THE JOHNSON COMPANY, INC.

Environmental Sciences and Engineering

File

July, 1, 1992

Mr. Michael Jasinski
U.S. Environmental Protection Agency
J.F.K. Federal Building HPS-CAN 1
Boston, MA 02203

Included in Attach. A Supplemental Sampling & Analysis Report

Re: Pine Street Barge Canal Site, Burlington, VT.
JCO # 1-0730-1

Dear Mike,

We are providing herein the results from the field sampling performed by The Johnson Company at the Pine Street Barge Canal site in Burlington, Vermont on June 15 and 16, 1992. Sample designations are described as follows and approximate locations indicated on Figure 1.

PS:	Peat Sample
FS:	Fill Sample
CS-1:	Canal Sediment, Northern location
CS-2:	Canal Sediment, Southern location

The laboratory analysis reports are provided in Attachments 1, 2 and 3 and a summary of the data from these reports is presented in Tables 1, 2 and 3. The only data that has not been received from the laboratory to date are the viscosity results.

Feel free to call if you have any questions.

Sincerely,

THE JOHNSON COMPANY

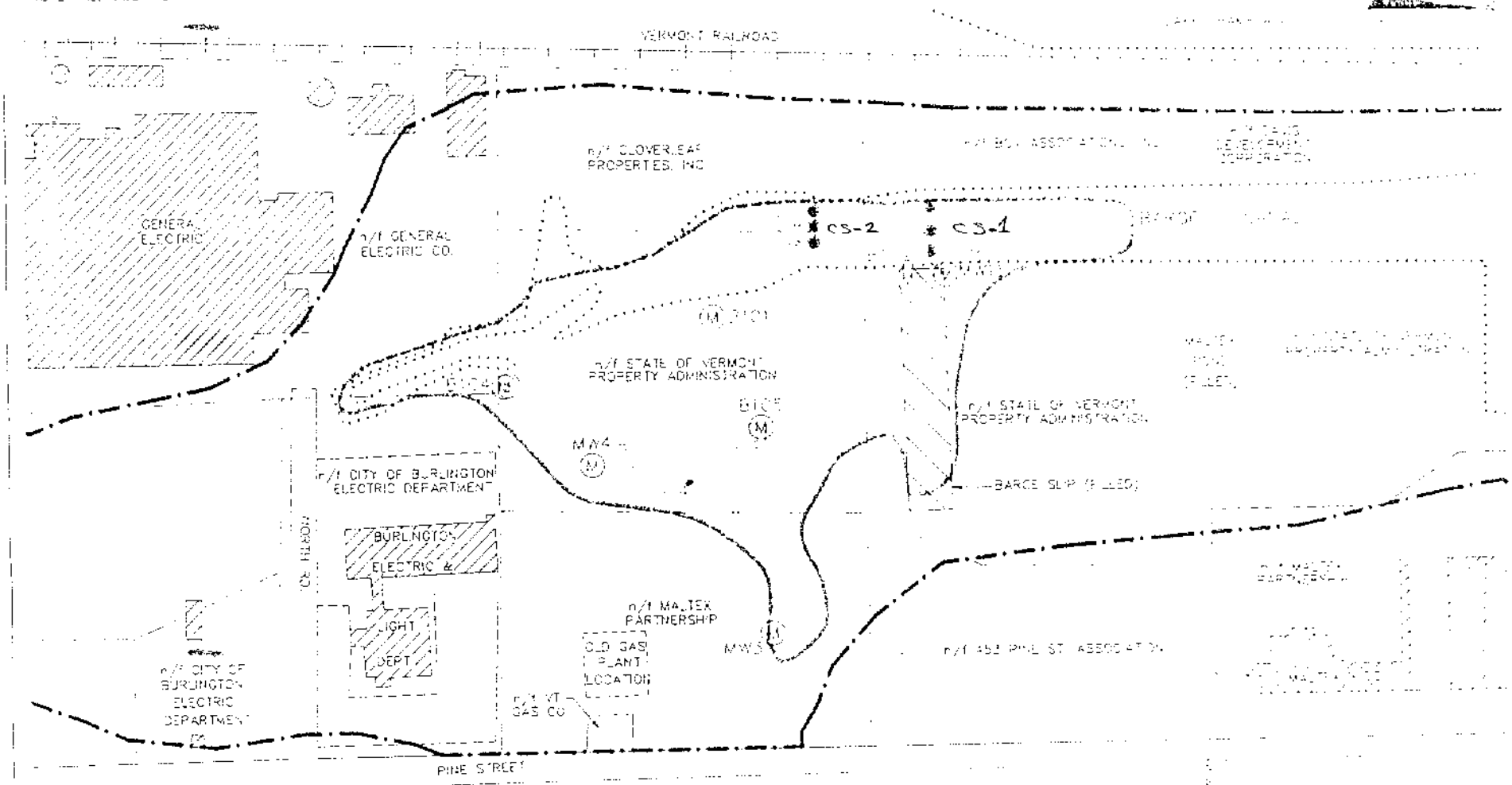
By: _____
Christopher M. Crandell, P.E.
Vice President

Attachments

cc: Mr. Joe Kwasnik, New England Electric w/attachments
Mr. Norm Terreri, Green Mountain Power Corporation
Ms. Karen O'Neill, Green Mountain Power Corporation w/attachments
Mr. David Ledbetter, Hunton & Williams

Reviewed by: CMC
J:\1\0730\1-0730-1\JASINSKI.LTR July 1, 1992 [illegible]

SOURCES: "SUPPLEMENTAL REMEDIAL INVESTIGATION FINAL REPORT – VOLUME II, PINE STREET CANAL SUPERFUND SITE, BURLINGTON, VERMONT" BY METCALF & EDDY, MARCH, 1992
NOTE: ALL LOCATIONS ARE APPROXIMATE



LEGEND

- MONITORING WELL LOCATION
- PROPERTY LINE
- PARKING AREA
- SURFACE WATER
- ESTIMATED PINE STREET CANAL SITE BOUNDARY (45.0± acres)
- AREAL EXTENT OF FREE PHASE
- SEDIMENT SAMPLING LOCATION
- SOIL SAMPLING LOCATION (APPROXIMATE)

BOUNDARY UNDETERMINED | BOUNDARY DETERMINED

FIGURE 1 SAMPLING LOCATIONS
PINE STREET BARGE CANAL
BURLINGTON, VERMONT

THE JOHNSON COMPANY, INC
Environmental Sciences and Engineering
MONTPELIER, VERMONT

TABLE 1
Group 1 - Fuel Characterization

PARAMETER	PEAT (PS)	CANAL SEDIMENTS	
ULTIMATE ANALYSIS (%-as received)		(CS-1)	(CS-2)
Moisture	81.55	80.10	73.60
Carbon	7.89	4.02	5.61
Hydrogen	0.40	0.86	0.86
Nitrogen	0.34	0.08	0.13
Sulfur	0.14	0.14	0.15
Ash	8.95	12.57	16.04
Oxygen (diff)	0.73	2.23	3.61
			16.57
Silicon (µg/gm - as received)	12.91	17.00	51
Fluorine (µg/gm - as received)	51	42	600
Chlorine (µg/gm - as received)	500	800	
GRAVITY			
Specific at 60/60°F	1.0662	1.1187	1.1818
lb/gallon at 60°F	8.883	9.320	9.846
HEATING VALUE			
Btu/lb	1,357	961	1,042
Btu/gal @ 60°F	12,054	8,957	10,259
Water (% by wt.)	83.55	80.10	73.60
Flash Point (°F)	75	132	108
VISCOSITY (centipoise)			
at 100°F			
at 122°F			
at 210°F			

PARAMETER		PEAT (PS)	CANAL SEDIMENTS (CS-1)	CANAL SEDIMENTS (CS-2)
FUSION TEMPERATURE OF ASH (°F)				
Initial Deformation	Reducing	2130	2100	2095
	Oxidizing	2305	2300	2325
Softening	Reducing	2205	2185	2185
	Oxidizing	2370	2355	2385
Hemispherical	Reducing	2275	2270	2275
	Oxidizing	2435	2405	2445
Fluid	Reducing	2345	2350	2360
	Oxidizing	2505	2455	2500
MINERAL ANALYSIS-IGNITED BASIS (% by weight)				
Silica, SiO_2		56.93	57.56	55.35
Alumina, Al_2O_3		17.67	15.22	14.88
Titania, TiO_2		0.90	0.90	0.88
Iron oxide, Fe_2O_3		9.60	11.63	11.44
Calcium oxide CaO		3.50	3.14	3.00
Magnesium oxide, MgO		2.50	2.50	2.10
Potassium oxide, K_2O		3.02	3.03	2.60
Sodium oxide, Na_2O		1.42	1.66	1.58
Sulfur trioxide, SO_3		2.94	2.81	2.61
Phosphorus pentoxide, P_2O_5		0.20	0.70	0.66
Strontium oxide, SrO		0.01	0.01	0.01
Barium oxide, BaO		0.11	0.08	0.08
Manganese oxide, Mn_3O_4		0.15	0.18	0.17
Undetermined		1.05	0.58	1.64
Silica Value		78.49	76.92	77.91
Base : Acid Ratio		0.27	0.30	0.28
Type of Ash		Bituminous	Bituminous	Bituminous
Fouling Index		0.38	0.50	0.44
Slagging Index		0.21	0.22	0.16

