

890344



**POLLUTION
ENTERPRISES, INC.**

SEP 21 1989

151 Keith Valley Road • Horsham, PA 19044 • 215-343-7705

September 19, 1989

Mr. Chuck Schwer
State of Vermont DEC
103 South Main Street
Waterbury, VT 05676

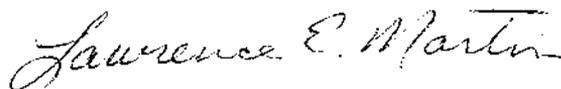
Ref: Atlantic Station # 60808
Milton, Vermont

Dear Mr. Schwer:

Enclosed for your information is a copy of the Site Assessment Report, which we submitted to Atlantic Refining and Marketing Corporation, outlining our investigation to date and our recommendations for further action.

If you have any questions, or require further information, please contact this office.

Sincerely,



Lawrence E. Martin
Staff Geologist

mj

890344



151 Keith Valley Road • Horsham, PA 19044 • 215-343-7705

SITE ASSESSMENT REPORT

ATLANTIC SERVICE STATION # 60808
MILTON, VERMONT

PREPARED FOR:

MR. JOHN MALINOWSKI
ATLANTIC REFINING AND MARKETING CORPORATION
550 SOLAR STREET
SYRACUSE, NY 13204

PREPARED BY:

POLLUTION ENTERPRISES INC.
202 ARTERIAL ROAD
SYRACUSE, NY 13206

Lawrence E. Martin

LAWRENCE E. MARTIN
STAFF GEOLOGIST

SEPTEMBER 6, 1989

TABLE OF CONTENTS

INTRODUCTION Page 1

SITE DESCRIPTION AND HISTORY Page 1

INVESTIGATIVE HISTORY & METHODOLOGY Page 3

HYDROGEOLOGICAL SETTING Page 6

TECHNICAL SUMMARY AND FINDINGS Page 7

APPENDIX I Page 10

 Site Map

 Watertable Contour Map

 Proposed New Monitor Well Locations

APPENDIX II Page 11

 Laboratory Reports

SITE ASSESSMENT REPORT - MILTON, VERMONT

INTRODUCTION

On May 18, 1989, Mr. John Malinowski, of Atlantic Refining and Marketing, contacted Pollution Enterprises Inc., (PEI), to have our geologist witness the removal of a 4,000 gallon underground gasoline storage tank, in Milton, Vermont. Atlantic was removing the tank because of inventory discrepancies and large amounts of water found in this tank whenever there was a heavy rainfall. A preliminary monitoring and investigation of this site was conducted on May 23, 1989, while the storage tank was being excavated, and free floating liquid hydrocarbons was discovered in one of the existing monitor wells. This precipitated PEI and Atlantic into conducting this site assessment.

SITE DESCRIPTION AND HISTORY

The subject facility is an Atlantic service station located on Route 7 in Milton, Vermont approximately twelve miles north of Burlington, Vermont. The site is located approximately one mile east from the edge of the ridge that leads down to the Champlain Valley. The site was once used as a storage terminal and service station. It was recently used only as a service station. This facility was shut down by Atlantic Refining and Marketing on June 6, 1989, and all storage tanks and pump islands were drained and removed. For the last three years the station has been managed by Judy Sweeny, an employee of Atlantic.

The station property, located approximately 1500 feet above mean sea level, is approximately 183 feet by 375 feet and abuts properties on which are located private residences on either side of the station and an auto body repair shop behind the station. The surrounding neighborhood is comprised of private residences and small businesses. There is one other gasoline station approximately one mile south, on Route 7.

The subject Atlantic station is currently closed down. The main building, a chain link fence around the property, and the monitoring and recovery wells remain on site. Prior to closure there were four UST's, one underground diesel tank and one above ground kerosene tank. The capacity of each tank was as follows:

- 1 - 3,000 gallon regular gasoline tank
- 1 - 10,000 gallon super unleaded tank
- 1 - 6,000 gallon unleaded tank
- 1 - 4,000 gallon unleaded tank
- 1 - 1,000 gallon diesel tank
- 1 - 500/1,000 gallon kerosene tank (Figure 2)

The four gasoline UST's were located in front, near the north corner of the building. The kerosene storage tank was located at the back north corner of the building and the diesel UST near the front southern corner of the building. These two storage tanks were both within the fenced enclosure around the south side and back of the building. (Figure 1)

During closure, the week of June 5, 1989, the UST's were pumped of all remaining liquid. The contents were placed into 55 gallon drums for storage and proper disposal. The UST's were purged of vapors, by means of an air compressor, by New England Marine Contractors. This, and the remaining work, was completed by Donovan Petroleum Equipment Company under the supervision of Mr. Butch Donovan, owner of the company. The tanks then had three foot by four foot holes cut out of each end plate and any remaining sludge was cleaned out. Each UST was then cut lengthwise in half for disposal.

Potable water for this site was supplied by its own water well. This well is located on the property just west of the station building, (figure 1). The neighboring homes and businesses are also on their own water wells and septic systems. The wells average 130 to 280 feet deep according to H. A. Young and Sons Inc., a well drilling company based in Milton, Vermont.

INVESTIGATIVE HISTORY AND METHODOLOGY

On May 23, 1989, at the request of Mr. Malinowski, a PEI geologist arrived at the location to witness the removal of a 4,000 gallon UST. Donivan Petroleum Equipment Sales, Service and Installation Company was contracted, by Atlantic, to remove the tank. Donivan had arrived and begun work by 7:30 AM that morning.

While the storage tank was being uncovered, PEI monitored the existing observation wells. There are three existing observation wells on site, (figure 1). The last observation well, (M3), was found to contain 0.31 feet of free-floating hydrocarbons, resembling diesel fuel. PEI immediately informed Mr. Malinowski, who was present at the site. Mr. Malinowski immediately notified Vermont's Department of Environmental Conservation, (VTDEC), of our findings.

By 11:00 AM, this storage tank had been completely uncovered and a vacuum truck from New England Marine Contractors arrived on site. By 11:30 AM, New England Marine had emptied the storage tank of the 600 gallons remaining in the bottom of the tank. This waste liquid was placed in 55 gallon drums, and properly labeled for future disposal.

