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DEPARTMENT OF THE NAVY
NAVAL WEAPONS SUPPORT CENTER
CRANE, INDIANA 47522-3000

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11 FEB 1991

1-1-1991

U.S. Environmental Protection Agency
Region V, 5HR - 13
Attn: Ms. Carol Witt-Smith
230 South Dearborn Street
Chicago, IL 60604

Dear Ms. Witt-Smith:

Submitted for review is a supplement to the Interim Measure (IM) Sampling of the Old Burn Pit, Solid Waste Management Unit (SWMU) #05/03 Report which was sent to your office on November 26, 1990. The requirements for sampling and submittal of the original report were set forth in the IM report submitted by Naval Weapons Support Center (NWSCC) in August 1990.

NWSCC point of contact is Mr. Jim Hunsicker, Code 0924, telephone 812-854-3233.

Sincerely,

J. D. FARRIS
By direction

Encl:

- (1) Supplement To IM Sampling of the Old Burn Pit, SWMU #05/03
- (2) Certification Statement

Copy to:

NORTHNAVFACENCOM, Philadelphia (Code 1422) (w/o encl)
COMNAVSEASYS CON (SEA-6541) (w/o encl)
WES (w/o encl)



DEPARTMENT OF THE NAVY
NAVAL WEAPONS SUPPORT CENTER
CRANE, INDIANA 47822-8000

0924 Jms

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Writer: J. Hunsicker, Code: 0924, Ext: 3114
Typist: Scove, Date: 2/1/91

ENCLOSURES

Enclosure (2) - Certification Statement is unavailable.

**SUPPLEMENT TO
INTERIM MEASURE SAMPLING
OF THE OLD BURN PIT, SWMU O5/03
FOR
NAVAL WEAPONS SUPPORT CENTER
CRANE, INDIANA**

ENGINEERING-SCIENCE

DESIGN • RESEARCH • PLANNING

1000 JORIE BOULEVARD - SUITE 250, OAK BROOK, ILLINOIS 60521 708/990-7200

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Enclosure (1)

DRAFT
January 14, 1991

**SUPPLEMENT TO
INTERIM MEASURE SAMPLING
OF THE OLD BURN PIT, SWMU 05/03
FOR
NAVAL WEAPONS SUPPORT CENTER
CRANE, INDIANA**

JANUARY 1991

**Prepared By:
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Oak Brook, Illinois 60521**

CH054.01

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SECTION 3.0 RESULTS

3.1 ANALYTICAL RESULTS

The analytical results are tabulated in the following section. The results of reactivity, corrosivity, and PCBs are shown in Table 3.1.A. Reactive sulfide was detected in two of the samples collected. Concentrations of all these parameters in the samples collected were below USEPA regulatory limits.

Table 3.1.B lists the results for the heavy metal analysis in the TCLP extracts. Barium was detected in six of the samples collected. Cadmium was detected in one of the samples collected. Lead was detected in three of the samples. All of the metal concentrations were below USEPA regulatory limits.

Table 3.1.C lists the results of the pesticide analysis in the TCLP extracts. Pesticides were not detected in any of the samples collected.

Table 3.1.D lists the results of the herbicide analysis in the TCLP extracts. There were no herbicides detected in any of the samples collected. Table 3.1.E lists the results of the volatile organic compound analysis on the TCLP extracts. Methylene ketone was detected in one of the samples. All of the volatile compounds were below regulatory limits.

Table 3.1.F lists the results of the semi-volatile organic compound analysis on the TCLP extracts. Semi-volatile organic compounds were not detected in the samples collected.

Table 3.1.G lists the results of the explosive compound analysis on the soil samples. There were no explosive compounds detected in the soil samples collected.

3.2 USEPA REGULATORY LIMITS

A listing of the parameters analyzed for and their regulatory limits is shown in Table 3.2.

