |
| 1,1,1-trichloroethane | 500 U | bromochloromethane | 500 U |
| 1,1-dichloroethane | 500 U | dibromochloromethane | 500 U |
| 1,1,2-trichloroethane | 500 U | tetrachloroethene | 500 U |
| 1,1,2,2-tetrachloroethane | 500 U | toluene | 500 U |
| chloroethane | 1000 U | trichloroethene | 500 U |
| 2-chloroethyl vinyl ether | 1000 U | vinyl chloride | 1000 U |
| chlorofom | 500 U | acetone | LCB |
| 1,1-dichloroethene | 500 U | 2-butanone | LCB |
| 1,2-dichloroethene | 500 U | carbon disulfide | 500 U |
| 1,2-dichloropropane | 500 U | 2-hexanone | 1000 U |
| trans-1,3-dichloropropene | 500 U | 4-methyl-2-pentanone | 1000 U |
| cis-1,3-dichloropropene | 500 U | styrene | 500 U |
| ethylbenzene | 300 J | vinyl acetate | 1000 U |
| methylcyclohexane | 500 U | total xylenes | 3800 |

Sample was diluted 100 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802.658-1074

ANALYTICAL REPORT

Date: 3 September 1987

Aquatec Lab No.: 73892

EPR No.: 11292

Sample Received On: 14 August 1987

Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., sludge sample labeled Swamp-UG, collected 8/13/87 at 0945 hours

Volatile Organic Compounds in ug/kg as received

| | | | | |
|---------------------------|---------|--|----------------------|---------|
| benzene | 2100 J | | methylene chloride | LCB |
| carbon tetrachloride | 8000 U | | chloromethane | 16000 U |
| chlorobenzene | 8000 U | | bromomethane | 16000 U |
| 1,2-dichloroethane | 8000 U | | bromoform | 8000 U |
| 1,1,1-trichloroethane | 8000 U | | bromodichloromethane | 8000 U |
| 1,1-dichloroethane | 8000 U | | dibromochloromethane | 8000 U |
| 1,1,2-trichloroethane | 8000 U | | tetrachloroethene | 8000 U |
| 1,1,2,2-tetrachloroethane | 8000 U | | toluene | 2100 J |
| chloroethane | 16000 U | | trichloroethene | 8000 U |
| 2-chloroethyl vinyl ether | 16000 U | | vinyl chloride | 16000 U |
| chloroform | 8000 U | | acetone | LCB |
| 1,1-dichloroethene | 8000 U | | 2-butanone | LCB |
| 1,2-dichloroethene | 8000 U | | carbon disulfide | 8000 U |
| 1,2-dichloropropane | 8000 U | | 2-hexanone | 16000 U |
| trans-1,3-dichloropropene | 8000 U | | 4-methyl-2-pentanone | 16000 U |
| cis-1,3-dichloropropene | 8000 U | | styrene | 8000 U |
| ethylbenzene | 26,000 | | vinyl acetate | 16000 U |
| methylcyclohexane | 17,000 | | total xylenes | 250,000 |

Sample was diluted 1600 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 3 September 1987

Aquatec Lab No.: 73891

ETR No.: 11292

Sample Received On: 14 August 1987

Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., sludge
sample labeled SLC #5, collected 8/7/87 at 1620 hours

Volatile Organic Compounds in ug/kg as received

| | | | |
|---------------------------|--------|----------------------|--------|
| benzene | 3000 U | methylene chloride | LCB |
| carbon tetrachloride | 3000 U | chloromethane | 6000 U |
| chlorobenzene | 3000 U | bromomethane | 6000 U |
| 1,2-dichloroethane | 3000 U | bromofom | 3000 U |
| 1,1,1-trichloroethane | 3000 U | bromodichloromethane | 3000 U |
| 1,1-dichloroethane | 3000 U | dibromochloromethane | 3000 U |
| 1,1,2-trichloroethane | 3000 U | tetrachloroethene | 3000 U |
| 1,1,2,2-tetrachloroethane | 3000 U | toluene | 1700 J |
| chloroethane | 6000 U | trichloroethene | 3000 U |
| 2-chloroethyl vinyl ether | 6000 U | vinyl chloride | 6000 U |
| chloroform | 3000 U | acetone | LCB |
| 1,1-dichloroethene | 3000 U | 2-butanone | LCB |
| 1,2-dichloroethene | 3000 U | carbon disulfide | 3000 U |
| 1,2-dichloropropane | 3000 U | 2-hexanone | 6000 U |
| trans-1,3-dichloropropene | 3000 U | 4-methyl-2-pentanone | 6000 U |
| cis-1,3-dichloropropene | 3000 U | styrene | 3000 U |
| ethylbenzene | 2900 J | vinyl acetate | 6000 U |
| methylcyclohexane | 1900 J | total xylenes | 37,000 |