Group 2: Hazardous Waste Characterization

PARAMETER	PEAT (PS)	FILL (FS)	CANAL SEDIMENTS		TOXICITY CHARACTERISTIC THRESHOLD
			(CS-1)	(CS-2)	
TCLP VOLATILE ORGANIC COMPOUNDS (mg/l)					
Vinyl Chloride	<0.051	<0.050	<0.061	<0.059	0.2
1,1 - Dichloroethene	<0.034	<0.028	<0.030	<0.032	0.7
Chloroform	<0.034	<0.028	<0.028	<0.028	6.0
1,2 - Dichloroethane	0.078	<0.030	<0.031	<0.025	0.5
2, Butanone	<0.079	<0.78	<0.74	<0.50	200.0
Carbon Tetrachloride	<0.031	<0.027	<0.027	<0.032	0.5
Trichloroethene	<0.033	<0.028	<0.028	<0.030	0.5
Benzene	6.7	0.11	0.25	2.8	0.5
Tetrachloroethene	<0.035	<0.029	<0.030	<0.033	0.7
Chlorobenzene	<0.034	<0.029	<0.029	<0.029	100
TCLP SEMIVOLATILE ORGANIC COMPOUNDS (mg/l)					
Pyridine	<0.044	<0.043	<0.050	<0.11	5.0
1,4 - dichlorobenzene	<0.035	<0.034	<0.039	<0.086	7.5
2 - methylphenol	<0.050	<0.064	0.14	<0.15	200.0[1]
3 and 4 - methylphenol	<0.039	<0.087	0.40	<0.19	200.0[1]
hexachloroethane	<0.043	<0.037	<0.047	<0.10	3.0
nitrobenzene	<0.020	<0.030	<0.023	<0.072	2.0
hexachlorobutadiene	<0.032	<0.055	<0.045	<0.12	0.5
2,4,6 - trichlorophenol	<0.025	<0.031	<0.026	<0.069	2.0
2,4,5 - trichlorophenol	<0.031	<0.031	<0.030	<0.08	400.0
2,4 - dinitrotoluene	<0.023	<0.024	<0.024	<0.065	0.13
hexachlorobenzene	<0.025	<0.024	<0.029	<0.092	0.13
pentachlorophenol	<0.10	<0.10	<0.10	<0.44	100.0

[1] limit for total cresol which is made up of the sum of 2,3 and 4 methylphenol

Table 2 (continued)

PARAMETER	PEAT (PS)	FILL (FS)	CANAL SEDIMENTS		TOXICITY CHARACTERISTIC THRESHOLD
			(CS-1)	(CS-2)	
TCLP METALS (mg/l)					
Arsenic	<0.7	<0.7	<0.7	<0.7	5.0
Barium	<1.0	1.	1.0	<1.	100.0
Cadmium	<0.06	<0.05	<0.06	<0.06	1.0
Chromium	<0.7	<0.6	<0.6	<0.6	5.0
Lead	<0.6	<0.6	<0.6	<0.6	5.0
Mercury	<0.005	<0.005	<0.005	<0.005	0.2
Selenium	<0.7	<0.7	<0.7	<0.7	1.0
Silver	<0.1	<0.1	<0.1	<0.1	5.0

Table 3
Group 3 - Asphalt Batch Plant Characteristics

PARAMETER	PEAT (PS)	FILL (FS)	CANAL SEDIMENTS	
			(CS-1)	(CS-2)
Moisture (% by wt.)	79.5	18.2	73.1	64.5
TOTAL PETROLEUM HYDROCARBONS (mg/kg)				
Gasoline As-received Dry Wt. Basis	<70 <300	<70 <90	<700 <3,000	<70 <200
Kerosene As-received Dry Wt. Basis	<400 <2,000	<400 <500	<4,000 <10,000	<400 <1,000
Diesel/#2 Fuel As-received Dry Wt. Basis	<400 <2,000	<400 <500	<4,000 <10,000	<400 <1,000
Reactivity - Sulfide (µg/kg - dry wt.)	<150,000	<61,000	<190,000	<220,000
Reactivity - Cyanide (µg/kg - dry wt.)	<150,000	<61,000	<190,000	<220,000
Total Solids (µg/kg - dry wt.)	34	82	26	23
PARTICLE SIZE DISTRIBUTION (% Passing)				
3/4 inch	100	100	100	100
#4 sieve	75	91	100	98
#40 sieve	42	67	91	91
#200 sieve	27	36	84	74

Attachment 1

Fuel Characterization

Laboratory Reports: Commercial Testing and Engineering

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1515 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
Member of the SGS Group (Société Générale de Surveillance)

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2900
FAX: (708) 333-3060

Sample identification by
The Johnson Company

Kind of sample reported to us: Peat

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Peat Composite
Sample Nos: PS-2, PS-3 & PS-4
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34860

	As Received
GRAVITY	
Specific at 60/60°F	1.0662
Lb/gallon at 60°F	8.883
HEATING VALUE	
Btu/lb	1,357
Btu/gal at 60°F	12,054
WATER, % Wt.	83.55
FLASH POINT, °F	
PENSKY MARTENS	75

Methods: Gravity per ASTM Designation D-287-82
Heating Value per ASTM Designation D-240-87
Water per ASTM Designation D-95-83
Flash Point per ASTM Designation D-93-85

Respectfully Submitted
COMMERCIAL TESTING & ENGINEERING CO

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
SINCE 1908
Member of the SGS Group (Societe Generale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16150 VAN DRUNEN RD., P.O. BOX 157
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2920
FAX: (708) 333-3000

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us: Peat

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Peat Composite
Sample Nos: PS-2, PS-3 & PS-4
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34860

ULTIMATE ANALYSIS

	As Received
% Moisture	81.55
% Carbon	7.89
% Hydrogen	0.40
% Nitrogen	0.34
% Sulfur	0.14
% Ash	8.95
% Oxygen(diff)	0.73
	100.00

	As Received, UG/G
Silicon, Si	12.91
Fluorine, F	51
Chlorine, Cl	500

Methods: Carbon and Hydrogen by LECO CHN/600
Nitrogen by ASTM Designation D-3228-83
Sulfur by LECO SC-132
Ash by ASTM Designation D-482
Silicon per ASTM Designation D 3682
Fluorine per ASTM Designation D 3761
Chlorine per ASTM Designation D 4208

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, South Holland Laboratory

OVER 40 BRANCH LABORATORIES STRATEGICALLY LOCATED IN THE COAL, OIL, MINING AREAS, SEAWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-5300
Member of the SGS Group (Société Générale de Surveillance)

June 30, 1992

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16100 VAN DRUNEN RD., P.O. BOX 1[illegible]
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2500
FAX: (708) 331-3050

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bekos

Sample identification by
The Johnson Company

Kind of sample reported to us: Peat

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Peat Composite
Sample Nos: PS-2, PS-3 & PS-4
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34860

FUSION TEMPERATURE OF ASH, (°F)

	Reducing	Oxidizing
Initial Deformation (IT)	2130	2305
Softening (ST)	2205	2370
Hemispherical (HT)	2275	2435
Fluid (FT)	2345	2505

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, South Holland Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1918 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

June 30, 1992

PLEASE ADDRESS ALL CORRESPONDENCE TO
16100 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2900
FAX: (708) 333-3060

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us: Peat

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Peat Composite
Sample Nos: PS-2, PS-3 & PS-4
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34860

MINERAL ANALYSIS	IGNITED BASIS, % Weight
Silica, SiO_2	56.93
Alumina, Al_2O_3	17.67
Titania, TiO_2	0.90
Iron oxide, Fe_2O_3	9.60
Calcium oxide, CaO	3.50
Magnesium oxide, MgO	2.50
Potassium oxide, K_2O	3.02
Sodium oxide, Na_2O	1.42
Sulfur trioxide, SO_3	2.94
Phosphorus pentoxide, P_2O_5	0.20
Strontium oxide, SrO	0.01
Barium oxide, BaO	0.11
Manganese oxide, Mn_3O_4	0.15
Undetermined	1.05
	100.00

Silica Value = 78.49
Base:Acid Ratio = 0.27

Type of Ash = BITUMINOUS
Fouling Index = 0.38
Slagging Index = 0.21

Respectfully submitted:
COMMERCIAL TESTING & ENGINEERING CO.

Method: ASTM Designation D 3682-87

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1010 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 863-9300
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2900
FAX: (708) 333-3060

cc: CAC
GBJ

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us	Sediment	Project Name:	Barge Canal
		Sample ID:	Sediment Composite
Sample taken at	Pine Street, Burlington, VT	Sample Nos:	CS-1A, CS-1B & CS-1C
		Date:	6/16/92
Sample taken by	The Johnson Company		
Date sampled	June 16, 1992		
		P.O. No.	1-0730-1 (714)
Date received	June 18, 1992		

Analysis Report No. 71-34861

	As Received
GRAVITY	
Specific at 60/60°F	1.1187
Lb/gallon at 60°F	9.320
HEATING VALUE	
Btu/lb	961
Btu/gal at 60°F	8,957
WATER, % Wt.	80.10
FLASH POINT, °F	
PENSKY MARTENS	132

Methods: Gravity per ASTM Designation D-287-82
Heating Value per ASTM Designation D-240-87
Water per ASTM Designation D-95-83
Flash Point per ASTM Designation D-93-85

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To Jim Bowes	From
Co. Johnson Co	Co.
Dept.	Phone #
Fax #	Fax #

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2900
FAX: (708) 333-3060

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us: Sediment

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Sediment Composite
Sample Nos: CS-1A, CS-1B & CS-1C
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34861

ULTIMATE ANALYSIS

	As Received
% Moisture	80.10
% Carbon	4.02
% Hydrogen	0.86
% Nitrogen	0.08
% Sulfur	0.14
% Ash	12.57
% Oxygen(diff)	2.23
	100.00

	As Received, UG/G
Silicon, Si	17.00
Fluorine, F	42
Chlorine, Cl	800

Methods: Carbon and Hydrogen by LECO CHN/600
Nitrogen by ASTM Designation D-3228-83
Sulfur by LECO SC-132
Ash by ASTM Designation D-482
Silicon per ASTM Designation D 3682
Fluorine per ASTM Designation D 3761
Chlorine per ASTM Designation D 4208

Respectfully Submitted,
COMMERCIAL TESTING & ENGINEERING CO.

