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KENNETH A. REICH
COUNSEL

March 25, 1987

Superfund Records Center
SITE: CANNONS
BREAK: 11.9
OTHER: 639839

Gregory A. Roscoe
United States Environmental
Protection Agency
P.O. 3254
Reston, VA 22090

Re: Cannons Engineering Corp. Sites/Recycling Industries, Inc.

Dear Mr. Roscoe:

The attached several miscellaneous documents were contained in a file of documents related to an attempt by Recycling Industries, Inc. to purchase the assets of Cannons Engineering Corp., which purchase we understand never was effectuated. Although the documents contain no transaction information, we are producing them because they might be considered responsive to EPA's information request. However, the documents are not the business records of Recycling Industries, Inc. or Chemical Waste Management, Inc. and Chemical Waste Management, Inc. does not vouch for their authenticity or accuracy.

The documents include a report entitled "Technical Report Prepared for Cannons Engineering Corporation, Case #13756", some miscellaneous test results and a one page document dated December 9, 1980 on Cannons Engineering Corporation stationery reflecting waste storage by location for the Bridgewater and Plymouth, Massachusetts sites.

Sincerely,

Kenneth A. Reich

Kenneth A. Reich

kar/pv
Enclosure
cc: E. Michael Thomas, Esquire

SEMS DocID 639839

MAR 27 1987

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TECHNICAL REPORT
prepared for

CANNONS ENGINEERING CORPORATION

CASE NO. 13756

skinner & sherman laboratories inc.
New England Laboratories
300 SECOND AVENUE, WALTHAM, MASSACHUSETTS 02254 • 617-890-72

TECHNICAL REPORT

04 November 1980

CLIENT: Cannons Engineering Corporation
First Street
Bridgewater, MA 02324

Attention: Mr. Tony Salina

CASE NO: 13756

REFERENCE: Per Request of Dr. Kathleen Swallow

PROJECT DESCRIPTION:

Analysis of four (4) waste samples.

SAMPLE IDENTIFICATION:

Four (4) bottles of waste, identified as follows:

1 of 4 - Tank 1A Plymouth.
2 of 4 - Tank 1B Plymouth.
3 of 4 - Tank 2 Plymouth.
4 of 4 - Tank 2 Plymouth.

Samples received 08 September 1980.

METHOD OF TEST:

Emission Spectrographic Analysis
Parr Bomb Ignition - Total Halogens

Each sample was shaken and transferred to a centrifuge tube. After one hour the samples were examined for evidence of stratification. The samples were then centrifuged and examined again.

Composites of samples 1 and 2 and of samples 3 and 4 were prepared. Determination of total halogens and semi-quantitative emission spectrographic analysis were performed on the composite samples.

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New England Laboratories
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04 November 1980

CLIENT: Cannons Engineering Corporation

CASE NO: 13756

RESULTS:

The samples exhibited no stratification after being allowed to settle one hour. After centrifuging, each sample separated into three layers: a dark oily top layer, a dark brown aqueous middle layer and a bottom layer of grayish-brown sediment. The results are summarized below.

	Percent by volume		
	Oily layer (top layer)	Dark brown aqueous layer (middle layer)	Sediment (bottom layer)
Plymouth Tank 1A (sample 1 of 4)	10	86	4
Plymouth Tank 1B (sample 2 of 4)	5	91	4
Plymouth Tank 2 (sample 3 of 4)	20	65	15
Plymouth Tank 2 (sample 4 of 4)	50	30	20

Emission Spectrographic Analysis (as Received, Range %)

	Composite 1 & 2	Composite 3 & 4
Aluminum	0.007 - 0.07	0.013 - 0.13
Barium	----	0.000000 - 0.000004
Boron	0.002 - 0.02	0.004 - 0.04
Calcium	0.02 - 0.2	0.04 - 0.4
Chromium	0.000000 - 0.000002	0.00004 - 0.0004

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New England Laboratories

300 SECOND AVENUE, WALTHAM, MASSACHUSETTS 02254 • 617-890-720

TECHNICAL REPORT

04 November 1980

CLIENT: Cannons Engineering Corporation

CASE NO: 13756

	Composite 1 & 2	Composite 3 & 4
Copper	0.0002 - 0.002	0.004 - 0.04
Iron	0.2 - 2.0	0.4 - 4.0
Lead	0.02 - 0.2	0.04 - 0.4
Magnesium	0.2 - 2.0	0.4 - 4.0
Manganese	0.002 - 0.02	0.004 - 0.04
Nickel	0.0002 - 0.002	0.0004 - 0.004
Phosphorus	0.007 - 0.07	0.013 - 0.13
Silicon	0.007 - 0.07	0.013 - 0.13
Sodium	0.2 - 2.0	0.4 - 4.0
Tin	0.002 - 0.02	0.013 - 0.13
Titanium	0.002 - 0.02	0.004 - 0.04
Vanadium	0.0002 - 0.002	0.04 - 0.4
Zinc	0.02 - 0.2	0.013 - 0.13
Ash content, % by weight	2.31	4.23
Total halogens (as Cl), % by weight	1.43	1.93

Respectfully submitted,

SKINNER & SHERMAN LABORATORIES, INC.