Sample was diluted 600 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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75 Green Mountain Drive, So. Burlington, VT 05403
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ANALYTICAL REPORT

Date: 3 September 1987

Aquatec Lab No.: 73890

ETR No.: 11292

Sample Received On: 14 August 1987

Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., sludge
sample labeled SIC #4, collected 8/7/87 at 1615 hours

Volatile Organic Compounds in ug/kg as received

| | | | |
|---------------------------|--------|----------------------|--------|
| benzene | 3000 U | methylene chloride | LCB |
| carbon tetrachloride | 3000 U | chloromethane | 6000 U |
| chlorobenzene | 3000 U | bromomethane | 6000 U |
| 1,2-dichloroethane | 3000 U | bromofom | 3000 U |
| 1,1,1-trichloroethane | 3000 U | bromodichloromethane | 3000 U |
| 1,1-dichloroethane | 3000 U | dibromochloromethane | 3000 U |
| 1,1,2-trichloroethane | 3000 U | tetrachloroethene | 3000 U |
| 1,1,2,2-tetrachloroethane | 3000 U | toluene | 1100 J |
| chloroethane | 6000 U | trichloroethene | 3000 U |
| 2-chloroethyl vinyl ether | 6000 U | vinyl chloride | 6000 U |
| chloroform | 3000 U | acetone | LCB |
| 1,1-dichloroethene | 3000 U | 2-butanone | LCB |
| 1,2-dichloroethene | 3000 U | carbon disulfide | 3000 U |
| 1,2-dichloropropane | 3000 U | 2-hexanone | 6000 U |
| trans-1,3-dichloropropene | 3000 U | 4-methyl-2-pentanone | 6000 U |
| cis-1,3-dichloropropene | 3000 U | styrene | 3000 U |
| ethylbenzene | 3800 | vinyl acetate | 6000 U |
| methylcyclohexane | 2700 J | total xylenes | 41,000 |

Sample was diluted 600 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 3 September 1987
Aquatec Lab No.: 73889
ETR No.: 11292
Sample Received On: 14 August 1987
Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., sludge
sample labeled SLC #3, collected 8/7/87 at 1600 hours

Volatile Organic Compounds in ug/kg as received

| | | | |
|---------------------------|--------|----------------------|--------|
| benzene | 1000 J | methylene chloride | LCB |
| carbon tetrachloride | 3000 U | chloromethane | 6000 U |
| chlorobenzene | 3000 U | bromomethane | 6000 U |
| 1,2-dichloroethane | 3000 U | bromoform | 3000 U |
| 1,1,1-trichloroethane | 3000 U | bromodichloromethane | 3000 U |
| 1,1-dichloroethane | 3000 U | dibromochloromethane | 3000 U |
| 1,1,2-trichloroethane | 3000 U | tetrachloroethene | 3000 U |
| 1,1,2,2-tetrachloroethane | 3000 U | toluene | 3000 |
| chloroethane | 6000 U | trichloroethene | 3000 U |
| 2-chloroethyl vinyl ether | 6000 U | vinyl chloride | 6000 U |
| chloroform | 3000 U | acetone | LCB |
| 1,1-dichloroethene | 3000 U | 2-butanone | LCB |
| 1,2-dichloroethene | 3000 U | carbon disulfide | 3000 U |
| 1,2-dichloropropane | 3000 U | 2-hexanone | 6000 U |
| trans-1,3-dichloropropene | 3000 U | 4-methyl-2-pentanone | 6000 U |
| cis-1,3-dichloropropene | 3000 U | styrene | 3000 U |
| ethylbenzene | 10,000 | vinyl acetate | 6000 U |
| methylcyclohexane | 5100 | total xylenes | 81,000 |