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1818 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
SINCE 1896
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO
16100 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2900
FAX: (708) 333-3060

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us: Sediment

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Sediment Composite
Sample Nos: CS-1A, CS-1B & CS-1C
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34861

FUSION TEMPERATURE OF ASH, (°F)

	Reducing	Oxidizing
Initial Deformation (IT)	2100	2300
Softening (ST)	2185	2355
Hemispherical (HT)	2270	2405
Fluid (FT)	2350	2455

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, South Holland Laboratory

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD ILLINOIS 60148 • (708) 953-9300
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO
10130 VAN DRUNEN RD. P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2800
FAX: (708) 333-3050

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us: Sediment

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Sediment Composite
Sample Nos: CS-1A, CS-1B & CS-1C
Date: 6/16/92

P.O. No. 1-0/30-1 (714)

Analysis Report No. 71-34861

MINERAL ANALYSIS	IGNITED BASIS, % Weight
Silica, SiO_2	57.56
Alumina, Al_2O_3	15.22
Titania, TiO_2	0.90
Iron oxide, Fe_2O_3	11.63
Calcium oxide, CaO	3.14
Magnesium oxide, MgO	2.50
Potassium oxide, K_2O	3.03
Sodium oxide, Na_2O	1.65
Sulfur trioxide, SO_3	2.81
Phosphorus pentoxide, P_2O_5	0.70
Strontium oxide, SrO	0.01
Barium oxide, BaO	0.08
Manganese oxide, Mn_3O_4	0.18
Undetermined	0.58
	100.00

Silica Value = 76.92
Base:Acid Ratio = 0.30

Type of Ash = BITUMINOUS
Fouling Index = 0.50
Slagging Index = 0.22

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO

Method: Ash Designation D 3682-87

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
SINCE 1896
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2900
FAX: (708) 333-3660

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowos

Sample identification by
The Johnson Company

Kind of sample reported to us: Sediment

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Sediment Composite
Sample Nos: CS-2A, CS-2B & CS-2C
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34862

	As Received
GRAVITY	
Specific at 60/60°F	1.1818
Lb/gallon at 60°F	9.846
HEATING VALUE	
Btu/lb	1,042
Btu/gal at 60°F	10,259
WATER, % Wt.	73.60
FLASH POINT, °F	
PENSKY MARTENS	108

Methods: Gravity per ASTM Designation D-287-82
Heating Value per ASTM Designation D-240-87
Water per ASTM Designation D-95-83
Flash Point per ASTM Designation D-93-85

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
SINCE 1908
Member of the SGS Group (Societe Generale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2900
FAX: (708) 333-3060

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us: Sediment

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Sediment Composite
Sample Nos: CS-2A, CS-2B & CS-2C
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34862

ULTIMATE ANALYSIS

	As Received
% Moisture	73.60
% Carbon	5.61
% Hydrogen	0.86
% Nitrogen	0.13
% Sulfur	0.15
% Ash	16.04
% Oxygen(diff)	3.61
	100.00

	As Received, UG/G
Silicon, Si	16.57
Fluorine, F	51
Chlorine, Cl	600

Methods: Carbon and Hydrogen by LECO CHN/600
Nitrogen by ASTM Designation D-3228-83
Sulfur by LECO SC-132
Ash by ASTM Designation D-482
Silicon per ASTM Designation D 3682
Fluorine per ASTM Designation D 3761
Chlorine per ASTM Designation D 4208

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2000
FAX: (708) 333-3060

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us: Sediment

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Sediment Composite
Sample Nos: CS-2A, CS-2B & CS-2C
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34862

FUSION TEMPERATURE OF ASH, (°F)

	Reducing	Oxidizing
Initial Deformation (IT)	2095	2325
Softening (ST)	2185	2385
Hemispherical (HT)	2275	2445
Fluid (FT)	2360	2500

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

COMMERCIAL TESTING & ENGINEERING CO.
GENERAL OFFICES: 1919 SOUTH HIGHLAND AVE., SUITE 210-B, LOMBARD, ILLINOIS 60148 • (708) 953-9300
SINCE 1908
Member of the SGS Group (Société Générale de Surveillance)

PLEASE ADDRESS ALL CORRESPONDENCE TO:
16130 VAN DRUNEN RD., P.O. BOX 127
SOUTH HOLLAND, IL 60473
TELEPHONE: (708) 331-2900
FAX: (708) 333-3000

June 30, 1992

THE JOHNSON COMPANY INC.
5 State Street
Montpelier, VT 05602
ATTN: James R. Bowes

Sample identification by
The Johnson Company

Kind of sample reported to us: Sediment

Sample taken at: Pine Street, Burlington, VT

Sample taken by: The Johnson Company

Date sampled: June 16, 1992

Date received: June 18, 1992

Project Name: Barge Canal
Sample ID: Sediment Composite
Sample Nos: CS-2A, CS-2B & CS-2C
Date: 6/16/92

P.O. No. 1-0730-1 (714)

Analysis Report No. 71-34862

MINERAL ANALYSIS	IGNITED BASIS, % Weight
Silica, SiO_2	50.35
Alumina, Al_2O_3	14.88
Titania, TiO_2	0.88
Iron oxide, Fe_2O_3	11.44
Calcium oxide, CaO	3.00
Magnesium oxide, MgO	2.10
Potassium oxide, K_2O	2.60
Sodium oxide, Na_2O	1.58
Sulfur trioxide, SO_3	2.61
Phosphorus pentoxide, P_2O_5	0.66
Strontium oxide, SrO	0.01
Barium oxide, BaO	0.08
Manganese oxide, Mn_3O_4	0.17
Undetermined	1.64
	100.00

Silica Value = 77.91
Base:Acid Ratio = 0.28

Type of Ash = BITUMINOUS
Fouling Index = 0.44
Slagging Index = 0.16

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

Manager, South Holland Laboratory

Method: ASTM Designation D 3682-87

OVER 90 BRANCH LABORATORIES AND TECHNICAL FACILITIES IN FOREIGN COAL MINING AREAS, TIDEWATER AND GREAT LAKES PORTS, AND RIVER LOADING FACILITIES

TERMS AND CONDITIONS ON REVERSE

Attachment 2

Hazardous Waste Characterization

Laboratory Reports: Lancaster Laboratories

Lancaster Laboratories
Where quality is a science.

10:36:13 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831535
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Zero Headspace Extraction of FS-2/FS-3/FS-4
Barge Canal - Pine St. Burlington, VT

FSZH- SDG# JOH01-09	RESULT AS RECEIVED	LIMIT OF QUANTITATION	LAB CODE
ANALYSIS			
TCLP Volatiles	attached		094839000S*

The reported results for regulated volatiles were corrected for the matrix spike recovery as specified in June 29, 1990 Federal Register, p. 26993.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental
Client Services at (717) 656-2301
214 06556 428.00 081800

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:36:14 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831535
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Zero Headspace Extraction of FS-2/FS-3/FS-4
Barge Canal - Pine St. Burlington, VT

FSZH- SDG# J0H01-09 TCLP Volatiles	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Vinyl Chloride	< 0.050	mg/l	0.050	349200000S
1,1-Dichloroethene	< 0.028	mg/l	0.028	350000000S
Chloroform	< 0.028	mg/l	0.028	350300000S
1,2-Dichloroethane	< 0.030	mg/l	0.030	350400000S
2-Butanone	< 0.78	mg/l	0.78	031600000S
Carbon Tetrachloride	< 0.027	mg/l	0.027	350600000S
Trichloroethene	< 0.028	mg/l	0.028	351100000S
Benzene	0.11	mg/l	0.030	351500000S
Tetrachloroethene	< 0.029	mg/l	0.029	352200000S
Chlorobenzene	< 0.029	mg/l	0.029	352500000S

The volatile organic analyses were performed on a zero headspace toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.

A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the volatile concentrations (mg/l) in the leachate exceed the following maxima:

Benzene	0.5	1,1-Dichloroethene	0.7
Carbon Tetrachloride	0.5	Methyl Ethyl Ketone (2-Butanone)	200.0
Chlorobenzene	100.0	Tetrachloroethene	0.7
Chloroform	6.0	Trichloroethene	0.5
1,2-Dichloroethane	0.5	Vinyl Chloride	0.2

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

Lancaster Laboratories
Where quality is a science.