Donivan had drained and capped all lines to this storage tank and had it completely out of the ground by 12:30 PM. PEI then requested New England Marine to vacuum 12 gallons of water and free-floating liquid hydrocarbons out of M3, which emptied the well. Fifteen minutes later, the well had rebounded from approximately 16.0 feet to 9.80 feet, with a 0.01 foot thickness of liquid hydrocarbon on the surface of the water.

PEI then proceeded to bail three well volumes out of each of the remaining two monitor wells. After the wells were turned over, a water sample was collected from each. A third water sample was taken from an inside faucet to sample the station's water well. Soil samples were then collected from three sides of the open tank pit. All samples were taken to Endyne Laboratories in Williston, Vermont, and proper chain of custody procedures were followed. The analysis results for all six samples can be found in the Appendix.

The degassing of the storage tank started at 2:30 PM and was completed by 7:30 PM that evening. Mr. John Brabant of the VTDEC arrived on site at approximately 2:45 PM. PEI explained the reason for removing the storage tank and that free-floating liquid hydrocarbon was discovered in M3. Mr. Brabant asked what plans were being made for remediation. Mr. Malinowski and PEI explained that a 26-inch to 30-inch corrugated metal pipe (CMP) would be installed near the old overhead loading rack, (figure 1). A trench would be dug from the well towards the 1,000-gallon underground storage diesel tank and another trench towards the middle of the old tank field behind the station's building. PEI also planned to install three additional monitor wells to help define the watertable gradient and to define the southern limits of the liquid hydrocarbon plume. A filter scavenger would be installed in the 26-inch CMP to initiate a passive recovery system, while waiting for permits to install a watertable depression pump in the same well. Mr. Brabant explained that the DEC would like to see a written work proposal for a remediation system and a watertable contour map. He gave permission to install the CMP recovery well and filter scavenger. Mr. Brabant also gave permission to backfill the tank pit with the soil that was removed during excavation of the UST.

On May 24, 1989, a 26-inch CMP recovery well was installed at the proposed location by Donovan Petroleum Equipment, (figure 1), to a depth of 14.0 feet using a backhoe. A trench was then excavated from the recovery well towards the 1,000 gallon UST Diesel Tank. A second trench was made from the recovery well towards the abandoned tank field area that was behind the station building. These trenches were excavated to provide a drainage path for any free-floating liquid hydrocarbons in the perched watertable.

Each trench was dug to an average depth of 12.5 feet, or 6.5 feet below the watertable. The trench towards the diesel tank was approximately 37 feet long and the other trench was approximately 28 feet long. The trenches were backfilled with pea gravel to 4.5 feet below grade and filled to grade with part of the soil that was excavated. The remaining soil was placed on plastic sheeting in the back northwestern corner of the site.

The installation of three additional monitoring wells started at 3:00 PM on May 24, 1989. One well was installed at that

time and the other two wells were installed the following day. The monitor wells were installed by means of a backhoe. Mr. Malinowski had requested that Donovan complete this work.

Each well was dug to a depth of 14 to 17 feet below grade, with a two to three foot riser sticking up above grade. This would provide an easy means of locating each well during the winter months. All three monitor wells were backfilled with pea gravel to one foot above the screen and with soil up to grade. Each well was also fitted with a locking cap and lock. The well screens were set from 2.0 to 4.0 feet below grade, down to the final well depth. (See boring logs for exact depths on each well.)

Electric lines and outlets were also installed on May 25, 1989, to supply power to the recovery equipment. These were connected to the main circuit breaker to the station and then to explosion-proof outlets installed on the abandoned loading rack near the 26-inch recovery well. A 220v outlet, two 115v outlets and a 110v outlet were installed. Donovan also supplied a 290-gallon skid tank for recovery of liquid hydrocarbons.

A filter scavenger was installed in the 26-inch CMP recovery well on May 26, 1989 by a PEI technician. The filter scavenger pump was primed and the system was adjusted for automatic operation at this time. PEI began monitoring the site once every two weeks to insure that the equipment was running properly.

Atlantic made provision for a Petro-Tite test to be conducted on the UST Diesel tank as a result of PEI's preliminary findings. On May 30, 1989, a Petro-Tite test was conducted by Anderson Equipment. According to Atlantic, the tank and/or lines were not tight. This led to Atlantic's decision to close the station, and remove all remaining UST's and above ground storage tanks, as previously discussed.

This work started June 5, 1989. A PEI geologist was on site for most of this day to witness the storage tank removal. Mr. Brabant was also present for part of the morning and met with the PEI representative. He reiterated that the DEC would like a written proposal for the remediation of the site. The DEC said they would send Atlantic and PEI a letter stating their requirements for reporting work already accomplished, and a request for a remedial action plan for

this location. All tanks were removed by 4:40 PM and were purged by an air compressor.

The following day, Donivan Petroleum and Equipment Company completed the cleaning of the UST's; cutting them in half for removal to a metal scrap yard. All keys for the building and the fence gate were turned over to Mr. Chris Otto, sales representative for Atlantic.

On August 29, 1989, samples were obtained from the potable wells of the residence immediately to the south of the station, from the auto body shop behind and west of the site, and from the station's own well. The analysis for these samples will be forwarded to Atlantic as soon as we receive them.

HYDROGEOLOGICAL SETTING

The surficial geology of the site area is very complex, consisting of soils deposited from marine basin/glacial lake environments. The soils have been reworked by tectonic and glacial activities. The last of these activities occurred during the Wisconsin Ice Age, where evidence points more toward glacial erosion as a primary mechanism rather than deposition. There are no well-defined moraines in this area, or accumulated material left behind by the retreating of melting glaciers.

The site area is situated over the Hinesburg Syncline, which is a U-shaped fold in the bedrock where younger rock is in the center and older rock on the outside. Soils in the immediate vicinity of the site are a yellow-brown to dark brown, multi-colored, poorly sorted, fine to coarse sand with some interspersed silt overlaying a green-brown silty clay. There is a distinct line of stratification between the clay and sand layers which may indicate two different depositional environments with tectonic activity separating the times of deposition. The underlying bedrock ranges from 325 feet to 400 feet below grade in this area. Approximately one half mile south of this site, bedrock is 75 to 100 feet below grade.