Sample was diluted 600 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802-658-1074

ANALYTICAL REPORT

Date: 3 September 1987
Aquatec Lab No.: 73888
ETR No.: 11292
Sample Received On: 14 August 1987
Sample Identification: Wyman's Meter & Tank Equipment Co., Inc., sludge
sample labeled SLC #2, collected 8/7/87 at 1545 hours

Volatile Organic Compounds in ug/kg as received

| | | | |
|---------------------------|--------|----------------------|--------|
| benzene | 980 J | methylene chloride | LCB |
| carbon tetrachloride | 650 J | chloromethane | 6000 U |
| chlorobenzene | 3000 U | bromomethane | 6000 U |
| 1,2-dichloroethane | 3000 U | bromoform | 3000 U |
| 1,1,1-trichloroethane | 3000 U | bromodichloromethane | 3000 U |
| 1,1-dichloroethane | 3000 U | dibromochloromethane | 3000 U |
| 1,1,2-trichloroethane | 3000 U | tetrachloroethene | 3000 U |
| 1,1,2,2-tetrachloroethane | 3000 U | toluene | 7000 |
| chloroethane | 6000 U | trichloroethene | 3000 U |
| 2-chloroethyl vinyl ether | 6000 U | vinyl chloride | 6000 U |
| chloroform | 3000 U | acetone | LCB |
| 1,1-dichloroethene | 3000 U | 2-butanone | LCB |
| 1,2-dichloroethene | 3000 U | carbon disulfide | 3000 U |
| 1,2-dichloropropane | 3000 U | 2-hexanone | 6000 U |
| trans-1,3-dichloropropene | 3000 U | 4-methyl-2-pentanone | 6000 U |
| cis-1,3-dichloropropene | 3000 U | styrene | 3000 U |
| ethylbenzene | 10,000 | vinyl acetate | 6000 U |
| methylcyclohexane | 6600 | total xylenes | 96,000 |

Sample was diluted 600 fold for analysis.

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- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



Industrial & Environmental Analysts, Inc.
P.O. Box 626 • Essex Junction, Vermont 05452 • 802-878-5138

ANALYSIS REPORT

Customer: Johnson Co., Inc.
Address: 5 State St.
City, State, Zip: Montpelier, VT 05602
Attention: Seth Pitkin

Date: 18 Sep 1987
Date Samples Received: 11 Sep 1987
Date Samples Collected: 10 Sep 1987
Samples Collected By: Seth Pitkin

SOIL ANALYSIS

Ryman's Meter and Tank Equipment, Inc.

| | <u>Total Lead (mg/kg dry wt.)</u> |
|-----------|-----------------------------------|
| Soil Com | 35.1 |
| Sldg. Com | 635. |

Signature *Catherine W. Cutting*

Reference: 28629; 1414, 1415

Offices and laboratories located in: Essex Junction, Vermont
Research Triangle Park, North Carolina

RECEIVED SEP 29 1987



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802/658-1074

ANALYTICAL REPORT

Wyman's Meter & Tank
P.O. Box 541
Montpelier, VT 05602

Attn: Dave Partridge

Date: 9/25/87
Project No: 87400
ETR No: 11655
Sample(s) Received On: 9/21/87
Page 1 of 1

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 75339 | 75340 | 75341 | 75342 | 75343 | | | |
|--------------------------------|-------|-------|-------|-------|-------|--|--|--|
| Total Lead (mg/Kg as received) | 200 | 380 | 270 | 124 | 92 | | | |

| Lab No. | Sample Description |
|---------|---|
| 75339. | Soil sample labeled SLDG-R-1, collected 9/21/87 at 1020 hours from Wyman's. |
| 75340. | Soil sample labeled SLDG-R-2, collected 9/21/87 at 1035 hours from Wyman's. |
| 75341. | Soil sample labeled SLDG-R-3, collected 9/21/87 at 1030 hours from Wyman's. |
| 75342. | Soil sample labeled SLDG-R-4, collected 9/21/87 at 1015 hours from Wyman's. |
| 75343. | Soil sample labeled SLDG-R-5, collected 9/21/87 at 1000 hours from Wyman's. |

Submitted By:

Aquatec Inc.