Daniel Wetmore

Daniel Wetmore
Chemist

DW/ls

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skinner & sherman laboratories inc.

New England Laboratories

300 SECOND AVENUE, WALTHAM, MASSACHUSETTS 02254 • 617-890

Table I

A. Feedstock Testing Results on Tanks 9, 10, 11, and 12 Relative to Test Burn 8/1/80

...k #	Amount	Generator	Elemental Analysis C	O	H	Ash	BTU	Chlorinated Hydrocarbons	Cu (copper)	Be (Beryllium)	Hg (Mercury)
	9612 gal.	Ciba-Geigy + Bostick	–	–	–	–	–	546 ppm (total halogen)			
	5891 gal.	Permuthane	57.30%	18.39%	9.75%	2.28%	11,988/lb	none detected (volatile) 480 ppm (total halogen)	n.d.	n.d.	–
	8600 gal.	Xidex	58.08%	23.38%	10.79%	0.11%	9,774/lb	0.22%	1.7ppm	<.2ppm	0.09ppm
2.	8926 gal.	Ciba-Geigy	–	–	–		13,807/lb.	0.24% 9298 ppm (total halogen)	38.7ppm	<.2ppm	0.95ppm

over

9. Results of Test Burn ... 8/1/80 : Emission Samples

		CO	CO_2	N_2	O_2	H_2O	others
Test I - Tank 10 (Permuthane) only two samples taken	A.)	n.d.	5.56%	73.6%	12.8%	8.0%	< 1ppm
	B.)	n.d.	5.51%	72.6%	12.5%	9.4%	< 1ppm
Test II - Tank 10 (Permuthane) mixed with Tank 11 (Xidex) approx. 1:1		n.d.	11.6%	65.6%	19.4%	3.3%	< 1ppm
		(N.B. These results are suspect due to impossibly high total oxygen. Because of known sampling error results are void)					
Test III - Tank 10 (Permuthane) mixed with Tank 11 (Xidex) with Tank 9 (aq) overpass (Boshick plus Ciba-Geigy)		n.d.	6.92%	76.6%	14.3%	2.28%	60ppm butane 20ppm pente <1ppm all other

Table II

Testing Results on Tank Farm

Tank #	Amount (approx.)	Generator	Total Halogen (as Cl^-)	Metals >100ppm	BTU	Flash Point
1 (aq)		tank cleanings mixed	.45%	B, Fe, Mg, Mn, K, Na, Sn, Zn, (Pb .01-.1%)	15,640	<70°F
2 (org)	5000 gal	mixed (5)	.39%	B, Ca, Mg, Fe, Na, Ti, V, (Pb .01-.1%)	11,137	<70°F
(aq)	5000 gal	↓	.59%	B, Ca, Cu, Fe, Mg, P, K, Na, Sn, Zn, (Pb .09-.9%)		<70°F
3 (org)	3000 gal	mixed (2)	.44%	B, Fe, Na	6810/16	<70°F
(aq)	6900 gal	↓	.33%	B, Ca, Fe, Mg, Na		<70°F
4 (aq)	10,000 gal	mixed (4)	.30%	B, Ca, Fe, Na, Sn (Pb .0012-.012%)	11,240	<70°F
5 (aq)	10,000 gal	mixed (4)	.10%	B, Fe, Mg, Na (Pb .01-.1%)	8456	<70°F
6 (org)	3500 gal	mixed (2)	.65%	Fe, Ca Pb (.0015-.015)	14,763	<70°F
(aq)	6400 gal	↓	.22%	B, Na		<70°F
7 (org)	4500 gal	American Cyanamid			12,309	<70°F
(aq)	5500 gal	↓				7150°F
* 8 (org)	4000 gal	mixed (2)	.22%	Ca, Mg, P, Na, Sn, V, Zn, Pb (.002-.02%)	17,530	<70°F
(aq)	5600 gal	↓	.23%	Mg, Na, Zn (Pb .0014-.014%)		<70°F
* 9 (org)	4500 gal	mixed (2)	.39%	Ca, Fe, Mg, V, Zn	15,170	<70°F
(aq)	5100 gal	↓	.05%	Ca, Zn, Na		<70°F
14 (org)		mixed (3)	.59%	B, Fe, V, Zn	17,078	<70°F
(aq)		↓	.41%	B, Fe, Mg, Mn, K, Na, Sn, V, Zn (Pb .004-.04%)		72°F

* resubmitted for GC/Mass Spec for halogenated hydrocarbons

8 (org) .25%

9 (org) n.d.

interstate laboratories, inc.

