

THE JOHNSON COMPANY, INC.

Environmental Sciences and Engineering

July 1, 1994

Bob Haslam
Sites Management Section
Department of Environmental Conservation
Hazardous Materials Management Division
103 So. Main Street
Waterbury, Vermont 05676

Re: A & A Welding Company, Rutland, Vermont DEC Site #93-1444
JCO #1-0839-3.

Dear Mr. Haslam:

The Johnson Company Inc. is presenting herewith the results of our investigation of the A & A Welding site in Rutland, Vermont (Figure 1). The investigation consisted of a soil investigation and a groundwater investigation.

1.0 BACKGROUND

On July 30, 1993, The Johnson Company (JCO) was on Site to observe the removal of a 2,000 gallon underground storage tank (UST) used by A&A Welding (A&A) to store waste oil. The UST, upon removal was reported to be in good condition with no apparent holes. During the removal, soils underlying this tank were screened for volatile organic compounds (VOC) with a photoionization detector (PID). The PID registered concentrations of up to 994 parts per million (ppm) in soils underlying the UST. No free petroleum product, or groundwater was observed within the excavation.

Based upon this information, the SMS determined that additional work was necessary.

2.0 INVESTIGATION

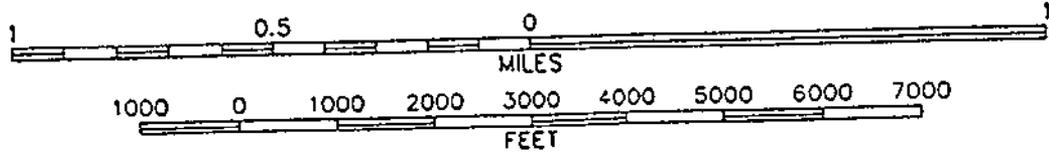
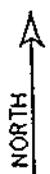
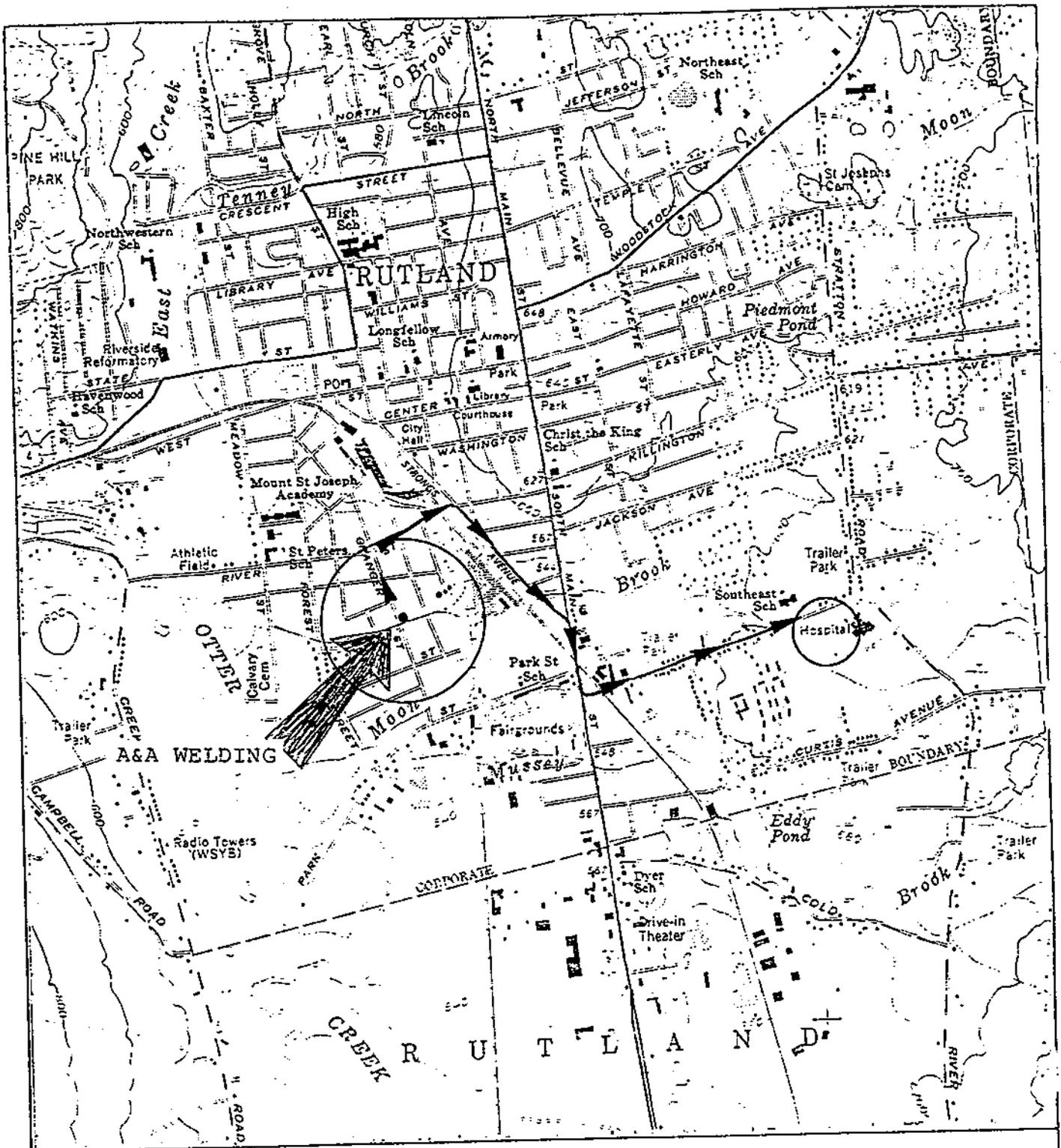
2.1 SOIL INVESTIGATION