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL: 802 658-1074

ANALYTICAL REPORT

Wyman's Meter & Tank Equipment Co.,
Inc.
P.O. Box 541
Montpelier, VT 05602
Attn: Dave Partridge

Date: 10/7/87
Project No: 87400
ETR No: 11373
Sample(s) Received On: 8/24/87
Page 1 of 1

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater. All results are in mg/l unless otherwise noted.

| Parameter | 74440 | 74441 | 74442 | 74443 | 74444 | 74445 | | |
|---------------------------------|-------|-------|-------|-------|-------|-------|--|--|
| Ignitability by Flashpoint (°F) | >145 | | >145 | | | | | |
| Oil & Grease | | | | | 5700 | 1630 | | |
| <u>PCB's</u> | | | | | | | | |
| Aroclor 1260 (µg/Kg) | | 140 | | 68 | | | | |

Lab No.

Sample Description

- 74440. Sludge labeled sep-flash.
- 74441. Sludge labeled sep-PCB.
- 74442. Sludge labeled sludge-flash.
- 74443. Sludge labeled sludge-PCB.
- 74444. Soil labeled SF1-O&G.
- 74445. Soil labeled SF2-O&G.

Submitted By:

R. Mason McNeel

Aquatec Inc.



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 9 September 1987

Aquatec Lab No.: 74446

ETR No.: 11373

Sample Received On: 24 August 1987

Sample Identification: Wyman's Meter and Tank Equipment Co., soil sample labeled SP-1.

Volatile Organic Compounds in ug/Kg as received

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

Note: The sample contains aliphatic hydrocarbons.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 9 September 1987
 Aquatec Lab No.: 74447
 EIR No.: 11373
 Sample Received On: 24 August 1987
 Sample Identification: Wyman's Meter and Tank Equipment, Co., soil sample labeled SP-2

Volatile Organic Compounds in ug/Kg as received

| | | | |
|---------------------------|------|----------------------|------|
| benzene | 5 U | methylene chloride | LCB |
| carbon tetrachloride | 5 U | chloromethane | 10 U |
| chlorobenzene | 5 U | bromomethane | 10 U |
| 1,2-dichloroethane | 5 U | bromofoma | 5 U |
| 1,1,1-trichloroethane | 5 U | bromodichloromethane | 5 U |
| 1,1-dichloroethane | 5 U | dibromochloromethane | 5 U |
| 1,1,2-trichloroethane | 5 U | tetrachloroethene | 5 U |
| 1,1,2,2-tetrachloroethane | 5 U | toluene | 5 U |
| chloroethane | 10 U | trichloroethene | 5 U |
| 2-chloroethyl vinyl ether | 10 U | vinyl chloride | 10 U |
| chlorofom | 5 U | acetone | LCB |
| 1,1-dichloroethene | 5 U | 2-butanone | LCB |
| 1,2-dichloroethene | 5 U | carbon disulfide | 5 U |
| 1,2-dichloropropane | 5 U | 2-hexanone | 10 U |
| trans-1,3-dichloropropene | 5 U | 4-methyl-2-pentanone | 10 U |
| cis-1,3-dichloropropene | 5 U | styrene | 5 U |
| ethylbenzene | 5 U | vinyl acetate | 10 U |
| methylcyclohexane | 45 | total xylenes | 5 U |

Note: The sample contains other aliphatic hydrocarbons.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 654-1074

ANALYTICAL REPORT

Date: 9 September 1987
Aquatec Lab No.: 74448
ETR No.: 11373
Sample Received On: 24 August 1987
Sample Identification: Wyman's Meter and Tank Equipment Co., soil sample labeled SP-3.