Testing Results on Tank Farm

I. Emission Spectra
(Only metals with concentrations greater than 100 ppm reported here)

Tank	Metal	Aqueous	Organic
1	B	.1-1%	
	Fe	.1-1	
	Pb	.01-.1	
	Mg	.001-.01	
	Mn	.001-.01	
	K	.003-.03	
	Na	.01-.1	
	Sn	.001-.01	
	Zn	.1-1	
2	B	.09-.9	.044-.44
	Ca	.027-.27	.044-.44
	Cu		.0027-.027
	Fe	.09-.9	.044-.44
	Pb	.09-.9	.013-.13
	Mg	.009-.09	.044-.44
	P	.0027-.027	
	K	.0027-.027	
	Na	.027-.27	.04-.4
	Sn	.0027-.027	
	Zn	.009-.09	
	Ti		.004-.04
	V		.004-.04
3	B	.018-.18	.044-.44
	Ca	.0018-.018	
	Fe	.018-.18	.017-.17
	Mg	.0018-.018	
	Na	.018-.18	.017-.17
4	B	.039-.39	
	Ca	.0039-.039	
	Fe	.039-.39	
	Pb	.0012-.012	
	Na	.0039-.039	
	Sn	.0012-.012	
5	B	.033-.33	
	Fe	.0033-.033	
	Pb	.0099-.099	
	Mg	.003-.03	
	Na	.3-3	

interstate laboratories, inc.

Emission Spectra (cont.)

Tank	Metal	Aqueous	Organic
6	B	.053-.53	
	Na	.053-.53	
	Pb		.0015-.015
	Fe		.0015-.015
	Ca		.005-.05
8	Mg	.0014-.014	.018-.18
	Na	.048-.48	.0018-.018
	Pb	.0014-.014	.0018-.018
	Zn	.048-.48	.018-.18
	Ca		.005-.05
	P		.018-.18
	Sn		.0018-.018
	V		.0054-.054
9	Ca	.001-.01	.0012-.012
	Na	.01-.1	
	Zn	.01-.1	.004-.04
	Fe		.004-.04
	Mg		.004-.04
	V		.0012-.012
	Pb		.0004-.004
10	Al		.002-.02
	Ca		.006-.6
	Cr		.002-.02
	Fe		.02-.2
	Pb		.02-.2
	Mn		.002-.02
	Si		.006-.06
	Na		.06-.6
	Sn		.006-.06
	Ti		.02-.2
	Zn		.02-.2
14	B	.14-1.4	.005-.05
	Fe	.0014-.014	.005-.05
	Pb	.0042-.042	.0005-.005
	V	.0014-.014	.0015-.015
	Zn	.0014-.014	.005-.05
	Mg	.0042-.042	
	Mn	.0014-.014	
	K	.0014-.014	
	Na	.042-.42	
	Sn	.0014-.014	

interstate laboratories, inc.

II. Total Halogen as Chloride

Tank	Aqueous	Organic
1	.45%	
2	.59	.39
3	.33	.44
4	.30	
5	.10	
6	.22	.65
8	.23	.22
9	.05	.39
14	.41	.59

III. BTU's

Tank	BTU/lb (organic phase only)
3	6810
8	17530
9	15170
10	11988
11	9774
12	13807

Cannons Engineering Corporation

12/9/80

WASTES IN STORAGE BY LOCATION:

Tank Location by Tank Number @ Bridgewater, Massachusetts

#1	-	24,871	Mixed Waste Oils & B, S & W
#2	-	0	
#3	-	0	
#4	-	0	
#5	-	9,998	Ciba Geigy
#6	-	7,523	Bostik U.W.N.S.
#7	-	9,940	American Cyanamid
#8	-	6,095	Bostik & Ciba Geigy
#9	-	8,835	" " " "
#10	-	5,950	Ciba Geigy, Xidex and Franklin
#11	-	3,800	American Cyanamid, Xidex and Permuthane
#12	-	7,094	Ciba Geigy
#13	-	29,875	Mixed Aqueous
#14	-	27,021	Ciba Geigy & Pfizer
#15	-	081	Richardson
Drums:		200	Full - Tank Cleaning Sludge
		384	Partially Full - Tank Cleaning Sludge
Tankers:	1-	5,000	Empty - Requires Cleaning
	1-	6,300	- 5,700 Gals. Truck Washings
	1-	6,500	- 2,000 Gals. Truck Washings

Tank Location at Plymouth, Massachusetts

#1	-	241,000	Waste Oils, Solvents, Aqueous
#2	-	237,500	Ciba Geigy, Methanol, Bostik
#3	-	0	