10:36:01 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831531
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Non-volatile Extraction of FS-2/FS-3/FS-4
Barge Canal - Pine St. Burlington, VT

FSNV- SDG# J0H01-05 ANALYSIS	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
TCLP Acid Base/Neutrals		attached		094972700S*
Arsenic	< 0.7	mg/l	0.7	224503800S*
Barium	1.	mg/l	1.	224602100S*
Cadmium	< 0.05	mg/l	0.05	224902100S*
Chromium	< 0.6	mg/l	0.6	225102100S*
Lead	< 0.6	mg/l	0.6	225502100S*
Mercury	< 0.005	mg/l	0.005	225903800S*
Selenium	< 0.7	mg/l	0.7	226403800S*
Silver	< 0.1	mg/l	0.1	226602100S*

The reported results for metals and regulated semivolatiles were corrected for the matrix spike recovery as specified in June 29, 1990 Federal Register, p. 26993.
The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in the June 29, 1990 Federal Register.
A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards):

Arsenic	5.0	Cadmium	1.0	Lead	5.0	Selenium	1.0
Barium	100.0	Chromium	5.0	Mercury	0.2	Silver	5.0

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301
214 06556 619.00 156500

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:36:03 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831531
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Non-volatile Extraction of FS-2/FS-3/FS-4
Barge Canal - Pine St. Burlington, VT

FSNV- SDG# J0H01-05

TCLP Acid Base/Neutrals	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
pyridine	< 0.043	mg/l	0.043	332400000S
1,4-dichlorobenzene	< 0.034	mg/l	0.034	332500000S
2-methylphenol	< 0.064	mg/l	0.064	332600000S
3 and 4-methylphenol	< 0.087	mg/l	0.087	332700000S
hexachloroethane	< 0.037	mg/l	0.037	332800000S
nitrobenzene	< 0.030	mg/l	0.030	332900000S
hexachlorobutadiene	< 0.055	mg/l	0.055	333000000S
2,4,6-trichlorophenol	< 0.031	mg/l	0.031	333100000S
2,4,5-trichlorophenol	< 0.031	mg/l	0.031	333200000S
2,4-dinitrotoluene	< 0.024	mg/l	0.024	333300000S
hexachlorobenzene	< 0.024	mg/l	0.024	333400000S
pentachlorophenol	< 0.10	mg/l	0.10	333500000S

The semivolatile analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.

A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the semivolatile concentrations (mg/l) in the leachate exceed the following maxima:

Total Cresol	200.0	Nitrobenzene	2.0
1,4-Dichlorobenzene	7.5	Pentachlorophenol	100.0
2,4-Dinitrotoluene	0.13	Pyridine	5.0
Hexachlorobenzene	0.13	2,4,5-Trichlorophenol	400.0
Hexachlorobutadiene	0.5	2,4,6-Trichlorophenol	2.0
Hexachloroethane	3.0		

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Jon S. Kauffman, Ph.D.
Group Leader, GC/MS

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Where quality is a science.

10:36:16 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLT Sample No. TL 1831536
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Zero Headspace Extraction of PS-2/PS-3/PS-4
Barge Canal - Pine St. Burlington, VT

PSZH- SDG# JOH01-10	RESULT AS RECEIVED	LIMIT OF QUANTITATION	LAB CODE
ANALYSIS			
TCLP Volatiles	attached		094839000S*

The reported results for regulated volatiles were corrected for the matrix spike recovery as specified in June 29, 1990 Federal Register, p. 26993.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental
Client Services at (717) 656-2301
214 06556 428.00 081800

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:36:17 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831536
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Zero Headspace Extraction of PS-2/PS-3/PS-4
Barge Canal - Pine St. Burlington, VT

PSZH- SDG# JOH01-10 TCLP Volatiles	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Vinyl Chloride	< 0.051	mg/l	0.051	349200000S
1,1-Dichloroethene	< 0.034	mg/l	0.034	350000000S
Chloroform	< 0.034	mg/l	0.034	350300000S
1,2-Dichloroethane	0.078	mg/l	0.038	350400000S
2-Butanone	< 0.79	mg/l	0.79	031600000S
Carbon Tetrachloride	< 0.031	mg/l	0.031	350600000S
Trichloroethene	< 0.033	mg/l	0.033	351100000S
Benzene	6.7	mg/l	0.064	351500000S
Tetrachloroethene	< 0.035	mg/l	0.035	352200000S
Chlorobenzene	< 0.034	mg/l	0.034	352500000S

The volatile organic analyses were performed on a zero headspace toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.

A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the volatile concentrations (mg/l) in the leachate exceed the following maxima:

Benzene	0.5	1,1-Dichloroethene	0.7
Carbon Tetrachloride	0.5	Methyl Ethyl Ketone (2-Butanone)	200.0
Chlorobenzene	100.0	Tetrachloroethene	0.7
Chloroform	6.0	Trichloroethene	0.5
1,2-Dichloroethane	0.5	Vinyl Chloride	0.2

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

Lancaster Laboratories
Where quality is a science.

10:36:04 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831532
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Non-volatile Extraction of PS-2/PS-3/PS-4
Barge Canal - Pine St. Burlington, VT

PSNV- SDG# JOB01-06 ANALYSIS	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
TCLP Acid Base/Neutrals		attached		094972700S*
Arsenic	< 0.7	mg/l	0.7	224503800S*
Barium	< 1.	mg/l	1.	224602100S*
Cadmium	< 0.06	mg/l	0.06	224902100S*
Chromium	< 0.7	mg/l	0.7	225102100S*
Lead	< 0.6	mg/l	0.6	225502100S*
Mercury	< 0.005	mg/l	0.005	225903800S*
Selenium	< 0.7	mg/l	0.7	226403800S*
Silver	< 0.1	mg/l	0.1	226602100S*

The reported results for metals and regulated semivolatiles were corrected for the matrix spike recovery as specified in June 29, 1990 Federal Register, p. 26993.
The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in the June 29, 1990 Federal Register. A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards):

Arsenic	5.0	Cadmium	1.0	Lead	5.0	Selenium	1.0
Barium	100.0	Chromium	5.0	Mercury	0.2	Silver	5.0

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301
214 06556 619.00 156500

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:36:06 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831532
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Non-volatile Extraction of PS-2/PS-3/PS-4
Barge Canal - Pine St. Burlington, VT

PSNV- SDG# J0H01-06 TCLP Acid Base/Neutrals	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
pyridine	< 0.044	mg/l	0.044	332400000S
1,4-dichlorobenzene	< 0.035	mg/l	0.035	332500000S
2-methylphenol	< 0.050	mg/l	0.050	332600000S
3 and 4-methylphenol	< 0.039	mg/l	0.039	332700000S
hexachloroethane	< 0.043	mg/l	0.043	332800000S
nitrobenzene	< 0.020	mg/l	0.020	332900000S
hexachlorobutadiene	< 0.032	mg/l	0.032	333000000S
2,4,6-trichlorophenol	< 0.025	mg/l	0.025	333100000S
2,4,5-trichlorophenol	< 0.031	mg/l	0.031	333200000S
2,4-dinitrotoluene	< 0.023	mg/l	0.023	333300000S
hexachlorobenzene	< 0.025	mg/l	0.025	333400000S
pentachlorophenol	< 0.10	mg/l	0.10	333500000S

The semivolatile analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.

A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the semivolatile concentrations (mg/l) in the leachate exceed the following maxima:

Total Cresol	200.0	Nitrobenzene	2.0
1,4-Dichlorobenzene	7.5	Pentachlorophenol	100.0
2,4-Dinitrotoluene	0.13	Pyridine	5.0
Hexachlorobenzene	0.13	2,4,5-Trichlorophenol	400.0
Hexachlorobutadiene	0.5	2,4,6-Trichlorophenol	2.0
Hexachloroethane	3.0		

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Jon S. Kauffman, Ph.D.
Group Leader, GC/MS

Lancaster Laboratories
Where quality is a science.

10:36:18 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831537
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Zero Headspace Extraction of CS-1-A,B,C Sed.
Barge Canal - Pine St. Burlington, VT

CS1ZH SDG# J0H01-11	RESULT	LIMIT OF	
ANALYSIS	AS RECEIVED	QUANTITATION	LAB CODE
TCLP Volatiles	attached		094839000S*

The reported results for regulated volatiles were corrected for the matrix spike recovery as specified in June 29, 1990 Federal Register, p. 26993.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301
214 06556 428.00 081800

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:26:19 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831537
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Zero Headspace Extraction of CS-1-A,B,C Sed.
Barge Canal - Pine St. Burlington, VT

CS1ZH SDG# J0H01-11 TCLP Volatiles	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Vinyl Chloride	< 0.061	mg/l	0.061	349200000S
1,1-Dichloroethene	< 0.030	mg/l	0.030	350000000S
Chloroform	< 0.028	mg/l	0.028	350300000S
1,2-Dichloroethane	< 0.031	mg/l	0.031	350400000S
2-Butanone	< 0.74	mg/l	0.74	031600000S
Carbon Tetrachloride	< 0.027	mg/l	0.027	350600000S
Trichloroethene	< 0.028	mg/l	0.028	351100000S
Benzene	0.25	mg/l	0.031	351500000S
Tetrachloroethene	< 0.030	mg/l	0.030	352200000S
Chlorobenzene	< 0.029	mg/l	0.029	352500000S

The volatile organic analyses were performed on a zero headspace toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.

A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the volatile concentrations (mg/l) in the leachate exceed the following maxima:

Benzene	0.5	1,1-Dichloroethene	0.7
Carbon Tetrachloride	0.5	Methyl Ethyl Ketone (2-Butanone)	200.0
Chlorobenzene	100.0	Tetrachloroethene	0.7
Chloroform	6.0	Trichloroethene	0.5
1,2-Dichloroethane	0.5	Vinyl Chloride	0.2

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

Lancaster Laboratories
Where quality is a science.