In the vicinity of the Atlantic station, groundwater occurs within a sandy zone about 5.0 - 5.5 feet below grade, just above the clay layer. The watertable typically flows in an east/northeasterly direction.

TECHNICAL SUMMARY AND FINDINGS

PEI's investigations consisted primarily of observing the removal of the underground storage tanks, obtaining samples of the excavated soil, monitoring of the wells on site, obtaining water samples from the existing wells and the potable well, and installing interceptor trenches while installing the recovery well and three new monitoring wells.

PEI confirmed the presence of liquid hydrocarbon in the subsurface of the property on May 23, 1989, during a monitoring check on the three pre-existing wells. The monitoring was performed while waiting for a 4,000-gallon gasoline UST to be excavated and removed. The tank was suspected of having leaks, and later that day eleven (11) holes were found. However, this tank had not been in use for some time, and when it was removed, only a heavy sheen was observed on the water that started accumulating in the area the tank had occupied.

Remedial activity centered around the installation of a recovery well, filter scavenger, and an interceptor trench to remove free-floating liquid hydrocarbons from the watertable. Atlantic responded by performing tank and line tests on the underground diesel tank. When the tank or lines failed the test, Atlantic had all UST's promptly removed, along with the lines.

The data collected to date shows that liquid hydrocarbon contamination is still present in the subsurface on Atlantic's property. There was 0.22 feet of free-floating liquid hydrocarbons in M3 on August 15, 1989. The absorbed hydrocarbons in the soil excavated from the tank field range from 0.034 PPM to 7.883 PPM total BTEX.

Water samples taken from two of the pre-existing monitor wells showed no detectable BTEX contamination. The three additional monitor wells installed on May 24 and 25, 1989

along the southern edge of the property have not shown any contamination, so far, from visual inspection and laboratory analysis. (See Appendix for Laboratory Analysis Results.)

The watertable in the site vicinity is between 5.0 to 5.5 feet below grade. Groundwater gradient is fairly flat in this area and the flow is predominantly to the east-northeast. Additional monitor wells are needed to further assess the watertable flow patterns and to map the extent of the product plume.

On August 11, 1989, the VTDEC wrote a letter to Atlantic requesting the following:

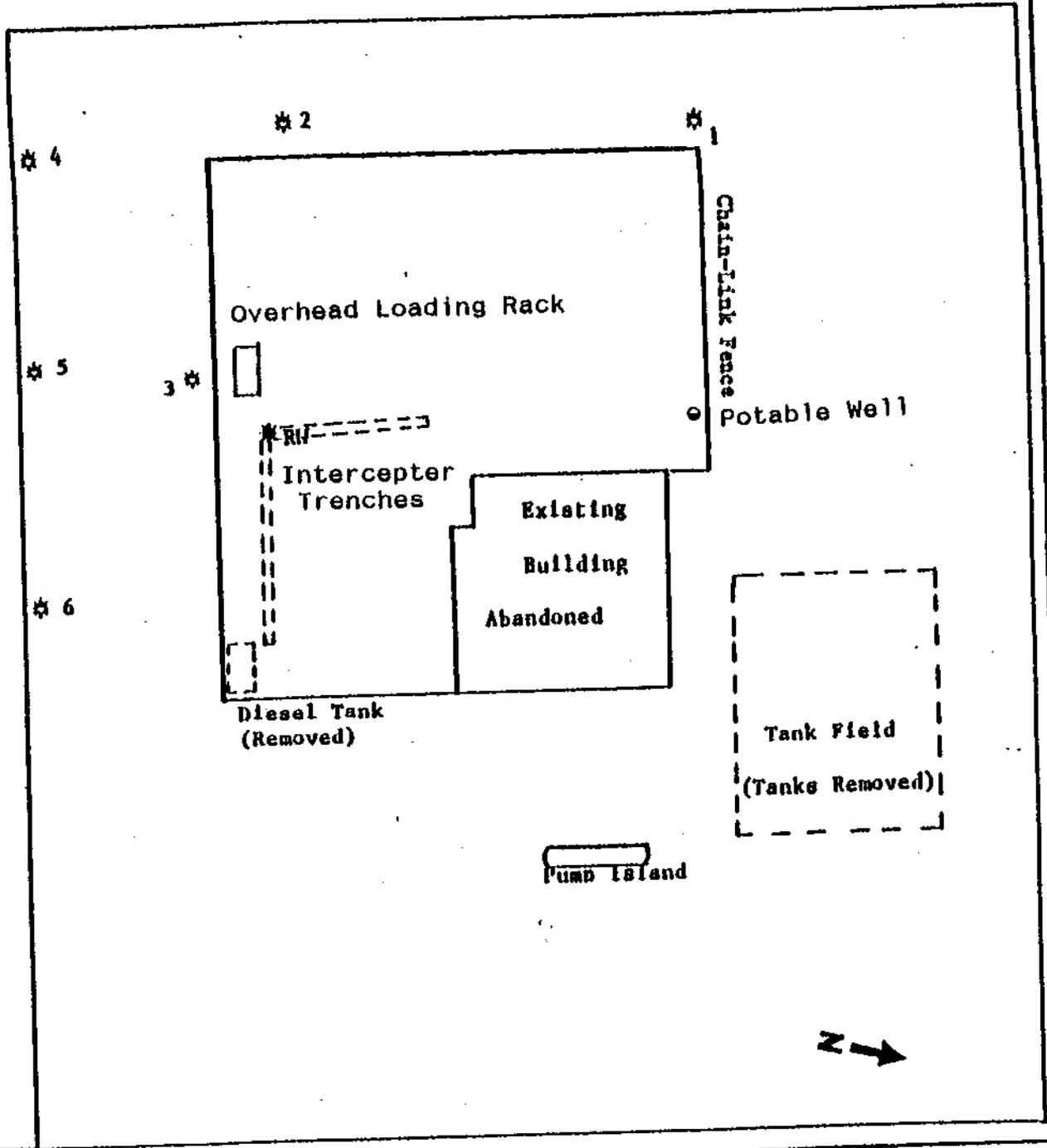
1. Conduct a complete environmental site assessment of this location to determine the extent of petroleum contamination.
2. Augment the current passive recovery system with a watertable depression pump and an upgradient recharge gallery.
3. Obtain prior approval from VTDEC before installing recharge gallery.
4. Obtain water samples from the potable well on site and from neighbors' wells, to be analyzed per EPA methods 602 and 418.1.
5. Forward to the DEC a site assessment report, complete with groundwater and product plume contour maps.