Volatile Organic Compounds in ug/Kg as received

| | | | |
|---------------------------|------|----------------------|------|
| benzene | 5 U | methylene chloride | LCB |
| carbon tetrachloride | 5 U | chloromethane | 10 U |
| chlorobenzene | 5 U | bromomethane | 10 U |
| 1,2-dichloroethane | 5 U | bromoform | 5 U |
| 1,1,1-trichloroethane | 5 U | bromodichloromethane | 5 U |
| 1,1-dichloroethane | 5 U | dibromochloromethane | 5 U |
| 1,1,2-trichloroethane | 5 U | tetrachloroethene | 5 U |
| 1,1,2,2-tetrachloroethane | 5 U | toluene | 5 U |
| chloroethane | 10 U | trichloroethene | 5 U |
| 2-chloroethyl vinyl ether | 10 U | vinyl chloride | 10 U |
| chloroform | 5 U | acetone | 350C |
| 1,1-dichloroethene | 5 U | 2-butanone | 10 U |
| 1,2-dichloroethene | 5 U | carbon disulfide | 5 U |
| 1,2-dichloropropane | 5 U | 2-hexanone | 10 U |
| trans-1,3-dichloropropene | 5 U | 4-methyl-2-pentanone | 10 U |
| cis-1,3-dichloropropene | 5 U | styrene | 5 U |
| ethylbenzene | 5 U | vinyl acetate | 10 U |
| | | total xylenes | 73 |

Note: The sample contains aliphatic hydrocarbons.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 9 September 1987
Aquatec Lab No.: 74448A
ETR No.: 11373
Sample Received On: 24 August 1987
Sample Identification: Wyman's Meter and Tank Equipment Co., soil sample labeled SP-4.

Volatile Organic Compounds in ug/Kg as received

| | | | |
|---------------------------|------|----------------------|------|
| benzene | 5 U | methylene chloride | LCB |
| carbon tetrachloride | 5 U | chloromethane | 10 U |
| chlorobenzene | 5 U | bromomethane | 10 U |
| 1,2-dichloroethane | 5 U | bromoform | 5 U |
| 1,1,1-trichloroethane | 5 U | bromodichloromethane | 5 U |
| 1,1-dichloroethane | 5 U | dibromochloromethane | 5 U |
| 1,1,2-trichloroethane | 5 U | tetrachloroethene | 5 U |
| 1,1,2,2-tetrachloroethane | 5 U | toluene | 5 U |
| chloroethane | 10 U | trichloroethene | 5 U |
| 2-chloroethyl vinyl ether | 10 U | vinyl chloride | 10 U |
| chloroform | 5 U | acetone | LCB |
| 1,1-dichloroethene | 5 U | 2-butanone | LCB |
| 1,2-dichloroethene | 5 U | carbon disulfide | 5 U |
| 1,2-dichloropropane | 5 U | 2-hexanone | 10 U |
| trans-1,3-dichloropropene | 5 U | 4-methyl-2-pentanone | 10 U |
| cis-1,3-dichloropropene | 5 U | styrene | 5 U |
| ethylbenzene | 5 U | vinyl acetate | 10 U |
| methylcyclohexane | 36 | total xylenes | 200 |

Note: The sample contains other aliphatic hydrocarbons.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 9 September 1987

Aquatec Lab No.: 74449

ETR No.: 11373

Sample Received On: 24 August 1987

Sample Identification: Wyman's Meter and Tank Equipment Co., sludge sample labeled Dumpster/Tank.

Volatile Organic Compounds in ug/Kg as received

| | | | | |
|---------------------------|--------|---|----------------------|---------|
| benzene | 8800 | | methylene chloride | LCB |
| carbon tetrachloride | 7500 | U | chloromethane | 15000 U |
| chlorobenzene | 7500 | U | bromomethane | 15000 U |
| 1,2-dichloroethane | 7500 | U | bromoform | 7500 U |
| 1,1,1-trichloroethane | 7500 | U | bromodichloromethane | 7500 U |
| 1,1-dichloroethane | 7500 | U | dibromochloromethane | 7500 U |
| 1,1,2-trichloroethane | 7500 | U | tetrachloroethene | 7500 U |
| 1,1,2,2-tetrachloroethane | 7500 | U | toluene | 89,000 |
| chloroethane | 15000 | U | trichloroethene | 7500 U |
| 2-chloroethyl vinyl ether | 15000 | U | vinyl chloride | 15000 U |
| chloroform | 7500 | U | acetone | LCB |
| 1,1-dichloroethene | 7500 | U | 2-butanone | 15000 U |
| 1,2-dichloroethene | 1900J | | carbon disulfide | 7500 U |
| 1,2-dichloropropane | 7500 | U | 2-hexanone | 15000 U |
| trans-1,3-dichloropropene | 7500 | U | 4-methyl-2-pentanone | 15000 U |
| cis-1,3-dichloropropene | 7500 | U | styrene | 7500 U |
| ethylbenzene | 64,000 | | vinyl acetate | 15000 U |
| cyclopentane | 3400J | | total xylenes | 580,000 |
| methylcyclohexane | 40,000 | | o-dichlorobenzene | 8,900 |