TABLE 3.1A
REACTIVITY, CORROSIVITY, AND PCB CONCENTRATIONS
IN SOIL⁽¹⁾

COMPOUND	REG. LEVEL	BLANK	SS001 (mg/kg) ⁽²⁾	SS002 (mg/kg)	SS003 (mg/kg)	SS004 (mg/kg)	SS005 (mg/kg)	SS006 (mg/kg)	SS007 (mg/kg)	SS008 (mg/kg)	SS009 (mg/kg)	SS010 (mg/kg)
Reactive cyanide	250	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Reactive sulfide	500	<50	<50	<50	<50	<50	<50	76	94	<50	<50	<50
pH	<2 or >12	7	6	7	6	6	6	6	6	7	7	6
Total PCBs	50	<1	2H	<1H								

(1) Sample locations shown in Figure 2.A.

(2) mg/kg = milligrams per kilogram

H Value biased low due to missed holding time, holding time for soil is undefined, the holding time for water was applied. Please see Quality Control 3.3.

TABLE 3.1B
HEAVY METAL CONCENTRATIONS
IN TCLP EXTRACT

COMPOUND	REG. LEVEL	BLANK	SS001 (mg/l) ⁽¹⁾	SS002 (mg/l)	SS003 (mg/l)	SS004 (mg/l)	SS005 (mg/l)	SS006 (mg/l)	SS007 (mg/l)	SS008 (mg/l)	SS009 (mg/l)	SS010 (mg/l)
Silver	5.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	5.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Barium	100	<0.1	2.6	<0.1	<0.1	<0.1	<0.1	0.3	1.2	1.6	1.2	1.1
Cadmium	1.0	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	5.0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mercury	0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Lead	5.0	<0.1	0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.2
Selenium	1.0	<0.3	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

(1) mg/l = milligrams per liter

TABLE 3.1.C

PESTICIDE CONCENTRATIONS
IN TCLP EXTRACT⁽¹⁾

COMPOUND	REG LEVEL	BLANK	SS001 ($\mu\text{g}/\ell$) ⁽²⁾	SS002 ($\mu\text{g}/\ell$)	SS003 ($\mu\text{g}/\ell$)	SS004 ($\mu\text{g}/\ell$)	SS005 ($\mu\text{g}/\ell$)	SS006 ($\mu\text{g}/\ell$)	SS007 ($\mu\text{g}/\ell$)	SS008 ($\mu\text{g}/\ell$)	SS009 ($\mu\text{g}/\ell$)	SS010 ($\mu\text{g}/\ell$)
Lindane	400	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlordane	30	<0.5	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Endrin	20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	8	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	8	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxy- chlor	10,000	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toxaphene	500	<1.0	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4

(1) Sample locations shown in Figure 2.A.

(2) $\mu\text{g}/\ell$ = micrograms per liter.

TABLE 3.LD
HERBICIDE CONCENTRATIONS
IN TCLP EXTRACT⁽¹⁾

COMPOUND	REG. LEVEL	BLANK	SS001 (mg/l) ⁽²⁾	SS002 (mg/l)	SS003 (mg/l)	SS004 (mg/l)	SS005 (mg/l)	SS006 (mg/l)	SS007 (mg/l)	SS008 (mg/l)	SS009 (mg/l)	SS010 (mg/l)
2,4-D	10	<0.02	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
2,4,5-TP	1.0	<0.004	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006

(1) Sample locations shown in Figure 2.A.

(2) mg/l = milligrams per liter.

TABLE 3.1.E
VOLATILE ORGANIC COMPOUND CONCENTRATIONS
IN TCLP EXTRACT⁽¹⁾

COMPOUND	REG. LEVEL	BLANK	SS001 (mg/l) ⁽²⁾	SS002 (mg/l)	SS003 (mg/l)	SS004 (mg/l)	SS005 (mg/l)	SS006 (mg/l)	SS007 (mg/l)	SS008 (mg/l)	SS009 (mg/l)	SS010 (mg/l)
Benzene	0.5	<0.005	<0.01	<0.007	<0.006	<0.006	<0.006	<0.028	<0.006	<0.006	<0.006	<0.006
Carbon tetra- chloride	0.5	<0.005	<0.01	<0.007	<0.006	<0.006	<0.006	<0.028	<0.006	<0.006	<0.006	<0.006
Chlorobenzene	100	<0.005	<0.01	<0.006	<0.005	<0.005	<0.005	<0.025	<0.005	<0.006	<0.006	<0.006
Chloroform	6.0	<0.005	<0.01	<0.006	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005	<0.005
1,2-Dichloro- ethane	0.5	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.023	<0.005	<0.005	<0.005	<0.005
1,1-Dichloro- ethylene	0.7	<0.005	<0.01	<0.007	<0.006	<0.006	<0.006	<0.028	<0.006	<0.006	<0.006	<0.006
Methylethyl ketone	200	<0.05	<0.1	<0.05	<0.04	<0.04	<0.04	0.45	<0.04	<0.04	<0.04	<0.04
Tetrachloro- ethene	0.7	<0.005	<0.01	<0.006	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005	<0.005
Trichloro- ethene	0.5	<0.005	<0.01	<0.006	<0.005	<0.005	<0.005	<0.025	<0.005	<0.005	<0.005	<0.005
Vinyl chloride	0.2	<0.01	<0.02	<0.011	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.005