On August 29, 1989, PEI obtained water samples from the potable wells of the private residence along the south side of the station, from the auto body shop to the west and immediately behind the station, and from the station's potable well. The analysis to be conducted on these samples will be EPA method 503.1 for BTEX. This test is suited for analysis of drinking water.

Soil samples were also taken at this time from the excavated soils being stored on plastic sheeting behind the station building. The analysis being run will be a modified EPA method 418.1 and method 8020. The VTDEC has agreed that this soil could be farmed by evenly spreading out the soil then

adding a layer of lime and manure and rototilling the soil mixture, instead of hauling the soil to an authorized landfill. The rototilling must be done regularly during the growing season and an earthen dike must be placed around this area. PEI will investigate these options further. After Atlantic's review of this report, PEI will submit a work plan for submittal to the state along with this report. Before the formulation of a final work plan, PEI would like the opportunity to discuss overall remediation goals and options with Atlantic and the DEC at the earliest opportunity.

APPENDIX I

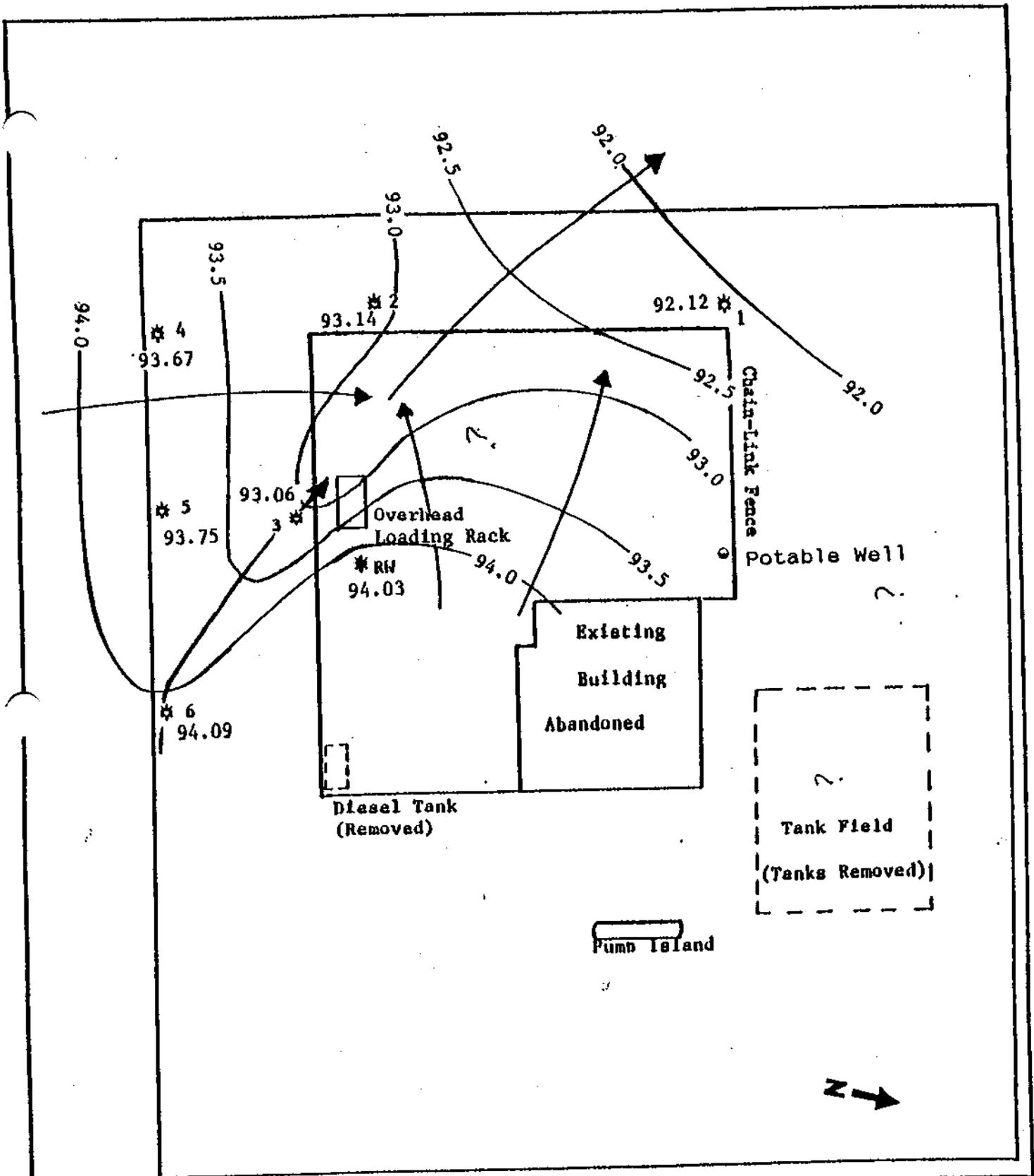


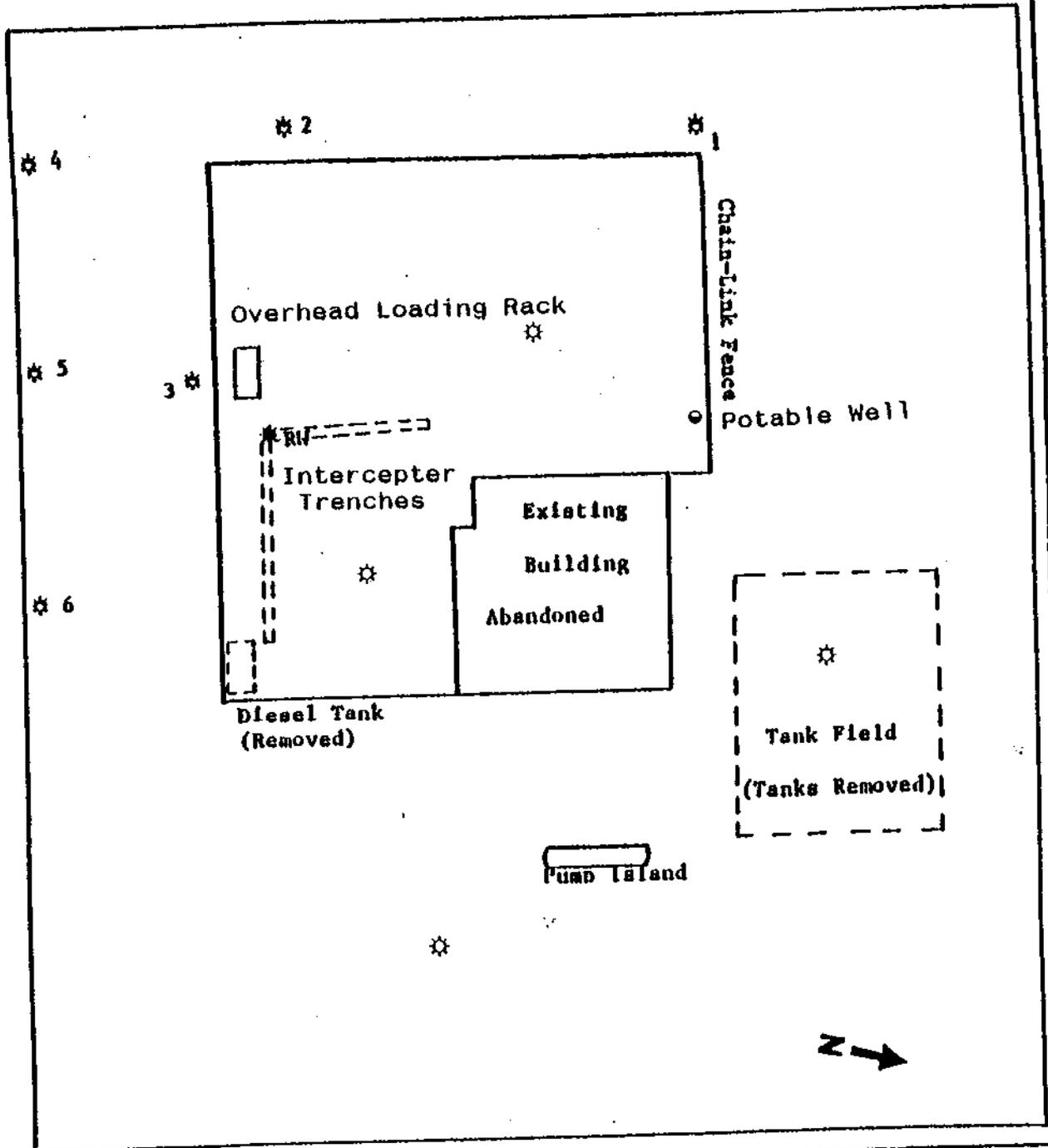
Route 7

Scale



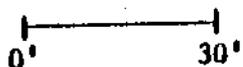
181 North Valley Road • Northham, PA 19044 • 610-345-7700
P POLLUTION ENTERPRISES, INC.
 ATLANTIC STATION SS#60808
 MILTON, VERMONT SITE MAP
 AUGUST 22, 1989





Route 7