Sample was diluted 1500 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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



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ENVIRONMENTAL SERVICES

75 Green Mountain Drive, So. Burlington, VT 05403
TEL. 802 658-1074

ANALYTICAL REPORT

Date: 9 September 1987

Aquatec Lab No.: 74450

ETR No.: 11373

Sample Received On: 24 August 1987

Sample Identification: Wyman's Meter and Tank Equipment Co., sludge sample labeled Sep-com.

Volatile Organic Compounds in ug/Kg as received

| | | | |
|---------------------------|---------|----------------------|---------|
| benzene | 1700J | methylene chloride | LCB |
| carbon tetrachloride | 6500 U | chloromethane | 13000 U |
| chlorobenzene | 6500 U | bromomethane | 13000 U |
| 1,2-dichloroethane | 6500 U | bromoform | 6500 U |
| 1,1,1-trichloroethane | 6500 U | bromodichloromethane | 6500 U |
| 1,1-dichloroethane | 6500 U | dibromochloromethane | 6500 U |
| 1,1,2-trichloroethane | 6500 U | tetrachloroethene | 6500 U |
| 1,1,2,2-tetrachloroethane | 6500 U | toluene | 8100 |
| chloroethane | 13000 U | trichloroethene | 6500 U |
| 2-chloroethyl vinyl ether | 13000 U | vinyl chloride | 13000 U |
| chloroform | 6500 U | acetone | LCB |
| 1,1-dichloroethene | 6500 U | 2-butanone | LCB |
| 1,2-dichloroethene | 6500 U | carbon disulfide | 6500 U |
| 1,2-dichloropropane | 6500 U | 2-hexanone | 13000 U |
| trans-1,3-dichloropropene | 6500 U | 4-methyl-2-pentanone | 13000 U |
| cis-1,3-dichloropropene | 6500 U | styrene | 6500 U |
| ethylbenzene | 24,000 | vinyl acetate | 13000 U |
| methylcyclohexane | 7200 | total xylenes | 240,000 |
| | | o-dichlorobenzene | 5000J |

Sample was diluted 1300 fold for analysis.

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

- U - The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB - Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J - An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C - The result has been corrected for the presence of the compound in the blank.

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

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 5 State Street
 Montpelier, Vermont 05602

Well Number MW-1 Drilling Log

| | | | |
|-------------------|-------------------|-------------------------|-----------------|
| Project | Wyman's | Location | Berlin, Vermont |
| Date Drilled | 5/11/87 | Total Depth of Hole | 45' |
| Surface Elevation | --- | Water Level, Initial | 9' |
| Screen: Diameter | 2" | Length | 10' |
| Casing: Diameter | 2" | Length | 35' |
| Drilling | Hollow Stem Auger | Top of Casing Elevation | --- |
| Driller | Adams Engineering | Log By | Seth Pitkin |
| | | Total Pipe | 45' |
| | | Stick Up | 1.5 |
| | | Slot Size | .020 |
| | | Type | PVC |

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-----------|-------------|--|
| 1 | [stippled] | MW1-A | 0 | 5'-7' 1' Pebbly, Silty Fine Sand. Wet 1' Fine sand with trace of silt. Wet Saturated. |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | [stippled] | Bentonite | 0 | 9.8'-11.8' Gray-brown clean medium sand, grading to brown medium sand. |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
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| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | [stippled] | screen | 0 | 20'-22' Gray medium sand w/silty lenses & pebbles over brown medium sand. Saturated. |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | | | |
| 27 | | | | |
| 28 | [stippled] | B.O.W. | 0.9 | 25'-27' Brown medium sand w/silt lenses. Bottom 0.5' contains many large rounded pebbles. Saturated. |
| 29 | | | | |
| 30 | | | | |
| 31 | | | | |
| 32 | | | | |
| 33 | | | | |
| 34 | [stippled] | B.O.W. | 1.9 | 29.7'-31.7' 1.7' brn med. sand w/silt lenses. 0.3' gravelly coarse sand. |
| 35 | | | | |
| 36 | | | | |
| 37 | | | | |
| 38 | | | | |
| 39 | | | | |
| 40 | [stippled] | B.O.W. | none taken | 34.8'-36.8' 1.5' pebbly medium sand, 0.5' gravelly coarse sand w/a trace of silt. |
| 41 | | | | |
| 42 | | | | |
| 43 | [stippled] | B.O.W. | none taken | 39.6'-41.6' Gray-brown pebbly medium sand. Saturated. |
| 44 | | | | |
| 45 | [stippled] | B.O.W. | none taken | 44.8'-46.8' Gray-brown medium sand. Saturated. |
| 46 | | | | |