10:36:07 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831533
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Non-volatile Extraction of CS-1-A,B,C Sed.
Barge Canal - Pine St. Burlington, VT

CS1NV SDG# J0H01-07

ANALYSTS	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
TCLP Acid Base/Neutrals		attached		094972700S*
Arsenic	< 0.7	mg/l	0.7	224503800S*
Barium	1.	mg/l	1.	224602100S*
Cadmium	< 0.06	mg/l	0.06	224902100S*
Chromium	< 0.6	mg/l	0.6	225102100S*
Lead	< 0.6	mg/l	0.6	225502100S*
Mercury	< 0.005	mg/l	0.005	225903800S*
Selenium	< 0.7	mg/l	0.7	226403800S*
Silver	< 0.1	mg/l	0.1	226602100S*

RECEIVED
JUN 29 1992
THE JOHNSON CO., INC.
MONTPELIER, VERMONT

The reported results for metals and regulated semivolatiles were corrected for the matrix spike recovery as specified in June 29, 1990 Federal Register, p. 26993.
The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in the June 29, 1990 Federal Register.
A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards):

Arsenic	5.0	Cadmium	1.0	Lead	5.0	Selenium	1.0
Barium	100.0	Chromium	5.0	Mercury	0.2	Silver	5.0

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656 2301
214 06556 619.00 156500

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:36:09 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831533
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Non-volatile Extraction of CS-1-A,B,C Sed.
Barge Canal - Pine St. Burlington, VT

CSINV SDG# JOH01-07 TCLP Acid Base/Neutrals	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
pyridine	< 0.050	mg/l	0.050	332400000S
1,4-dichlorobenzene	< 0.039	mg/l	0.039	332500000S
2-methylphenol	0.14	mg/l	0.087	332600000S
3 and 4-methylphenol	0.40	mg/l	0.077	332700000S
hexachloroethane	< 0.047	mg/l	0.047	332800000S
nitrobenzene	< 0.023	mg/l	0.023	332900000S
hexachlorobutadiene	< 0.045	mg/l	0.045	333000000S
2,4,6-trichlorophenol	< 0.026	mg/l	0.026	333100000S
2,4,5-trichlorophenol	< 0.030	mg/l	0.030	333200000S
2,4-dinitrotoluene	< 0.024	mg/l	0.024	333300000S
hexachlorobenzene	< 0.029	mg/l	0.029	333400000S
pentachlorophenol	< 0.10	mg/l	0.10	333500000S

The semivolatile analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.

A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the semivolatile concentrations (mg/l) in the leachate exceed the following maxima:

Total Cresol	200.0	Nitrobenzene	2.0
1,4-Dichlorobenzene	7.5	Pentachlorophenol	100.0
2,4-Dinitrotoluene	0.13	Pyridine	5.0
Hexachlorobenzene	0.13	2,4,5-Trichlorophenol	400.0
Hexachlorobutadiene	0.5	2,4,6-Trichlorophenol	2.0
Hexachloroethane	3.0		

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Jon S. Kauffman, Ph.D.
Group Leader, GC/MS

Lancaster Laboratories
Where quality is a science.

10:36:21 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831538
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Zero Headspace Extraction of CS-2-A,B,C-Sed.
Barge Canal - Pine St. Burlington, VT

CS22H SDG# JOH01-12*

ANALYSIS	RESULT AS RECEIVED	LIMIT OF QUANTITATION	LAB CODE
TCLP Volatiles	attached		094839000S*

The reported results for regulated volatiles were corrected for the matrix spike recovery as specified in June 29, 1990 Federal Register, p. 26993.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301
214 06556 428.00 081800

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:36:22 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831538
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Zero Headspace Extraction of CS-2-A,B,C Sed.
Barge Canal - Pine St. Burlington, VT

CS2ZH SDG# J0H01-12* TCLP Volatiles	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Vinyl Chloride	< 0.059	mg/l	0.059	349200000S
1,1-Dichloroethene	< 0.032	mg/l	0.032	350000000S
Chloroform	< 0.028	mg/l	0.028	350300000S
1,2-Dichloroethane	< 0.025	mg/l	0.025	350400000S
2-Butanone	< 0.50	mg/l	0.50	031600000S
Carbon Tetrachloride	< 0.032	mg/l	0.032	350600000S
Trichloroethene	< 0.030	mg/l	0.030	351100000S
Benzene	2.8	mg/l	0.042	351500000S
Tetrachloroethene	< 0.033	mg/l	0.033	352200000S
Chlorobenzene	< 0.029	mg/l	0.029	352500000S

The volatile organic analyses were performed on a zero headspace toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.

A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the volatile concentrations (mg/l) in the leachate exceed the following maxima:

Benzene	0.5	1,1-Dichloroethene	0.7
Carbon Tetrachloride	0.5	Methyl Ethyl Ketone (2-Butanone)	200.0
Chlorobenzene	100.0	Tetrachloroethene	0.7
Chloroform	6.0	Trichloroethene	0.5
1,2-Dichloroethane	0.5	Vinyl Chloride	0.2

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

Lancaster Laboratories
Where quality is a science.

10:36:10 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831534
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected I/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Non-volatile Extraction of CS-2-A,B,C Sed.
Barge Canal - Pine St. Burlington, VT

CS2NV SDG# J0H01-08

ANALYSIS	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
TCLP Acid Base/Neutrals		attached		094972700S*
Arsenic	< 0.7	mg/l	0.7	224503800S*
Barium	< 1.	mg/l	1.	224602100S*
Cadmium	< 0.06	mg/l	0.06	224902100S*
Chromium	< 0.6	mg/l	0.6	225102100S*
Lead	< 0.6	mg/l	0.6	225502100S*
Mercury	< 0.005	mg/l	0.005	225903800S*
Selenium	< 0.7	mg/l	0.7	226403800S*
Silver	< 0.1	mg/l	0.1	226602100S*

The reported results for metals and regulated semivolatiles were corrected for the matrix spike recovery as specified in June 29, 1990 Federal Register, p. 26993.
The metal analyses were performed on a non-volatile leachate prepared according to the procedure specified in the June 29, 1990 Federal Register. A sample is considered to have failed the Toxicity Characteristic (TC) test and is considered a hazardous waste if any of the metal concentrations (mg/l) in the leachate exceed the following maxima (100 times the Primary Drinking Water Standards):

Arsenic	5.0	Cadmium	1.0	Lead	5.0	Selenium	1.0
Barium	100.0	Chromium	5.0	Mercury	0.2	Silver	5.0

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301
214 06556 619.00 156500

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:36:12 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. TL 1831534
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 1/ 0/ 0- 6/16/92 by
Time Collected
P.O. 1-0730-1 (717)
Rel.

TCLP Non-volatile Extraction of CS-2-A,B,C Sed.
Barge Canal - Pine St. Burlington, VT

CS2NV SDG# J0B01-08 TCLP Acid Base/Neutrals	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
pyridine	< 0.11	mg/l	0.11	332400000S
1,4-dichlorobenzene	< 0.086	mg/l	0.086	332500000S
2-methylphenol	< 0.15	mg/l	0.15	332600000S
3 and 4-methylphenol	< 0.19	mg/l	0.19	332700000S
hexachloroethane	< 0.10	mg/l	0.10	332800000S
nitrobenzene	< 0.072	mg/l	0.072	332900000S
hexachlorobutadiene	< 0.12	mg/l	0.12	333000000S
2,4,6-trichlorophenol	< 0.069	mg/l	0.069	333100000S
2,4,5-trichlorophenol	< 0.080	mg/l	0.080	333200000S
2,4-dinitrotoluene	< 0.065	mg/l	0.065	333300000S
hexachlorobenzene	< 0.092	mg/l	0.092	333400000S
pentachlorophenol	< 0.44	mg/l	0.44	333500000S

The semivolatile analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.

A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the semivolatile concentrations (mg/l) in the leachate exceed the following maxima:

Total Cresol	200.0	Nitrobenzene	2.0
1,4-Dichlorobenzene	7.5	Pentachlorophenol	100.0
2,4-Dinitrotoluene	0.13	Pyridine	5.0
Hexachlorobenzene	0.13	2,4,5-Trichlorophenol	400.0
Hexachlorobutadiene	0.5	2,4,6-Trichlorophenol	2.0
Hexachloroethane	3.0		

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Boves
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Jon S. Kauffman, Ph.D.
Group Leader, GC/MS

Attachment 3

Asphalt Batching Plant Characterization

Laboratory Reports: AnalytiKem & Lancaster Laboratories

Lancaster Laboratories
Where quality is a science.

10:35:49 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831527
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/16/92 by RB
Time Collected 1145-1733
P.O. 1-0730-1 (717)
Rel.

FS-2/FS-3/FS-4 Composite Peat Sample
Barge Canal - Pine St. Burlington, VT

FS234 SDG# JOH01-01

ANALYSIS	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Moisture	18.2	% by wt.	0.5	211101700S*

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

Fuel TPH by GC/FID (Soils)	attached		470317300S*

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental
Client Services at (717) 656-2301
214 06556 30.00 022000

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:49 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831527
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/16/92 by RB
Time Collected 1145-1733
P.O. 1-0730-1 (717)
Rel.

FS-2/FS-3/FS-4 Composite Peat Sample
Barge Canal - Pine St. Burlington, VT

FS234 SDG# J0H01-01

ANALYSIS	RESULT DRY WT. BASIS		LIMIT OF QUANTITATION	LAB CODE
Moisture *AS RECEIVED*	18.2	% by wt.	0.5	211117300S*

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

Fuel TPH by GC/FID (Soils) attached 470317300S*

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:51 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831527
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/16/92 by RB
Time Collected 1145-1733
P.O. 1-0730-1 (717)
Rel.

FS-2/FS-3/FS-4 Composite Peat Sample
Barge Canal - Pine St. Burlington, VT

FS234 SDG# JOH01-01 Fuel TPH by GC/FID (Soils)	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Gasoline	< 70.	mg/kg	70.	470400000S
Kerosene	< 400.	mg/kg	400.	470500000S
Diesel/#2 Fuel	< 400.	mg/kg	400.	470600000S

See attached fingerprint comments.

Due to interferences from the sample matrix, the limits of quantitation for the Fuel TPH determinations were increased.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:51 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831527
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/16/92 by RB
Time Collected 1145-1733
P.O. 1-0730-1 (717)
Rel.