(1) Sample locations shown in Figure 2.A.

(2) Mg/l = milligrams per liter.

TABLE 3.1.F

SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS
IN TCLP EXTRACT⁽¹⁾

COMPOUND	REG LEVEL	BLANK	SS001 (mg/l) ⁽²⁾	SS002 (mg/l)	SS003 (mg/l)	SS004 (mg/l)	SS005 (mg/l)	SS006 (mg/l)	SS007 (mg/l)	SS008 (mg/l)	SS009 (mg/l)	SS010 (mg/l)
Cresol	200.0	<0.004	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-Dichlorobenzene	7.5	<0.004	<0.7H	<0.7	<0.7H	<0.7H	<0.7H	<0.7	<0.7H	<0.7	<0.7	<0.7
2,4-Dinitrotoluene	0.13	<0.004	<0.08H	<0.08	<0.08H	<0.08H	<0.08H	<0.08	<0.08H	0.08	<0.08	<0.08
Hexachlorobenzene	0.13	<0.004	<0.05H	<0.05	<0.05H	<0.05H	<0.05H	<0.05	<0.05H	<0.05	<0.05	<0.05
Hexachloro-1,3-butadiene	0.5	<0.004	<0.07H	<0.07	<0.07H	<0.07H	<0.07H	<0.07	<0.07H	<0.07	<0.07	<0.07
Hexachloroethane	3.0	<0.004	<0.06H	<0.06	<0.06H	<0.06H	<0.06H	<0.06	<0.06H	<0.06	<0.06	<0.06
Nitrobenzene	2.0	<0.004	<0.06H	<0.06	<0.06H	<0.06H	<0.06H	<0.06	<0.06H	<0.06	<0.06	<0.06
Penta-chloro phenol	100	<0.004	<1.2H	<1.2	<1.2H	<1.2H	<1.2H	<1.2	<1.2H	<1.2	<1.2	<1.2
Pyridine	5.0	<0.004	<0.06H	<0.06	<0.06H	<0.06H	<0.06H	<0.06	<0.06H	<0.06	<0.06	<0.06
2,4,5-trichlorophenol	400.0	<0.004	<0.1H	<0.1	<0.1H	<0.1H	<0.1H	<0.1	<0.1H	<0.1	<0.1	<0.1
2,4,6-trichlorophenol	2.0	<0.004	<0.1H	<0.1	<0.1H	<0.1H	<0.1H	<0.1	<0.1H	<0.1	<0.1	<0.1

(1) Sample locations shown in Figure 2.A.

(2) mg/l = milligrams per liter.

H Value biased low due to missed holding time. Please see Quality Control 3.3.

TABLE 3.1.G
EXPLOSIVE COMPOUNDS
IN SOIL⁽¹⁾

COMPOUND	BLANK	SS001 (mg/kg) ⁽²⁾	SS002 (mg/kg)	SS003 (mg/kg)	SS004 (mg/kg)	SS005 (mg/kg)	SS006 (mg/kg)	SS007 (mg/kg)	SS008 (mg/kg)	SS009 (mg/kg)	SS010 (mg/kg)
HMX	<127	<6.35	<1.27	<1.27	<1.27	<1.27	<1.27	<1.27	<1.27	<1.27	<1.27
RDX	<0.98	<4.90	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98	<0.98
1,3,5-TNB	<2.09	<10.40	<2.09	<2.09	<2.09	<2.09	<2.09	<2.09	<2.09	<2.09	<2.09
1,3-DNB	<0.59	<2.05	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59
Nitrobenzene	<0.42	<2.10	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42
Tetryl	<5.00	<25.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00	<5.00
2,4,6-TNT	<1.92	<4.60	<1.92	<1.92	<1.92	<1.92	<1.92	<1.92	<1.92	<1.92	<1.92
2,6-DNT	<0.40	<2.00	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
2,4-DNT	<0.42	<2.10	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42	<0.42