Scale



101 North Valley Road • Northham, PA 18044 • 610-242-7100
POLLUTION ENTERPRISES, INC.

ATLANTIC STATION SS#60808
 MILTON, VERMONT SITE MAP

AUGUST 22, 1989

Proposed New Monitor Well Locations

PEI TEST BORING LOG		SHEET: 1 OF 4
		BORING NO: 4
PROJECT: MONITORING WELLS	PROJECT NO: 2014	
BORING LOCATION: ATLANTIC STATION #60808 ROUTE 7, MILTON, VERMONT		DATE(S) DRILLED: 5/25/89
DRILLING CONTRACTOR: ALTON P. DONIVAN PETROLEUM EQUIP. CO		DRILLING METHOD: BACKHOE
BORING 2'W X 10'L X 17' DEEP	SAMPLING	TOTAL
DIAMETER: TRENCH	METHOD: COMPOSITE	DEPTH: 17.0'
BACKFILL MATERIAL AND METHOD: PEA GRAVEL TO 1.5' BELOW GRADE; NATURAL MATERIAL TO GRADE		
LOGGED BY: LAWRENCE E. MARTIN	DEPTH TO	FT. BELOW GRADE:
	STATIC WATER: 7.5	
REMARKS: 15' SCREEN; 5' RISER; PVC 4" RISER IS 2.5' - 3.0' ABOVE GRADE		

LITHOLOGIC INTERVAL	SAMPLE INTERVAL	SPOON BLOWS	RECOVERY	CLASSIFICATION
0.0 - 1.0				BROWN TOPSOIL
1.0 - 6.5'				YELLOW/BROWN TO BROWN/MULTICOLORED FINE-TO-COARSE SAND WITH SOME SILT LENSES
6.5 - 17.0'				GREEN/BROWN CLAY, LITTLE SILT

PEI TEST BORING LOG

SHEET: 2 OF 4

BORING NO: 5

PROJECT: MONITORING WELLS

PROJECT NO: 2014

BORING LOCATION: ATLANTIC STATION #60808
ROUTE 7, MILTON, VERMONT

DATE(S) DRILLED:
5/25/89

DRILLING CONTRACTOR: ALTON P. DONIVAN PETROLEUM EQUIP. CO

DRILLING METHOD:
BACKHOE

BORING 2'W X 10'L X 16' DEEP | SAMPLING
DIAMETER: 4" WELL SCREEN | METHOD: COMPOSITE

TOTAL
DEPTH: 16.0'

BACKFILL MATERIAL
AND METHOD: PEA GRAVEL TO 4.0' BELOW GRADE; NATURAL MATERIAL TO GRADE

LOGGED BY: LAWRENCE E. MARTIN | DEPTH TO
| STATIC WATER: 6.0 FT. BELOW GRADE:

REMARKS: 12' SCREEN; 6.5' RISER; 4" PVC

LITHOLOGIC INTERVAL	SAMPLE INTERVAL	SPOON BLOWS	RECOVERY	CLASSIFICATION
0.0 - 1.0				TOPSOIL
1.0 - 6.0'				BROWN TO YELLOW/BROWN FINE-TO-COARSE SAND WITH SOME SILTY LENSES.
6.5 - 16.0'				GREEN/BROWN CLAY, TRACE-TO-LITTLE SILT

PEI TEST BORING LOG		SHEET: 3 OF 4
		BORING NO: 6
PROJECT: MONITORING WELLS	PROJECT NO: 2014	
BORING LOCATION: ATLANTIC STATION #60808 ROUTE 7, MILTON, VERMONT	DATE(S) DRILLED: 5/25/89	
DRILLING CONTRACTOR: ALTON P. DONIVAN PETROLEUM EQUIP. CO	DRILLING METHOD: BACKHOE	
BORING 4" WELL - 2' W X 10' L DIAMETER: X 17' DEEP	SAMPLING METHOD: COMPOSITE	TOTAL DEPTH: 17.0'
BACKFILL MATERIAL AND METHOD: PEA GRAVEL TO 1.5' BELOW GRADE; NATURAL MATERIAL TO GRADE		
LOGGED BY: LAWRENCE E. MARTIN	DEPTH TO STATIC WATER: 7.5	FT. BELOW GRADE:
REMARKS: 15' SCREEN; 5.5' RISER; 4" PVC		

LITHOLOGIC INTERVAL	SAMPLE INTERVAL	SPOON BLOWS	RECOVERY	CLASSIFICATION
0.0 - 1.0				TOPSOIL
1.0 - 5.5'				BROWN-YELLOW/BROWN FINE-TO-COARSE SAND
5.5 - 17.0'				GREEN/BROWN CLAY, TRACE OF SILT

PEI TEST BORING LOG

SHEET: 4 OF 4

BORING NO: RW

PROJECT: RECOVERY WELL

PROJECT NO: 2014

BORING LOCATION: ATLANTIC STATION #60808
ROUTE 7, MILTON, VERMONT

DATE(S) DRILLED:
5/25/89

DRILLING CONTRACTOR: ALTON P. DONIVAN PETROLEUM EQUIP. CO

DRILLING METHOD:
BACKHOE

BORING
DIAMETER: 30"

SAMPLING
METHOD: COMPOSITE

TOTAL
DEPTH: 14.0'

BACKFILL MATERIAL
AND METHOD: PEA GRAVEL TO 4.0' BELOW GRADE; NATURAL MATERIAL TO GRADE

LOGGED BY: LAWRENCE E. MARTIN

DEPTH TO
STATIC WATER: 5.5' FT. BELOW GRADE:

REMARKS: 14.3' OF CORRUGATED STEEL PIPE SLOTTED ALL THE WAY FROM GRADE
TO BOTTOM OF WELL

LITHOLOGIC INTERVAL	SAMPLE INTERVAL	SPOON BLOWS	RECOVERY	CLASSIFICATION
0.0 - 2.0				BROWN TO GREY/BROWN FILL, FINE-TO-COARSE SAND, SOME SILT, LITTLE FINE-TO COARSE GRAVEL
2.0 - 5.5'				BROWN-TO ORANGE/BROWN FINE-TO-COARSE SAND, SOME SILT SENSES
5.5 - 14.0'				GREEN/BROWN CLAY, TRACE OF SILT

APPENDIX II



ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT
EPA METHOD 624 -- GC/MS PURGEABLES

REPORT DATE: June 12, 1989
CLIENT: Pollution Enterprises Inc.
PROJECT NAME: Atlantic station
SAMPLE COLLECTED BY: L. Martin
DATE SAMPLED: May 23, 1989

ANALYSIS DATE: June 5, 1989
STATION: Well #1
REF. #: 5549
DATE RECEIVED: May 23, 1989

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/L)</u>	<u>Concentration</u> <u>(ug/L)</u>
Benzene	5	ND ¹
Bromodichloromethane	5	ND
Bromoform	5	ND
Bromomethane	20	ND
Carbon tetrachloride	5	ND
Chlorobenzene	10	ND
Chloroethane	20	ND
2-Chloroethylvinyl ether	10	ND
Chloroform	5	ND
Chloromethane	20	ND
Dibromochloromethane	5	ND
1,2-Dichlorobenzene	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
1,1-Dichloroethane	5	ND
1,2-Dichloroethane	5	ND
1,1 Dichloroethene	5	ND
trans-1,2-Dichloroethene	5	ND
1,2-Dichloropropane	10	ND
cis-1,3-Dichloropropene	10	ND
trans-1,3-Dichloropropene	10	ND
Ethylbenzene	10	ND
Methylene Chloride	5	PLE ²
1,1,2,2-Tetrachloroethane	10	ND
Tetrachloroethene	5	ND
Toluene	10	ND
1,1,1-Trichloroethane	5	ND
1,1,2-Trichloroethane	5	ND
Trichloroethene	5	ND
Trichlorofluoromethane	10	ND
Vinyl Chloride	20	ND
Xylenes	10	ND
Cumene	10	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

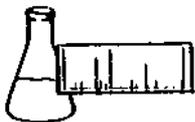
NOTES:

- 1 None detected
- 2 Present in background laboratory environment
- 3 Trace but below quantitation limit

Analyst: J. Morris

Reviewed by

Ronald Woodell



ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT
EPA METHOD 624 -- GC/MS PURGEABLES

REPORT DATE: June 12, 1989 ANALYSIS DATE: June 5, 1989
CLIENT: Pollution Enterprises Inc.
PROJECT NAME: Atlantic station STATION: Well #2
SAMPLE COLLECTED BY: L. Martin REF. #: 5550
DATE SAMPLED: May 23, 1989 DATE RECEIVED: May 23, 1989