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Well Number MW-2

Drilling Log

Project Wyman's
 Date Drilled 5/11/87
 Surface Elevation ---
 Screen: Diameter 2"
 Casing: Diameter 2"
 Drilling Hollow Stem Auger
 Driller Adams Engineering

Location Berlin, Vermont
 Total Depth of Hole 21'
 Water Level, Initial 9'
 Length 10' (5' grouted)
 Length ---
 Top of Casing Elevation ---
 Log By Seth Pitkin

Total Pipe 25'
 Stick Up 3.5'
 Slot Size .020
 Type PVC

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-------------|-------------|--|
| 1 | | | | |
| 2 | | | | |
| 3 | | Native | | |
| 4 | | Fill | | |
| 5 | | | | |
| 6 | | Volclay | | |
| 7 | | | | 8-10' 0.2" gray silty fine sand w/few pebbles. Wet. |
| 8 | | | | 0.25' fine sandy silt. Wet. |
| 9 | | | | 1.5' silty medium sand w/pebbles and organic matter. |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | Screen | | |
| 18 | | | | |
| 19 | | | | |
| 20 | | Silica Sand | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | | | |
| 24 | | | | |
| 25 | | | | |
| 26 | | B.O.W. | | |
| 27 | | | | |
| 28 | | | | |
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Well Number MW-3

Drilling Log

| | | | |
|-------------------|-------------------|-------------------------|-----------------|
| Project | Wyman's | Location | Berlin, Vermont |
| Date Drilled | 5/12/87 | Total Depth of Hole | 25.7 |
| Surface Elevation | --- | Water Level, Initial | 9' |
| Screen: Diameter | 2" PVC | Length | 10' |
| Casing: Diameter | 2" PVC | Length | 15' |
| Drilling | Hollow Stem Auger | Top of Casing Elevation | --- |
| Driller | Adams Engineering | Log By | Seth Pitkin |
| | | Total Pipe | 25' |
| | | Stick Up | 2.0' |
| | | Slot Size | .020 |
| | | Type | PVC |

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|---------|-------------|--|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | Ben | 6.4 | 5.3'-7.3' Gray medium (compact) |
| 5 | | seal | | silt with some fine sand and |
| 6 | | | | organic matter. |
| 7 | | | | |
| 8 | | Volclay | | |
| 9 | | | | |
| 10 | | | 2.90 | 9.8'-11.8' 1' gray medium |
| 11 | | | | (compact) silt with some |
| 12 | | | | fine sand, few pebbles and |
| 13 | | | | organic matter. 1' red brown |
| 14 | | | | gravelly silty fine sand. |
| 15 | | Silica | | Saturated. |
| 16 | | sand | | |
| 17 | | | | |
| 18 | | Screen | 3.1 | 15.7'-17.7' 0.33' brown fine |
| 19 | | | | sand w/trace of silt. 0.17' |
| 20 | | | | gray loam coarse sand. |
| 21 | | | | Saturated. |
| 22 | | | | 0.5' brown loam medium sand. |
| 23 | | | | 0.33' brown silty fine sand. |
| 24 | | | | |
| 25 | | B.O.W. | | |
| 26 | | | 3.5 | 19.8'-21.8' 0.42' brown medium |
| 27 | | | | sand with some silt 0.17' gray |
| 28 | | | | brown sandy silt w/silt lense. |
| 29 | | | | 0.58 brown fine sand with |
| 30 | | | | some silt. Saturated. |
| 31 | | | | |
| 32 | | | | |
| 33 | | | 10.4 | 25.7'-27.7' Brown medium sand |
| 34 | | | | with some silt and silt lenses. |
| 35 | | | | Grading to brown silty fine sand. |
| 36 | | | | |
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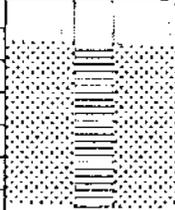
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Well Number MW-4