FS-2/FS-3/FS-4 Composite Peat Sample
Barge Canal - Pine St. Burlington, VT

FS234 SDG# J0B01-01

	RESULT DRY WT. BASIS		LIMIT OF QUANTITATION	LAB CODE
Fuel TPH by GC/FID (Soils)				
Gasoline	< 90.	mg/kg	90.	470400000S
Kerosene	< 500.	mg/kg	500.	470500000S
Diesel/#2 Fuel	< 500.	mg/kg	500.	470600000S

See attached fingerprint comments.

Due to interferences from the sample matrix, the limits of quantitation for the Fuel TPH determinations were increased.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

Sample: 1831527 Analysis: 4703

The GC Fingerprint for this sample is a pattern of peaks similar to the pattern for our coal tar oil reference standard. However, the sample pattern is not a good match for that of the reference standard. Differences in relative peak intensities and ratios suggest that the coal tar in the sample is weathered. When we calculate this distillate as coal tar oil, it is present at 920 mg/kg in the sample.

The quantitation is presented on an as received basis. Consider it only an approximation due to the poor match of the sample pattern with that of our reference standard.

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:
Delwin E. Schumacher, R.C.

Lancaster Laboratories
Where quality is a science.

10:35:52 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831528
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/16/92 by RB
Time Collected 1315-1850
P.O. 1-0730-1 (717)
Rel.

PS-2/PS-3/PS-4 Composite Peat Sample
Barge Canal - Pine St. Burlington, VT

PS234 SDG# JOH01-02

ANALYSIS	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Moisture	79.5	% by wt.	0.5	211101700S*

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

Fuel TPH by GC/FID (Soils)	attached		470317300S*

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental
Client Services at (717) 656-2301
214 06556 30.00 022000

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:52 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831528
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/16/92 by R
Time Collected 1315-1850
P.O. 1-0730-1 (717)
Rel.

PS-2/PS-3/PS-4 Composite Peat Sample
Barge Canal - Pine St. Burlington, VT

PS234 SDG# J0H01-02 ANALYSIS		RESULT DRY WT. BASIS		LIMIT OF QUANTITATION	LAB CODE
Moisture	*AS RECEIVED*	79.5	% by wt.	0.5	211117300S*

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

Fuel TPH by GC/FID (Soils) attached 470317300S*

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:54 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLT Sample No. SW 1831528
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/16/92 by RB
Time Collected 1315-1850
P.O. 1-0730-1 (717)
Rel.

PS-2/PS-3/PS-4 Composite Peat Sample
Barge Canal - Pine St. Burlington, VT

PS234 SDG# J0H01-02 Fuel TPH by GC/FID (Soils)	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Gasoline	< 70.	mg/kg	70.	470400000S
Kerosene	< 400.	mg/kg	400.	470500000S
Diesel/#2 Fuel	< 400.	mg/kg	400.	470600000S

See attached fingerprint comments.

Due to interferences from the sample matrix, the limits of quantitation for the Fuel TPH determinations were increased.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:54 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLT Sample No. SW 1831528
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/16/92 by RB
Time Collected 1315-1850
P.O. 1-0730-1 (717)
Rel.

PS-2/PS-3/PS-4 Composite Peat Sample
Barge Canal - Pine St. Burlington, VT

PS234 SDG# JOH01-02 Fuel TPH by GC/FID (Soils)	RESULT DRY WT. BASIS		LIMIT OF QUANTITATION	LAB CODE
Gasoline	< 300.	mg/kg	300.	470400000S
Kerosene	< 2,000.	mg/kg	2,000.	470500000S
Diesel/#2 Fuel	< 2,000.	mg/kg	2,000.	470600000S

See attached fingerprint comments.

Due to interferences from the sample matrix, the limits of quantitation for the Fuel TPH determinations were increased.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

Sample: 1831528 Analysis: 4703

The GC Fingerprint for this sample is a pattern of peaks similar to the pattern for our coal tar oil reference standard. However, the sample pattern is not a good match for that of the reference standard. Differences in relative peak intensities and ratios suggest that the coal tar in the sample is weathered. When we calculate this distillate as coal tar oil, it is present at 9100 mg/kg in the sample.

The quantitation is presented on an as received basis. Consider it only an approximation due to the poor match of the sample pattern with that of our reference standard.

Questions?? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:
Delwyn K. Schumacher, B.S.

Lancaster Laboratories
Where quality is a science.

10:35:55 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831529
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/15/92 by RB
Time Collected 1240-1510
P.O. 1-0730-1 (717)
Rel.

CS-1-A/CS-1-B/CS-1-C Composite Sediment Sample
Barge Canal - Pine St. Burlington, VT

CS1-- SDG# J0501-03

ANALYSIS	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Moisture	73.1	% by wt.	0.5	211101700S*

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

Fuel TPH by GC/PID (Soils)	attached		470317300S*

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental
Client Services at (717) 656-2301
214 06556 30.00 022000

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:55 342/32
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831529
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/15/92 by RB
Time Collected 1240-1510
P.O. 1-0730-1 (717)
Rel.

CS-1-A/CS-1-B/CS-1-C Composite Sediment Sample
Barge Canal - Pine St. Burlington, VT

CS1-- SDG# JGH01-03

ANALYSIS	RESULT DRY WT. BASIS		LIMIT OF QUANTITATION	LAB CODE
Moisture *AS RECEIVED*	73.1	% by wt.	0.5	211117300S*

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

Fuel TPH by GC/FID (Soils) attached 470317300S*

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:57 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831529
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/15/92 by RB
Time Collected 1240-1510
P.O. 1-0730-1 (717)
Rel.

CS-1-A/CS-1-B/CS-1-C Composite Sediment Sample
Barge Canal - Pine St. Burlington, VT

CS1-- SDG# JOH01-03 Fuel TPH by GC/FID (Soils)	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Gasoline	< 700.	mg/kg	700.	470400000S
Kerosene	< 4,000.	mg/kg	4,000.	470500000S
Diesel/#2 Fuel	< 4,000.	mg/kg	4,000.	470600000S

See attached fingerprint comments.

Due to interferences from the sample matrix, the limits of quantitation for the Fuel TPH determinations were increased.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:57 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831529
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/15/92- 6/15/92 by RB
Time Collected 1240-1510
P.O. 1-0730-1 (717)
Rel.

CS-1-A/CS-1-B/CS 1-C Composite Sediment Sample
Barge Canal - Pine St. Burlington, VT

CS1-- SDG# J0B01-03	RESULT		LIMIT OF	
Fuel TPH by GC/FID (Soils)	DRY WT. BASIS		QUANTITATION	LAB CODE
Gasoline	< 3,000.	mg/kg	3,000.	470400000S
Kerosene	< 10,000.	mg/kg	10,000.	470500000S
Diesel/#2 Fuel	< 10,000.	mg/kg	10,000.	470600000S

See attached fingerprint comments.

Due to interferences from the sample matrix, the limits of quantitation for the Fuel TPH determinations were increased.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

Sample: 1831529 Analysis: 4703

The GC Fingerprint for this sample is a pattern of peaks similar to the pattern for our coal tar oil reference standard. However, the sample pattern is not a good match for that of the reference standard. Differences in relative peak intensities and ratios suggest that the coal tar in the sample is weathered. When we calculate this distillate as coal tar oil, it is present at 37,000 mg/kg in the sample.

The quantitation is presented on an as received basis. Consider it only an approximation due to the poor match of the sample pattern with that of our reference standard.

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:
Delwyn K. Schumacher, B.S.

Lancaster Laboratories
Where quality is a science.

10:35:58 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831530
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/16/92- 6/16/92 by RB
Time Collected 1535-1445
P.O. 1-0730-1 (717)
Rel.

CS-2-A/CS-2-B/CS-2-C Composite Sediment Sample
Barge Canal - Pine St. Burlington, VT

CS2-- SDG# J0B01-04 ANALYSIS	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Moisture	64.5	% by wt.	0.5	211101/00S*
"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.				
Fuel TPH by GC/FID (Soils)		attached		470317300S*

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301
214 06556 30.00 022000

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:58 342/32
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831530
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/16/92- 6/16/92 by RE
Time Collected 1535-1445
P.O. 1-0730-1 (717)
Rel.

CS-2-A/CS-2-B/CS-2-C Composite Sediment Sample
Barge Canal - Pine St. Burlington, VT

CS2-- SDG# JOH01-04

ANALYSIS	RESULT DRY WT. BASIS		LIMIT OF QUANTITATION	LAB CODE
Moisture *AS RECEIVED*	64.5	% by wt.	0.5	2111173008*

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

Fuel TPH by GC/PID (Soils) attached 4703173008*

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:59 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LLI Sample No. SW 1831530
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/16/92- 6/16/92 by RB
Time Collected 1535-1445
P.O. 1-0730-1 (717)
Rel.

CS-2-A/CS-2-B/CS-2-C Composite Sediment Sample
Barge Canal - Pine St. Burlington, VT

CS2-- SDG# J0B01-04 Fuel TPH by GC/FID (Soils)	RESULT AS RECEIVED		LIMIT OF QUANTITATION	LAB CODE
Gasoline	< 70.	mg/kg	70.	470400000S
Kerosene	< 400.	mg/kg	400.	470500000S
Diesel/#2 Fuel	< 400.	mg/kg	400.	470600000S

See attached fingerprint comments.

Due to interferences from the sample matrix, the limits of quantitation for the Fuel TPH determinations were increased.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

10:35:59 342732
ASR000 D 2 12
06556 0

The Johnson Company, Inc.
5 State Street
Montpelier, VT 05602

LL1 Sample No. SW 1831530
Date Reported 6/26/92
Date Submitted 6/18/92
Discard Date 7/11/92
Collected 6/16/92- 6/16/92 by RB
Time Collected 1535-1445
P.O. 1-0730-1 (717)
Rel.