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/L)</u>	<u>Concentration</u> <u>(ug/L)</u>
Benzene	5	ND ¹
Bromodichloromethane	5	ND
Bromoform	5	ND
Bromomethane	20	ND
Carbon tetrachloride	5	ND
Chlorobenzene	10	ND
Chloroethane	20	ND
2-Chloroethylvinyl ether	10	ND
Chloroform	5	ND
Chloromethane	20	ND
Dibromochloromethane	5	ND
1,2-Dichlorobenzene	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
1,1-Dichloroethane	5	ND
1,2-Dichloroethane	5	ND
1,1 Dichloroethene	5	ND
trans-1,2-Dichloroethene	5	ND
1,2-Dichloropropane	10	ND
cis-1,3-Dichloropropene	10	ND
trans-1,3-Dichloropropene	10	ND
Ethylbenzene	10	ND
Methylene Chloride	5	PLE ²
1,1,2,2-Tetrachloroethane	10	ND
Tetrachloroethene	5	ND
Toluene	10	ND
1,1,1-Trichloroethane	5	ND
1,1,2-Trichloroethane	5	ND
Trichloroethene	5	ND
Trichlorofluoromethane	10	ND
Vinyl Chloride	20	ND
Xylenes	10	ND
Cumene	10	ND

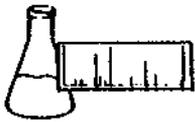
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

- 1 None detected
- 2 Present in background laboratory environment
- 3 Trace but below quantitation limit

Analyst: J. Morris

Reviewed by Ronald Woodell



ENDYNE, INC.

Laboratory Services

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

LABORATORY REPORT
EPA METHOD 624 -- GC/MS PURGEABLES

REPORT DATE: June 12, 1989 ANALYSIS DATE: June 5, 1989
CLIENT: Pollution Enterprises Inc.
PROJECT NAME: Atlantic station STATION: Tap water
SAMPLE COLLECTED BY: L. Martin REF. #: 5551
DATE SAMPLED: May 23, 1989 DATE RECEIVED: May 23, 1989

<u>Parameter</u>	<u>Quantitation</u> <u>Limit (ug/L)</u>	<u>Concentration</u> <u>(ug/L)</u>
Benzene	5	ND ¹
Bromodichloromethane	5	ND
Bromoform	5	ND
Bromomethane	20	ND
Carbon tetrachloride	5	ND
Chlorobenzene	10	ND
Chloroethane	20	ND
2-Chloroethylvinyl ether	10	ND
Chloroform	5	ND
Chloromethane	20	ND
Dibromochloromethane	5	ND
1,2-Dichlorobenzene	10	ND
1,3-Dichlorobenzene	10	ND
1,4-Dichlorobenzene	10	ND
1,1-Dichloroethane	5	ND
1,2-Dichloroethane	5	ND
1,1 Dichloroethene	5	ND
trans-1,2-Dichloroethene	5	ND
1,2-Dichloropropane	10	ND
cis-1,3-Dichloropropene	10	ND
trans-1,3-Dichloropropene	10	ND
Ethylbenzene	10	ND
Methylene Chloride	5	PLE ²
1,1,2,2-Tetrachloroethane	10	ND
Tetrachloroethene	5	ND
Toluene	10	ND
1,1,1-Trichloroethane	5	ND
1,1,2-Trichloroethane	5	ND
Trichloroethene	5	ND
Trichlorofluoromethane	10	ND
Vinyl Chloride	20	ND
Xylenes	10	ND
Cumene	10	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 1

NOTES:

- 1 None detected
- 2 Present in background laboratory environment
- 3 Trace but below quantitation limit

Analyst: J. Morris

Reviewed by Ronald Waddell



ENDYNE, INC.

Laboratory Services

32 James Brown Drive
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LABORATORY REPORT

EPA METHOD 8020 -- PURGEABLE AROMATICS (SOLIDS)

DATE: June 12, 1989 ANALYSIS DATE: June 5, 1989
CLIENT: Pollution Enterprises Inc
PROJECT NAME: Atlantic station STATION: Tank pit front wall
SAMPLE COLLECTED BY: L. Martin REF. #: 5546
DATE SAMPLED: May 23, 1989 TIME SAMPLED: 3:35 PM
DATE RECEIVED: May 23, 1989

<u>Parameter</u>	<u>Concentration (ug/kg)¹</u>
Benzene	ND ²
Chlorobenzene	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
Ethylbenzene	ND
Toluene	38.2
Xylenes	111.

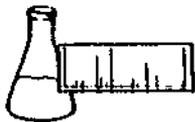
NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

- 1 Method 8020 detection limit is 1 ug/kg
- 2 None detected

Analyst: J. Morris

Reviewed by Ronald W. Delaney



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LABORATORY REPORT

EPA METHOD 8020 -- PURGEABLE AROMATICS (SOLIDS)

DATE: June 12, 1989 ANALYSIS DATE: June 5, 1989
CLIENT: Pollution Enterprises Inc
PROJECT NAME: Atlantic station STATION: Tank pit side wall
SAMPLE COLLECTED BY: L. Martin REF. #: 5548
DATE SAMPLED: May 23, 1989 TIME SAMPLED: 3:35 PM
DATE RECEIVED: May 23, 1989

<u>Parameter</u>	<u>Concentration (ug/kg)¹</u>
Benzene	ND ²
Chlorobenzene	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
Ethylbenzene	ND
Toluene	ND
Xylenes	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

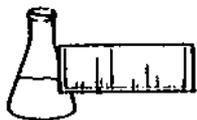
NOTES:

- 1 Method 8020 detection limit is 1 ug/kg
- 2 None detected

Analyst: J. Morris

Reviewed by

Ronald Woodwell



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LABORATORY REPORT

EPA METHOD 8020 -- PURGEABLE AROMATICS (SOLIDS)

DATE: June 12, 1989 ANALYSIS DATE: June 5, 1989
CLIENT: Pollution Enterprises Inc
PROJECT NAME: Atlantic station STATION: Tank pit back wall
SAMPLE COLLECTED BY: L. Martin REF. #: 5547
DATE SAMPLED: May 23, 1989 TIME SAMPLED: 3:35 PM
DATE RECEIVED: May 23, 1989