Drilling Log

Project Wyman's
 Date Drilled 5/12/87
 Surface Elevation ---
 Screen: Diameter 2"
 Casing: Diameter 2"
 Drilling Hollow Stem Auger
 Driller Adams Engineering

Location Berlin, Vermont
 Total Depth of Hole 6.5'
 Water Level, Initial 10'
 Length 5'
 Length 2.5'
 Top of Casing Elevation ---
 Log By Seth Pitkin
 Total Pipe 7'
 Stick Up 2.2'
 Slot Size .020
 Type PVC

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|---|----------------|-------------|--|
| 1 |  | Bentonite sand | 6.90 | 5'-7' Gray brown fine sandy silt with organic matter. |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | Screen | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | B.O.W. | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
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Well Number MW-5 Drilling Log

| | | | |
|-------------------|-------------------|-------------------------|-----------------|
| Project | Wyman's | Location | Berlin, Vermont |
| Date Drilled | 5/12/87 | Total Depth of Hole | 31' |
| Surface Elevation | --- | Water Level, Initial | 10' |
| Screen: Diameter | 2" | Length | 10' |
| Casing: Diameter | 2" | Length | 20' |
| Drilling | Hollow Stem Auger | Top of Casing Elevation | --- |
| Driller | Adams Engineering | Log By | Seth Pitkin |
| | | Total Pipe | 30' |
| | | Stick Up | 2.8' |
| | | Slot Size | .020 |
| | | Type | PVC |

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-------------|--------------|---|
| 1 | | Benseal | 0 on spoon | 0.25' brown pebbly silty fine sand. 1' gray very pebbly medium (compact) fine sandy silt. 0.33' dark brown organic rich silt with a trace of fine sand. |
| 2 | | | 6.3 in bag | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | Native | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | 0 on spoon | 0.25' brown pebbly silty fine/medium sand. 0.20' gray silt with a trace of fine sand. |
| 11 | | Volclay | 3.1 in bag. | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |
| 16 | | | | |
| 17 | | | 0 on spoon | 1' gray silt with a trace of fine sand. Saturated. 1' gray brown coarse sand with a trace of silt. Saturated. |
| 18 | | Silica sand | 1.3 in bag | |
| 19 | | | | |
| 20 | | | | |
| 21 | | | | |
| 22 | | | | |
| 23 | | B.O.W. | | |
| 24 | | | 0 on spoon | 0.67' brown medium sand with some silt. 0.08' gray silt lens. 1.25' gravelly coarse sand w/some silt. |
| 25 | | | 2.0 in bag | |
| 26 | | | | |
| 27 | | | | |
| 28 | | | | |
| 29 | | | | |
| 30 | | | | |
| 31 | | | 0 on spoon | 0.42' gravelly silty medium sand |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |
| 36 | | | 0 in spoon | Brown clean medium sand |
| 37 | | | 0.60 in bag. | 0.08' coarse sand lens |
| 38 | | | | |
| 39 | | | | |
| 40 | | | | |
| 41 | | | | |
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Well Number MW-6

Drilling Log

| | | | |
|-------------------|-------------------|-------------------------|-----------------|
| Project | Wyman's | Location | Berlin, Vermont |
| Date Drilled | 5/12/87 | Total Depth of Hole | 12.8' |
| Surface Elevation | --- | Total Pipe | 30' |
| Screen: Diameter | 2" | Stick Up | 2.8' |
| Casing: Diameter | 2" | Water Level, Initial | 10' |
| Drilling | Hollow Stem Auger | Length | 10' |
| Driller | Adams Engineering | Length | 20' |
| | | Top of Casing Elevation | --- |
| | | Log By | Seth Pitkin |
| | | Type | PVC |

| Depth (Feet) | Well Const. | Notes | PID Reading | Description/Soil Classification (Color, Texture, Structures) |
|--------------|-------------|-------------|-------------|--|
| 1 | | Benseal | | See MW-5 for Stratigraphy. |
| 2 | | Silica sand | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | Screen | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | B.O.W. | | |
| 12 | | | | |
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