CS-2-A/CS-2-B/CS-2-C Composite Sediment Sample
Barge Canal - Pine St. Burlington, VT

CS2-- SDG# JOH01-04 Fuel TPH by GC/FID (Soils)	RESULT DRY WT. BASIS		LIMIT OF QUANTITATION	LAB CODE
Gasoline	< 200.	mg/kg	200.	470400000S
Kerosene	< 1,000.	mg/kg	1,000.	470500000S
Diesel/#2 Fuel	< 1,000.	mg/kg	1,000.	470600000S

See attached fingerprint comments.

Due to interferences from the sample matrix, the limits of quantitation for the Fuel TPH determinations were increased.

1 COPY TO The Johnson Company, Inc. ATTN: Mr. James R. Bowes
1 COPY TO Data Package Group

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:

Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

Lancaster Laboratories
Where quality is a science.

Sample: 1831530 Analysis: 4703

The GC Fingerprint for this sample is a pattern of peaks similar to the pattern for our coal tar oil reference standard. However, the sample pattern is not a good match for that of the reference standard. Differences in relative peak intensities and ratios suggest that the coal tar in the sample is weathered. When we calculate this distillate as coal tar oil, it is present at 10,000 mg/kg in the sample.

The quantitation is presented on an as received basis. Consider it only an approximation due to the poor match of the sample pattern with that of our reference standard.

Questions? Contact Environmental Client Services at (717) 656-2301

Respectfully Submitted
Lancaster Laboratories, Inc.
Reviewed and Approved by:
Delwyn K. Schumacher, B.S.

AnalytiKEM An American NuKEM Company

AnalytiKEM Inc.
28 Springdale Road
Cherry Hill, NJ 08003
609/751-1122
1-800-TRY-LAB1
Fax: 609/751-0824

TEST REPORT NO. A27751

June 25, 1992

Prepared for:

The Johnson Company
5 State Street
Montpelier, VT 05602

Attention: Hugo Martinez

Project: Barge Canal 1-0730-1(717)

Reviewed &
Approved by:

Name: Carmine M. Fioriglio

Title: QA/QC Manager

TABLE OF CONTENTS

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AnalytiKEM

I. Certification

AnalytiKEM, Inc.
Current Certifications/Regulatory Approvals

Tabulated below are the current laboratory certifications that are held by each AnalytiKEM Laboratory. Analyses performed at multiple AnalytiKEM locations will be noted in the test report.

Cherry Hill, NJ		Rock Hill, SC		Houston Analytical, Tx	
State	Cert #	State	Cert #	State	Cert #
Arkansas	*	S. Carolina	46067	N. Dakota	R-006
Connecticut	PH-0715	N. Carolina	316	Oklahoma	8403
Florida	880985G	New Jersey	79795	Texas Water Commission	*
Massachusetts	NJ117			Louisiana	*
New Jersey	04012				
New York	10815				
N. Carolina	258				
N. Dakota	R-038				
Pennsylvania	68366				
S. Carolina	94004				
Tennessee	02908				
Vermont	*				

* No certification numbers are issued for these states.

II Definition of Terms

AnalytiKEM

Term	Definition
D	Detected; result must be greater than zero.
DI	Deionized Water
J	Compound was detected at levels below the practical quantitation limit. The level reported is approximate.
MS/MSD	Matrix Spike/Matrix Spike Duplicate.
NA	Analysis not applicable to the sample matrix.
ND	Not Detected
NR	Not Requested
NTU	Nephelometric Turbidity Units
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
U	Compound was analyzed for but not detected. The preceding number is the practical quantitation limit for the compound.
ppb	Parts-per-billion; may be converted to ppm by dividing by 1,000.
ppm	Parts-per-million; may be converted to ppb by multiplying by 1,000.
ug/l	Micrograms of constituent per liter of sample; equivalent to parts-per-billion.
ug/kg	Micrograms of constituent per kilogram of sample; equivalent to parts-per-billion.
ug/kg dw	Micrograms of constituent per kilogram of sample reported on a dry weight basis.
CCC	Calibration Check Compound; used to verify the precision of a GC/MS calibration curve.
SPCC	System Performance Check Compound; used to verify the correct operation of a GC/MS instrument.
PQL	Practical Quantitation Limit; the minimum level at which compounds can be dependably quantitated.
B	Analyte detected in associated blank as well as the sample. It indicates possible/probable blank contamination.

III. Sample Designations

AnalytiKEM

AnalytiKEM Designation	Client Designation	Matrix	Date Sampled
A27751-1	CS-1-A		
A27751-2	CS-1-B		
A27751-3	CS-1-C		
A27761-4	CS-2-A		
A27751-5	CS-2-B		
A27751-6	CS-2-C		
A27751-7	PS-3		
A27751-8	FS-3		
A27751-9	PS-2		
A27751-10	FS-2		
A27751-11	PS-4		
A27751-12	FS-4		

Composite Description

A27751-13		A27751-15	
Composite #1		Composite #3	
A27751-8	FS-3	A27751-1	CS-1-A
A27751-10	FS-2	A27751-2	CS-1-B
A27751-12	FS-4	A27751-3	CS-1-C
A27751-14		A27751-16	
Composite #2		Composite #4	
A27751-7	PS-3	A27751-4	CS-2-A
A27751-9	PS-2	A27751-5	CS-2-B
A27751-11	PS-4	A27751-6	CS-2-C

Note: Samples will be held for 30 days beyond the test report date unless otherwise requested.

IV. Methodology

AnalytiKEM

General Chemistry

Section 7.3.3.2, Test Method to Determine Hydrogen Cyanide Released from Wastes (Interim Guidance for Reactive Cyanide), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, Third Edition, USEPA, Revison 1 November 1990.

Section 7.3.4.2, Test Method to Determine Hydrogen Sulfide Released from Wastes (Interim Guidance for Reactive Sulfide), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, Third Edition, USEPA, Revison 1 November 1990.

Method 160.3, Total Solids (Dried at 103-105 degrees C), Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, USEPA, 1979.

V. Laboratory Chronicle

AnalytiKEM

	DATE I	DATE II
Sampling Date	6/15 & 16/92	
Receipt/Refrigeration	6/18/92	

Analyses

Reactivity - Sulfide	6/18/92	
Reactivity Cyanide	6/18/92	
Total Solids	6/22/92	

Laboratory Manager Review & Approval
(Signature)
(Printed Name) Gregory A. Pruna
(Date) 6/26/92

NOTE: If fractions are reextracted and reanalyzed because the initial endeavors failed to meet the required quality control criteria, the dates of reextraction and/or reanalysis will be entered in column II additionally.

VII. Nonconformance Summary

AnalytiKEM

No Nonconformances were found.

VIII. Analytical Results

AnalytiKEM

General Chemistry

Sample Designation

Parameter	Method Blank	A27751-13 Composite #1	A27751-14 Composite #2
Reactivity - Sulfide	50,000 U	61,000 U	150,000 U
Reactivity - Cyanide	50,000 U	61,000 U	150,000 U
Total Solids	0.1 U	82	34
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

Sample Designation

Parameter	Method Blank	A27751-15 Composite #3	A27751-16 Composite #4
Reactivity - Sulfide	50,000 U	190,000 U	220,000 U
Reactivity - Cyanide	50,000 U	190,000 U	220,000 U
Total Solids	0.1 U	26	23
Units	(ug/kg)	(ug/kg dw)	(ug/kg dw)

AnalytiKEM An American NuKEM Company

28 Springdale Road
Cherry Hill, New Jersey 08003
(609) 751-1122 • (215) 923-2068
Fax: (609) 751-0921

Chain-of-Custody

454 South Anderson Road BTC 539
Rock Hill, South Carolina 29730
(803) 329-9090
Fax: (803) 329-9689

Client: The Johnson Co. Inc.

Project: Barge Canal 1-0730-1 (717)

AnalytiKEM Contact: Jim Barnes / EVELYN

SAMPLE DESIGNATION	DATE	MATRIX	40 ml vials	950 ml Org. Pres.	500 ml Unpres.	120 ml Unpres.	ml HNO_3	ml H_2SO_4	ml H_2SO_4	ml NaOH			PARAMETERS
1 CS-1-A	6/15/92	SEDIMENT			✓	✓							PARTICLE SIZE / Reactive CN
2 CS-1-B	"	"			✓	✓							" "
3 CS-1-C	"	"			✓	✓							" "
4 CS-2-A	6/16/92	"			✓	✓							PARTICLE SIZE
5 CS-2-B	6/16/92	"			✓	✓							REACTIVE SULFIDE / CYANIDE
6 CS-2-C	6/16/92	"			✓	✓							" " "
													" " "
													" " "

1. Field Measurements:

Data Sheets: Y N

Filtered: Y (Not Required)

II. Field Conditions/Comments: Johnson Co. CUSTODY TAPE # 973

III. Special Instructions: SEE ATTACHED TABLE FOR COMPOSITE SAMPLES
(Detection Limits, Data Package, etc.)

Relinquished By:	Time/Date:	Received By:	Time/Date:
Tanner Barnes	6/17/92 14:00		
FED EX	6/18/92 1000	[illegible]	6/18/92 1000

AnalytiKEM An American NuKEM Company

28 Springdale Road
Cherry Hill, New Jersey 08003
(609) 751-1122 • (215) 923-2068
Fax: (609) 751-0824

Chain-of-Custody

454 South Anderson Road STE 5
Rock Hill, South Carolina 29730
(803) 329-9690
Fax: (803) 329-9689

Client: The Johnson Co.