<u>Parameter</u>	<u>Concentration (ug/kg)¹</u>
Benzene	ND ²
Chlorobenzene	ND
1,2-Dichlorobenzene	ND
1,3-Dichlorobenzene	ND
1,4-Dichlorobenzene	ND
Ethylbenzene	ND
Toluene	ND
Xylenes	ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:

- 1 Method 8020 detection limit is 1 ug/kg
- 2 None detected

Analyst: J. Morris

Reviewed by

Ronald Waddell



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LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

REPORT DATE: July 3, 1989 ANALYSIS DATE: June 19, 1989
CLIENT: Pollution Enterprises, Inc. DATE SAMPLED: June 5, 1989
PROJECT NAME: Atlantic S.S. # 60808 DATE RECEIVED: June 5, 1989
STATION: Diesel Tank
REF #: 5640

Parameter Concentration (ug/kg)

Benzene ND ¹

Toluene ND

Ethylbenzene ND

Xylenes ND

Aliphatics (Total by EPA 601) NR²

NUMBER OF UNIDENTIFIED PEAKS FOUND: NR

Aromatics (Total by EPA 602) ND

Cumenes ND

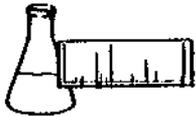
NUMBER OF UNIDENTIFIED PEAKS FOUND: 17

NOTES:

- 1 Compound not detected in analysis
- 2 Not Requested by Sampler

Analyst: J. Morris

Reviewed by Ronald Waddell



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LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

REPORT DATE: July 3, 1989 ANALYSIS DATE: June 19, 1989
CLIENT: Pollution Enterprises, Inc. DATE SAMPLED: June 5, 1989
PROJECT NAME: Atlantic S.S.#60808 DATE RECEIVED: June 5, 1989
STATION: Tank Field No. 1
REF #: 5635

Parameter Concentration (ug/kg)

Benzene	ND ¹
Toluene	ND
Ethylbenzene	ND
Xylenes	ND
Aliphatics (Total by EPA 601)	NR ²

NUMBER OF UNIDENTIFIED PEAKS FOUND: NR

Aromatics (Total by EPA 602)	ND
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NUMBER OF UNIDENTIFIED PEAKS FOUND: 1

NOTES:

- 1 Compound not detected in analysis
- 2 Not Requested by Sampler

Analyst: J. Morris

Reviewed by

Ronald Waddell



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LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

REPORT DATE: July 3, 1989 ANALYSIS DATE: June 19, 1989
CLIENT: Pollution Enterprises, Inc. DATE SAMPLED: June 5, 1989
PROJECT NAME: Atlantic S.S.#60808 DATE RECEIVED: June 5, 1989
STATION: Tank Field No. 2
REF #: 5636

<u>Parameter</u>	<u>Concentration (ug/kg)</u>
Benzene	2.79
Toluene	ND ¹
Ethylbenzene	ND
Xylenes	7,880.
Aliphatics (Total by EPA 601)	NR ²

NUMBER OF UNIDENTIFIED PEAKS FOUND: NR

Aromatics (Total by EPA 602) 4,030.

NUMBER OF UNIDENTIFIED PEAKS FOUND: 2

NOTES:

- 1 Compound not detected in analysis
- 2 Not Requested by Sampler

Analyst: J. Morris

Reviewed by

Ronald Waddell



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LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

REPORT DATE: July 3, 1989 ANALYSIS DATE: June 19, 1989
CLIENT: Pollution Enterprises, Inc. DATE SAMPLED: June 5, 1989
PROJECT NAME: Atlantic S.S. # 6080 DATE RECEIVED: June 5, 1989
STATION: Tank Field No. 3
REF #: 5637

<u>Parameter</u>	<u>Concentration (ug/kg)</u>
Benzene	ND ¹
Toluene	8.68
Ethylbenzene	ND
Xylenes	25.4
Aliphatics (Total by EPA 601)	NR ²
NUMBER OF UNIDENTIFIED PEAKS FOUND: NR	
Aromatics (Total by EPA 602)	ND
NUMBER OF UNIDENTIFIED PEAKS FOUND: 19	

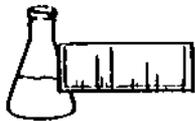
NOTES:

- 1 Compound not detected in analysis
- 2 Not Requested by Sampler

Analyst: J. Morris

Reviewed by

Ronald Waddell



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LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

REPORT DATE: July 3, 1989 ANALYSIS DATE: June 19, 1989
CLIENT: Pollution Enterprises, Inc. DATE SAMPLED: June 5, 1989
PROJECT NAME: Atlantic S.S. # 60808 DATE RECEIVED: June 5, 1989
STATION: Tank Field No. 4
REF #: 5638

<u>Parameter</u>	<u>Concentration (ug/kg)</u>
Benzene	ND ¹
Toluene	ND
Ethylbenzene	ND
Xylenes	ND
Aliphatics (Total by EPA 601)	NR ²

NUMBER OF UNIDENTIFIED PEAKS FOUND: NR

Aromatics (Total by EPA 602) ND

NUMBER OF UNIDENTIFIED PEAKS FOUND: 3

NOTES:

- 1 Compound not detected in analysis
- 2 Not Requested by Sampler

Analyst: J. Morris

Reviewed by

Ronald Waddell



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LABORATORY REPORT

GC METHOD -- BTEX (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

REPORT DATE: July 3, 1989 ANALYSIS DATE: June 19, 1989
CLIENT: Pollution Enterprises, Inc. DATE SAMPLED: June 5, 1989
PROJECT NAME: Atlantic S.S. # 60808 DATE RECEIVED: June 5, 1989
STATION: Tank Field No. 5
REF #: 5639

<u>Parameter</u>	<u>Concentration (ug/kg)</u>
Benzene	ND ¹
Toluene	ND
Ethylbenzene	ND
Xylenes	ND
Aliphatics (Total by EPA 601)	NR ²
NUMBER OF UNIDENTIFIED PEAKS FOUND: NR	
Aromatics (Total by EPA 602)	ND
NUMBER OF UNIDENTIFIED PEAKS FOUND: 3	

NOTES:

- 1 Compound not detected in analysis
- 2 Not Requested by Sampler

Analyst: J. Morris

Reviewed by Ronald Waddell