On December 1, 1993, The Johnson Company personnel conducted a soil investigation at the A & A Welding site in Rutland. As a result of the investigation, three soil samples were submitted to Analytics Environmental Laboratory, Portsmouth, New Hampshire, for subsequent analysis.

2.1.1 Methodology

Five soil ^{borings} samples (S-1 through S-5) were advanced at the site in the locations as shown in Figure 2 using a power auger. Soil samples were collected using an extendable hand auger. Both the hand auger and the power auger flights were decontaminated in between soil samplings using Liquinox® non phosphate detergent and distilled water. Three of the soil borings were field located to surround the site of the removed underground storage tank (S1, S2, S3). Numerous other soil borings were unsuccessfully attempted. The gravel and fill material encountered precluded further soil sampling. Headspace soil samples were also collected for field screening using a Thermo Electronics Organic Vapor Meter (OVM) photo ionization detector (PID). Two other soil borings were advanced to further characterize the site in the vicinity of a localized drainage area (S4, S5) (Figure 2).

After the collection of soil samples, monitoring wells were installed into soil boring locations S1, S2, and S3. The monitoring wells are constructed of 1.5 inch polyvinyl chloride (PVC) and equipped with factory slotted screens (0.010 slot). The well construction details are summarized in Attachment A.



CONTOUR INTERVAL 20 FEET

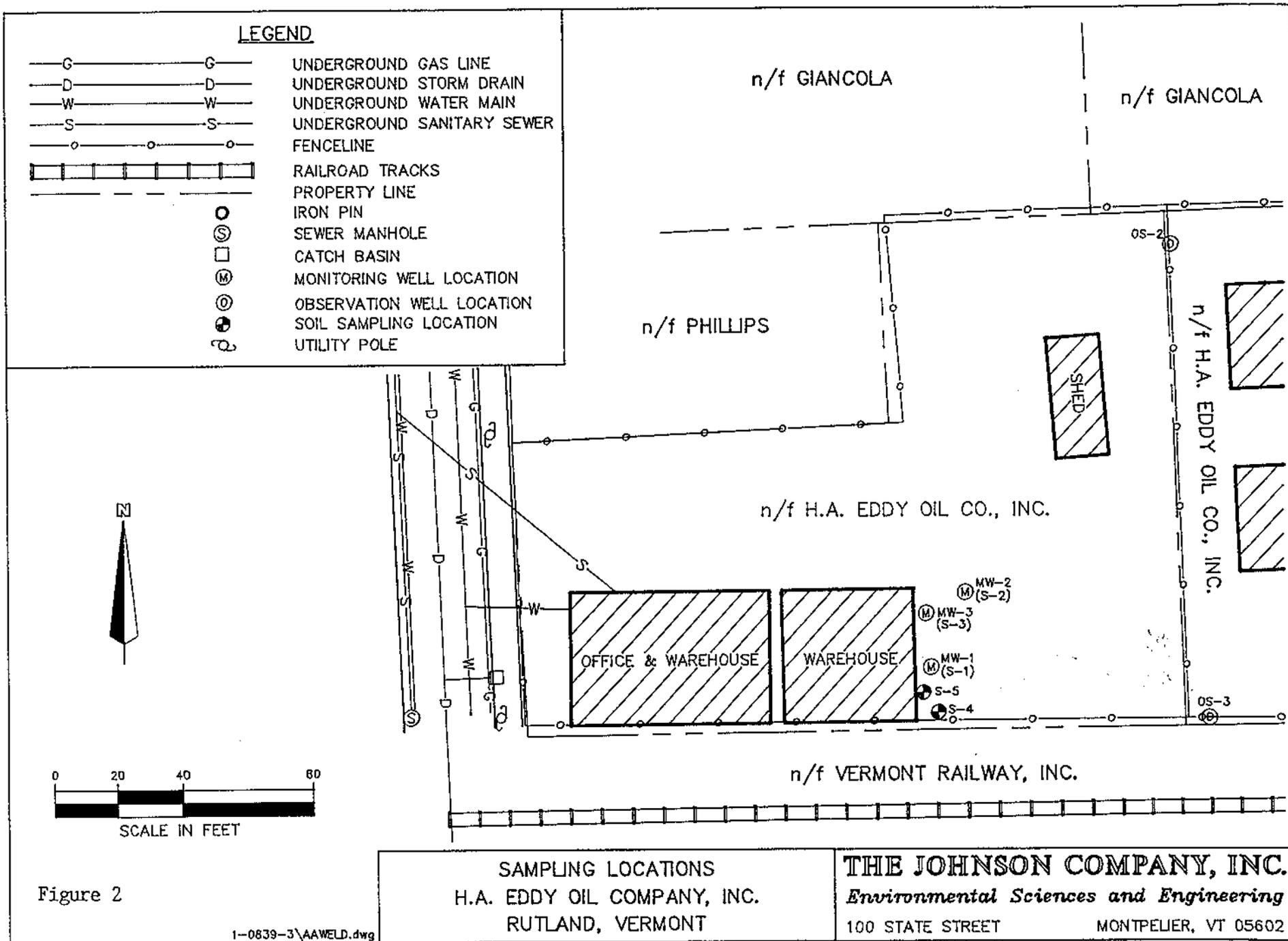


MAP LOCATION

BASE MAP : USGS 7.5 Minute Topographic Quadrangle; Rutland, VT 1983

FIGURE 1 : Site Location Map
A & A Welding Company
Rutland, Vermont

THE JOHNSON COMPANY
Environmental Sciences and Engineering
MONTPELIER, VERMONT



2.2 GROUNDWATER INVESTIGATION

On March 16, 1994 The Johnson Company personnel were present at A & A Welding to collect groundwater samples from the three monitoring wells, MW1 - MW3, which were installed on the previous visit of December 1993. The three monitoring wells MW1 - MW3 at the A & A Welding site were located and opened. Each well was bailed dry using a dedicated bailer. The wells were observed by the field personnel to recharge from the surrounding surface melt water pool, and not from groundwater. In light of that condition, the field personnel did not collect samples from the wells.

On June 9, 1994, the A&A site was again revisited, and groundwater sampling attempted. On this date, water was measured at 3.97 feet below top of casing (BTOC) in MW-1; and 2.14 feet BTOC in MW-2. MW-3 was dry. There was insufficient volume to sample from MW-2. As such, a water quality sample was collected only from MW-1.

3.0 SUMMARY AND CONCLUSIONS

Results of the soil field screening are presented in Table 1. Analytical results of the soil sampling conducted December 1, 1993, are summarized in Table 2. Analytics' report on soils analyses is included as Attachment 2.