- (1) Sample locations shown in Figure 2.A.
(2) mg/kg = milligrams per kilogram.

TABLE 3.2
USEPA
REGULATORY LIMITS

Parameter	Regulatory limit
pH	<2 or >12
Reactive cyanide	250 ppm
Reactive sulfide	500 ppm
PCBs	50 ppm
Heavy Metals	
Arsenic	5.0 ppm
Barium	100.0 ppm
Cadmium	1.0 ppm
Chromium	5.0 ppm
Mercury	0.2 ppm
Lead	5.0 ppm
Silver	5.0 ppm
Selenium	1.0 ppm
Pesticides	
Chlordane	0.03 ppm
Endrin	0.02 ppm
Heptachlor	0.008 ppm
Lindane	0.4 ppm
Methoxychlor	10.0 ppm
Toxaphene	0.5 ppm
Herbicides	
2,4-D	10.0 ppm
2,4, 5-TP	1.0 ppm
Volatile Compounds	
Benzene	0.5 ppm
Carbon tetrachloride	0.5 ppm
Chlorobenzene	100.0 ppm
Chloroform	6.0 ppm
1,2-Dichloroethane	0.5 ppm
1,1-Dichloroethylene	0.7 ppm
Methylethyl ketone	200.0 ppm
Tetrachloroethylene	0.7 ppm
Vinyl chloride	0.2 ppm
Semi-Volatile Compounds	
o-Cresol	200.0 ppm
m-Cresol	200.0 ppm
p-Cresol	200.0 ppm
Cresol	200.0 ppm
1,4-Dichlorobenzene	7.5 ppm
2,4-Dinitrotoluene	0.13 ppm
Hexachlorobenzene	0.13 ppm
Hexachloro-1,3-butadiene	0.5 ppm
Hexachloroethane	3.0 ppm
Nitrobenzene	2.0 ppm
Pentachlorophenol	100.0 ppm
Pyridine	5.0 ppm
2,4,5-Trichlorophenol	400.0 ppm
2,4,6-Trichlorophenol	2.0 ppm

3.3 QUALITY CONTROL

3.3.1 Heavy Metals

All samples were extracted according to the TCLP extraction procedure within the allowed holding times. The shortest holding time is Mercury at 28 days. All samples were then analyzed within the allowed holding times. The shortest holding is Mercury again at 28 days.

The minimum of one blank using the same extraction fluid as the samples was analyzed. There were no metal concentrations detected in the blank.

A matrix spike was performed on SS007. The bias determined by the matrix spike was used to correct the measured heavy metal values. The percent recoveries from the matrix spike were acceptable. The percent recoveries are shown in Table 3.3, Heavy Metals.

The laboratory control sample and the laboratory control sample duplicate were within acceptable QC advisory limits. The relative percent difference of the laboratory control sample duplicate is shown in Table 3.3, Heavy Metals.

3.3.2 Volatile Compounds

All samples were extracted according to the TCLP extraction procedure within the allowed holding time of 14 days. All samples were then analyzed within the allowed 14 days.

All samples and the blank were spiked with 1,2-Dichloroethane. Toluene-d8 and Bromofluorobenzene as surrogates. All surrogate percent recoveries were within the given QC advisory limits. The percent recoveries and the corresponding QC advisory limits are shown in Table 3.4, volatile compounds.

A matrix spike was performed on SS007. The bias determined by the matrix spike was used to correct the measured volatile compound values. The percent recoveries from the matrix spike were acceptable. The percent recoveries are shown in Table 3.3, Volatile Organic Compounds.