Project: Barge Canal 1-0730-1 (717)

AnalytiKEM Contact: EVELYN

SAMPLE DESIGNATION	DATE	MATRIX	40 ml vials	950 ml Org. Pres.	120 ml Unpres.	500 ml Unpres.	ml HNO_3	ml H_2SO_4	ml H_2SO_4	ml NaOH	HASOW JAR	PARAMETERS
PS-3	6/15/92	Peat			✓	✓						REACTIVE CYANIDE/SULFIDE; PAR
FS-3	6/15/92	Fill			✓	✓						Reactive cyanide/sulfide; Particle
PS-2	6/15/92	Peat			✓	✓						Reactive cyanide/sulfide; Particle Si
FS-2	6/15/92	Fill			✓	✓						Reactive cyanide/sulfide; Particle
PS-4	6/16/92	Peat			✓	✓						Reactive cyanide/sulfide; Particle Si
FS-4	6/16/92	Fill			✓	~~✓~~				① ✓		Reactive cyanide/sulfide; Particle

I. Field Measurements:

Data Sheets: Y N

Filtered: Y (No Required)

II. Field Conditions/Comments: ① FROM THIS SAMPLE, PLEASE UTILIZE A REPRESENTATIVE VOLUME THAT IS EQUAL TO THE OTHER SAMPLES, FOR COMPOSITING INFORMATION PLEASE SEE ATTACHED TABLE INCLUDED WITH C.O.C. THAT WAS PACKED IN CONTAINER THAT HAS "CS" S

III. Special Instructions: (Detection Limits, Data Package, etc.) ② SEALED W/ JOHNSON CO. CUSTODY TAPE # 747

Relinquished By:	Time/Date:	Received By:	Time/Date:
Terry R. Bowes	1400 / 6/17/92		
[illegible]	6/18/92 1000	[illegible]	6/18/92 1000

Work continued from Page ___ BOOK NO.

Sample	ID	tray wt	Wet wt	dry wt	% solid
27749-1	49	1.60	~~9.04~~ 5.71	5.53	96
-1dup	48	1.58	4.90	4.76	96
-8	47	1.60	4.59	4.54	98
-14	46	1.57	28.41	28.18	99
-15	45	1.60	13.82	10.35	72
-16	44	1.52	12.84	11.52	88
-17	43	1.53	15.22	14.37	94
~~-18~~					
27763-1	42	1.59	13.21	3.42	16
-2	41	1.60	9.95	4.47	34
-3	8	1.57	19.94	11.29	53
Blank	50	1.60	21.15	1.60	0.1 m
		6-19-92 R Marino			
Blank	0	1.59	10.06	1.60	0.1 m
27751-~~13~~	A	1.59	5.02	4.40	82
14	B	1.61	4.17	2.49	34
15	C	1.61	7.18	3.08	26
16	D	1.57	4.18	2.18	23

6/22/92

Work continued to Page ___

SIGNATURE DATE

DISCLOSED TO AND UNDERSTOOD BY DATE WITNESS DATE 6/23/92

TITLE

PROJECT NO.

BOOK NO.

131

Reacts Set-it

Sample	Amt	FV	DF	KI/I_2	S_2O_3	PPB	Comment
Blank		100		10.00	8.85	50,000u	
7733-1	10.98				9.05		
-1dup	11.10				9.50		
7751-13	10.98				10.00		
-A	10.51				9.85		
-15	10.96				10.05		
-16	10.00				10.15		
	6-18-92 R				6-19-92 R		
		KI/I_2 = 0.025N					
		S_2O_3 = 0.025N					
Blank		100	~~100~~	1000	10.00		
82384-1	8.28						
-1dup	7.98						
	6-24-92 R				6-25-92 R		

STRATHMORE BINDERY PRODUCTS CHICAGO

SIGNATURE

DATE

DISCLOSED TO AND UNDERSTOOD BY

DATE

WITNESS

DATE 6/22/92

SUMMARY OF LABORATORY TEST DATA

SAMPLE IDENTIFICATION				GRAIN SIZE DISTRIBUTION				PLASTICITY						VOLUMETRIC ANALYSIS			COMPACTION						SHEAR STRENGTH			CONSOLIDATION			
SAMPLE NUMBER	DEPTH (FT.)	ELEVATION (FT.)	SOIL GROUP (SYSTEM)	GRAVEL (%)	SAND (%)	SILT (%)	CLAY & COLLOIDS (%)	LIQUID LIMIT - w_L (%)	PLASTIC LIMIT - w_P (%)	PLASTICITY INDEX - I_P (%)	LIQUIDITY INDEX - I_L	SPECIFIC GRAVITY - G	MOISTURE CONTENT - w (%)	DRY UNIT WEIGHT - γ_d (PCF)	VOID RATIO - e	DEGREE OF SATURATION - S_r (%)	MAXIMUM DRY DENSITY (PCF)	OPTIMUM MOISTURE CONTENT (%)				TYPE OF TEST	ANGLE OF INTERNAL FRICTION - ϕ (DEGREES)	COHESION - c (TSF)	UNCONFINED COMPRESSIVE STRENGTH - q_u (TSF)	OVERBURDEN STRESS - p_o (TSF)	PRECONSOLIDATION STRESS - p_c (TSF)	COMPRESSION INDEX - C_c	SWELLING INDEX - C_s
S-13				9	54	37																							
S-14				25	48	27																							
S-15				1	15	84																							
S-16				–	25	75																							

† ASSUMED VALUE
♦ REMOLDED SPECIMEN

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DRAWN: MOD DATE: 6-23-92
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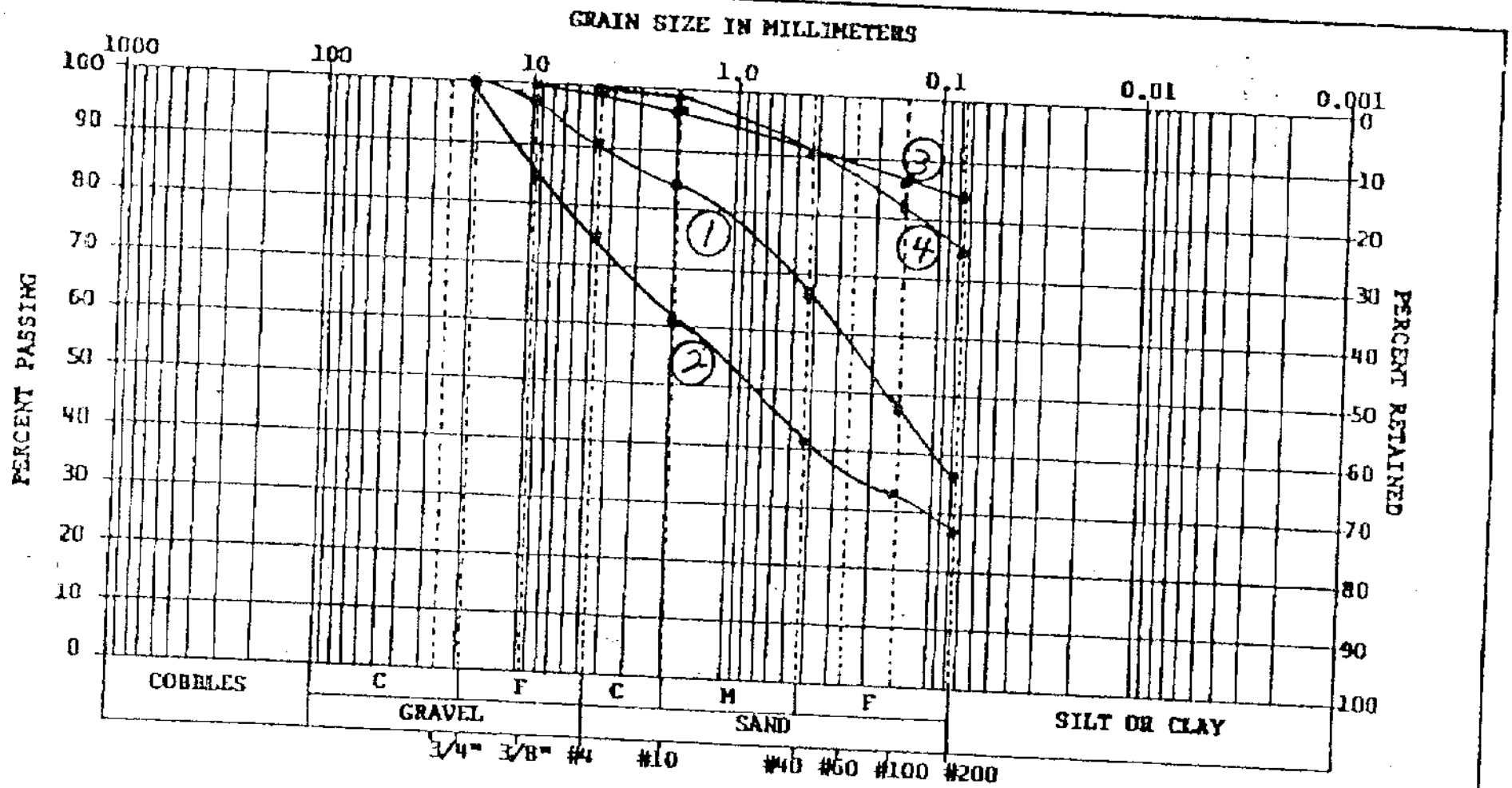
E 003



BORING	SAMPLE	DEPTH	CURVE	CLASSIFICATION	USC	w_L	I_p
27751	S-13		1	BROWN SILTY F/M/C SAND TRACE OF GRAVEL			
	S-14		2	BROWN M/F/C SAND SOME SILT SOME GRAVEL			
	S-15		3	GRAY SILT SOME F/M/C SAND TRACE GRAVEL			
	S-16		4	GRAY SILT SOME F/M/C SAND			

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GRADATION CURVES
UNIFIED SOIL CLASSIFICATION

PROJECT
LOCATION
FILE NO. 2164770.5 DATE 6-23-92 PLATE NO.