The soil samples collected in the vicinity of the removed underground storage tank indicate that there are no BTEX concentrations detectable in the area of the tank. A soil sample collected from a location more removed from the tank and closer to a localized drainage area shows detection of xylene and ethylbenzene, both of which are below the Vermont Soil Guideline Values for these compounds. Concentrations of 62 milligrams per kilogram (mg/kg); and 7 mg/kg as Total Petroleum Hydrocarbons were indicated from soils at S-1 (3 feet) and S-2 (2.5 feet). At present there is no guideline for TPH concentrations in Vermont soils.

The results of the water sampling are included as Attachment 3. The results from the water quality sampling performed June 9, 1994 from MW-1 indicate the presence of ethylbenzene and xylenes in low concentrations in groundwater sampled from this well. The compounds, while indicated, are at concentrations that are below both the Preventative Action Level (PAL) and Enforcement Standard (ES) for groundwater in the State of Vermont. A decline in the well headspace readings collected from at MW-1 was noticed over the period between December, 1993 to June 1994.

The Johnson Company concludes that the previously indicated elevated readings measured during the UST removal last summer have not extended beyond the vicinity of the removed UST. It is our recommendation that this site be removed from the active sites list, and be placed under the category "Site Management Activity Completed", pursuant to the HMMD's draft policy.

Should you have any questions or comments please feel free to call me at 229-4600.

Sincerely,

THE JOHNSON COMPANY, INC.

By: _____


James R. Bowes
Senior Scientist

**TABLE 1
 OVM* SOIL HEADSPACE AND VAPOR MONITORING RESULTS**

Location	Depth (feet)	PID Reading		
		12/01/93	3/16/94	6/09/94
S-1	3	background(BG)		
	3.5	BG		
	5.5	BG		
	5	3.3 ppm		
MW1 ¹	riser	41 ppm	Not Measured	4.3 ppm
S-2	2.5	1.3 ppm		
	3.0	1.3 ppm		
MW2 ²	riser	Not Measured	0.9	0.4 ppm
S-3	2.5	1.3 ppm		
MW3 ³	riser	N/A	1.1 ppm	1.1 ppm
S-4	2	1.6 ppm		
S-5	5	1.6 ppm		

¹ MW-1 installed in S-1 PID reading collected in headspace of well casing.

² MW-2 installed in S-2 "

³ MW-3 installed in S-3 "

**TABLE 2
 SUMMARY OF SOIL ANALYTICAL RESULTS**

EPA 8020 ¹							EPA 8100 ²
Benzene	Toluene	Ethylbenzene	O-Xylene	M&P Xylene	MTBE	TPH	
micrograms/kilogram							milligrams/kilogram
S-1/3	ND	ND	ND	ND	ND	ND	62
S-2/2.5	ND	ND	ND	ND	ND	ND	7
S-5	<60	<60	74	ND	738	ND	ND

¹ Detection Limit 60 microgram per kilogram

² Detection Limit 2 milligrams per kilogram

ATTACHMENT 1

Monitoring Well Details

MONITORING WELL DETAILS¹
INSTALLED DECEMBER 1993

Location	Total Depth	Screened Interval		Riser Pipe	Initial Water
		Top	Bottom		
MW-1	5.5	4	5.5	1.5	3.5 Ft.
MW-2	3	2	3	1.5	Not Measured
MW-3	2.75	1.5	2.5	1.5	1.75

¹All measurements recorded as feet below ground surface.

ATTACHMENT 2

Soil Sample Results



environmental laboratory inc.

Post-It™ brand fax transmittal memo 7C71		# of pages ▶ 8
To: Hugo M.	From: Dana Dreyer	
Co.	Co.	
Dept.	Phone #	
Fax #	Fax #	

December 14, 1993

Mr. Hugo Martinez Cazon
 The Johnson Company
 5 State Street
 Montpelier, VT 05602

RECEIVED
 DEC 15 1993
 THE JOHNSON CO., INC.
 MONTPELIER, VERMONT
 1-0839-3

Re: A + A Welding

Enclosed are the results of the analyses on your sample(s). Please see individual reports for specific methodologies and references.

If you have any further questions on the analytical methods or these results, do not hesitate to call.

<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Remarks</u>
32161-1	12/1/93	S-1	Mod. EPA 8100	
32161-2	12/1/93	S-1-3	EPA 8020	
32161-3	12/1/93	S-2-2.5	EPA 8020 & Mod. EPA 8100	
32161-4	12/1/93	S-5-5	EPA 8020 & Mod. EPA 8100	

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine and Massachusetts.
 A list of actual certified tests is available upon request.

Authorized signature Kenneth W. Teague
 Kenneth W. Teague, President



195 Commerce Way
 Portsmouth, New Hampshire 03801
 603-436-5111

Mr. Hugo Martinez Cazon
 The Johnson Company
 5 State Street
 Montpelier, VT 05602

December 14, 1993

Client Project: A + A Welding

Project Number: 1-0839-3

Station ID: S-1

Lab #: 32161-1
 Matrix: Soil
 Percent Solid: 83
 Dilution Factor: 2.3
 Collection Date: 12/1/93
 Lab Receipt Date: 12/3/93
 Extraction Date: 12/6/93
 Analysis Date: 12/8/93

TOTAL PETROLEUM HYDROCARBON ANALYSIS

Sample	Result	Units	Detection Limit
32161-1	62	mg/kg	2

Surrogate Standard Recovery

m-Terphenyl 90%

Methodology: Water samples prepared by Separatory Funnel Liquid/Liquid Extraction, "Test Methods for Evaluating Solid Waste," Method 3510A; other matrices prepared by Sonication Extraction, "Test Methods for Evaluating Solid Waste," Method 3550. All matrices were analyzed according to "Test Methods for Evaluating Solid Waste, Modified SW-846 Method 8100."

Comments: Results are expressed on a dry weight basis. Quantitation performed based on a No. 2 Fuel Oil standard.

Authorized signature


 Kenneth W. Teague, President

environmental
laboratory inc.

Mr. Hugo Martinez Cazon
The Johnson Company
5 State Street
Montpelier, VT 05602

December 14, 1993

SAMPLE DATA

Lab #: 32161-2
Matrix: Soil
Percent Solid: 83
Dilution Factor: 12
Collection Date: 12/1/93
Lab Receipt Date: 12/3/93
Analysis Date: 12/10/93

CLIENT SAMPLE ID

Client Project: A + A Welding

Project Number: 1-0839-3
Station ID: S-1-3

ANALYTICAL RESULTS PURGEABLE AROMATICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Benzene	60	ND
Toluene	60	ND
Ethylbenzene	60	ND
o-Xylene	60	ND
m&p-Xylene	60	ND
Methyl t-butyl ether	60	ND
<u>Surrogate Standard Recovery</u>		
	α,α,α-Trifluorotoluene	91 %
	Bromofluorobenzene	96 %
	Bromochlorobenzene	76 %
ND=None Detected <=Less than >=Greater than PR=Present but not calibrated for		

METHODOLOGY: Water sample analysis was conducted according to "40 CFR Part 136, EPA Method 602" and other matrices were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8020."

COMMENTS: Results are expressed on a dry weight basis.

Authorized signature

Kenneth W. Teague, President



195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111

Mr. Hugo Martinez Cazon
The Johnson Company
5 State Street
Montpelier, VT 05602

December 14, 1993

Client Project: A + A Welding

Lab #: 32161-3

Project Number: 1-0839-3

Matrix: Soil

Station ID: S-2-2.5

Percent Solid: 89

Dilution Factor: 5.4

Collection Date: 12/1/93

Lab Receipt Date: 12/3/93

Extraction Date: 12/7/93

Analysis Date: 12/9/93

TOTAL PETROLEUM HYDROCARBON ANALYSIS

Sample	Result	Units	Detection Limit
32161-3	7	mg/kg	5

Surrogate Standard Recovery

m-Terphenyl 90%

Methodology: Water samples prepared by Separatory Funnel Liquid/Liquid Extraction, "Test Methods for Evaluating Solid Waste," Method 3510A; other matrices prepared by Sonication Extraction, "Test Methods for Evaluating Solid Waste," Method 3550. All matrices were analyzed according to "Test Methods for Evaluating Solid Waste, Modified SW-846 Method 8100."

Comments: Results are expressed on a dry weight basis. Quantitation performed based on a No. 2 Fuel Oil standard.

Authorized signature


Kenneth W. Teague, President



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laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111

Mr. Hugo Martinez Cazon
The Johnson Company
5 State Street
Montpelier, VT 05602

December 14, 1993

SAMPLE DATA

CLIENT SAMPLE ID

Client Project: A + A Welding

Project Number: 1-0839-3

Station ID: S-2-2.5

Lab #: 32161-3
Matrix: Soil
Percent Solid: 89
Dilution Factor: 11
Collection Date: 12/1/93
Lab Receipt Date: 12/3/93
Analysis Date: 12/9/93

ANALYTICAL RESULTS PURGEABLE AROMATICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Benzene	55	ND
Toluene	55	ND
Ethylbenzene	55	ND
o-Xylene	55	ND
m&p-Xylene	55	ND
Methyl t-butyl ether	55	ND
<u>Surrogate Standard Recovery</u>		
	α,α,α-Trifluorotoluene	73%
	Bromofluorobenzene	98%
	Bromochlorobenzene	88%
ND=None Detected <=Less than >=Greater than PR=Present but not calibrated for		

METHODOLOGY: Water sample analysis was conducted according to "40 CFR Part 136, EPA Method 602" and other matrices were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8020."

COMMENTS: Results are expressed on a dry weight basis.

Authorized signature

Kenneth W. Teague, President



Mr. Hugo Martinez Cazon
The Johnson Company
5 State Street
Montpelier, VT 05602

December 14, 1993

Client Project: A + A Welding

Lab #: 32161-4

Project Number: 1-0839-3

Matrix: Soil

Station ID: S-5-5

Percent Solid: 83

Dilution Factor: 1.1

Collection Date: 12/1/93

Lab Receipt Date: 12/3/93

Extraction Date: 12/7/93

Analysis Date: 12/9/93

TOTAL PETROLEUM HYDROCARBON ANALYSIS

Sample	Result	Units	Detection Limit
32161-4	ND	mg/kg	1

ND denotes none detected.

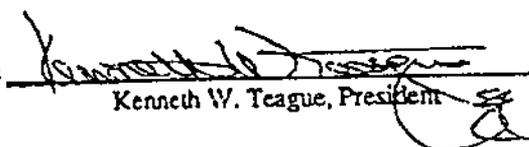
Surrogate Standard Recovery

m-Terphenyl 83%

Methodology: Water samples prepared by Separatory Funnel Liquid/Liquid Extraction, "Test Methods for Evaluating Solid Waste," Method 3510A; other matrices prepared by Sonication Extraction, "Test Methods for Evaluating Solid Waste," Method 3550. All matrices were analyzed according to "Test Methods for Evaluating Solid Waste, Modified SW-846 Method 8100."

Comments: Results are expressed on a dry weight basis.

Authorized signature


Kenneth W. Teague, President



environmental
laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111

Mr. Hugo Martinez Cazon
The Johnson Company
5 State Street
Montpelier, VT 05602

December 14, 1993

SAMPLE DATA

Lab #: 32161-4
Matrix: Soil
Percent Solid: 83
Dilution Factor: 12
Collection Date: 12/1/93
Lab Receipt Date: 12/3/93
Analysis Date: 12/8/93

CLIENT SAMPLE ID

Client Project: A + A Welding

Project Number: I-0839-3
Station ID: S-5-5

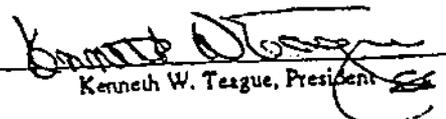
ANALYTICAL RESULTS PURGEABLE AROMATICS

COMPOUND	Detection Limit: µg/kg	Result: µg/kg
Benzene	60	<60
Toluene	60	<60
Ethylbenzene	60	74
o-Xylene	60	ND
m&p-Xylene	60	738
Methyl t-butyl ether	60	ND
<u>Surrogate Standard Recovery</u>		
	α,α,α-Trifluorotoluene	69%
	Bromofluorobenzene	91%
	Bromochlorobenzene	91%
ND=None Detected <=Less than >=Greater than PR=Present but not calibrated for		

METHODOLOGY: Water sample analysis was conducted according to "40 CFR Part 136, EPA Method 602" and other matrices were analyzed according to "Test Methods for Evaluating Solid Waste, SW-846 Method 8020."

COMMENTS: Results are expressed on a dry weight basis.

Authorized signature


Kenneth W. Teague, President

ATTACHMENT 3

Water Sample Results



environmental
laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111

KB

June 21, 1994

Mr. Jim Bowes
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

RECEIVED

JUN 27 1994

THE JOHNSON CO., INC.
MONTPELIER, VERMONT

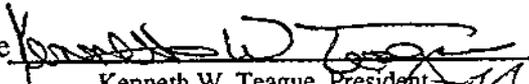
Re: A & A Welding 1-0839-3 (44)

Enclosed are the results of the analyses on your sample(s). Please see individual reports for specific methodologies and references.

If you have any further questions on the analytical methods or these results, do not hesitate to call.

<u>Lab Number</u>	<u>Sample Date</u>	<u>Station Location</u>	<u>Analysis</u>	<u>Remarks</u>
33041-1	6/9/94	MW-1	EPA 8020	

Analytics Environmental Laboratory is certified by the states of New Hampshire, Maine and Massachusetts. A list of actual certified tests is available upon request.

Authorized signature 
Kenneth W. Teague, President



environmental
laboratory inc.

195 Commerce Way
Portsmouth, New Hampshire 03801
603-436-5111

Mr. Jim Bowes
The Johnson Company, Inc.
100 State Street
Montpelier, VT 05602

June 21, 1994

SAMPLE DATA

Lab #: 33041-1
Matrix: Water
Percent Solid: N/A
Dilution Factor: 1.0
Collection Date: 6/9/94
Lab Receipt Date: 6/10/94
Analysis Date: 6/20/94

CLIENT SAMPLE ID

Client Project: A & A Welding

Project Number: 1-0839-3 (44)

Station ID: MW-1

ANALYTICAL RESULTS PURGEABLE AROMATICS

COMPOUND	Detection Limit: µg/L	Result: µg/L
Benzene	5	ND
Toluene	5	ND
Ethylbenzene	5	12
m-Xylene	5	5
o&p-Xylene	5	59
Methyl t-butyl ether	5	ND
<u>Surrogate Standard Recovery</u>		
	d4-1,2-Dichloroethane	90%
	d8-Toluene	106%
	Bromofluorobenzene	106%
ND=None Detected <=Less than >=Greater than PR=Present but not calibrated for		

METHODOLOGY: Sample was analyzed according to "Test Methods for Evaluating Solid Waste, Modified SW-846 Method 8240A."

COMMENTS:

Authorized signature

Kenneth W. Teague, President



environmental laboratory inc.

195 Commerce Way
Portsmouth, NH 03801
Phone 603 436-5111
Fax 603 436-0154

For Analytics use only: Rev. 1/94

Samples were:

- 1) Shipped or Hand-delivered
- 2) Temp Blank °C 12.10
- 3) Received in good condition: Y or N

except temp blank by
client notified 6/10
OK to run

Proj #: 1-0839-3(44) Proj Name: A+A welding
 Company: The Johnson Co.
 Contact: Jim Bowes
 Address: 100 State St.
Montpelier, VT
 Phone: 802-229-4600 P.O.#: 1-0839-3(44)
 Sampler(Signature): Wamp

Matrix Key:
 W= Water
 S= Soil/Sludge
 O= Oil
 E= Extract
 X= Other

Preservation:
 Unpres.
 4°C HNO3 H2SO4 HCl Other

Station Identification	Date	Time	Analysis	Unpres.	4°C	HNO3	H2SO4	HCl	Other	Matrix	Container (number & type)	pH	Analytics Sample #'s
MW-1	6.9.94	16:45	8020 only		X			X		W	2-40ml		33041-1

Received by: [Signature]
 Relinquished by: [Signature]
 Date: 6.9.94 Time: 5:00
6/10/94 1030

FAX RESULTS? Yes No
 Fax Number: _____

Comments/Instructions:
 * send us copy of this Chain of Custody
 Invoice to H.A. Eddy Enterprises

TURNAROUND REQUEST
 Standard Priority (Surcharge)