The laboratory control sample and the laboratory control sample duplicate were within acceptable advisory limits. The relative percent difference of the laboratory control sample duplicate is shown in Table 3.3, Volatile Organic Compounds.

TABLE 33
LABORATORY QUALITY CONTROL

COMPOUND	% RECOVERY	RELATIVE % DIFFERENCE
Heavy Metals		
Arsenic	99	2.1
Barium	90	2.1
Cadmium	82	2.1
Chromium	84	1.0
Lead	82	1.0
Mercury	110	*
Selenium	77	21.3
Silver	84	2.1
Pesticides		
Lindane	63	1.8
Chlordane	74	4.6
Endrin	109	1.7
Heptachlor	85	6.2
Heptachlor epoxide	102	6.2
Methoxychlor	72	2.2
Toxaphene	114	0
Herbicides		
2,4,-D	76	20.4
2,4,5-TP	70	15.4
Volatile Organic Compounds		
Benzene	90	2.0
Carbon Tetrachloride	90	2.2
Chlorobenzene	100	0.9
Chloroform	100	1.9
1,2-Dichloroethane	110	3.4
1,1-Dichloroethylene	90	2.7
Methyl ethyl ketone	120	2.2
Tetrachloroethene	100	1.0
Trichloroethene	100	2.8
Vinyl chloride	110	7.3
Semi-volatile Organic Compounds		
Cresol	35	24.6
2,4-Dinitrotoluene	48	13.3
1,4-Dichlorobenzene	55	7.1
Hexachlorobenzene	76	8
Hexachloro-1,3-butadiene	59	5.5
Nitrobenzene	67	5.7
Pentachlorophenol	16	11.3
Pyridine	60	11.3
2,4,5-Trichlorophenol	34	1.4
2,4,6-Trichlorophenol	36	1.4
Explosive Compounds		
HMX	81	6.4
RDX	77	2.6
1,3,5-TNB	74	1.4
1,3-DNB	75	1.3
Nitrobenzene	75	5.5
Tetryl	37	7.8
2,4,6-TNT	109	16.9
2,6-DNT	80	5.1
2,4-DNT	77	2.6
Polychlorinated Biphenyls		
PCB	103	3.9

* Laboratory accident.

TABLE 3.4
SURROGATE RECOVERIES⁽¹⁾

SURROGATE	SS001	SS002	SS003	SS004	SS005	SS006	SS007	SS008	SS009	SS010	CONTROL LIMITS
<u>Pesticide</u>											
Dibutylchloroendate	30	32	44	42	71	39	34	41	52	35	24-54
<u>Herbicide</u>											
2,4-DB	81	94	95	88	88	93	877	100	96	92	48-131
<u>Volatile Compounds</u>											
1,2-Dichloroethane	109	105	103	105	107	94	104	106	104	106	76-114
Toluene-d8	97	96	94	98	97	96	96	100	98	97	8-110
Bromofluorobenzene	107	100	102	100	100	98	101	100	99	101	86-115
<u>Base Neutral Acids</u>											
Nitrobenzene	23*	66	60	65	66	60	52	50	61	52	35-114
Fluorobiphenyl	70	60	65	71	66	59	67	57	60	62	43-116
Terphenyl-d14	77	90	59	66	73	96	53	90	88	93	33-114
2-Fluorophenol	59	50	47	57	59	48	26	37	37	7*	21-100
Phenol-d5	64	35	49	59	61	34	28	27	27	5*	10-94
2,4,6-Tribromophenol	69	71	37	64	69	75	30	40	57	0*	10-125

* Recovery out of laboratory control limits.

(1) Units are all in % Recoveries.

3.3.3 Semi-volatile Herbicides

All samples were extracted according to the TCLP extraction procedure within the allowed holding time of 14 days. All leachate samples were then extracted for herbicide analysis within the allowed 7 days.

All samples and the blank were spiked with 2,4-DB as a surrogate. All surrogate present recoveries were within the given QC advisory limits. The percent recoveries and the corresponding QC advisory limits are shown in Table 3.4, Herbicide.

A matrix spike was performed on SS007. The bias determined by the matrix was used to correct the measured semi-volatile herbicide values. The percent recoveries from the matrix spike were acceptable. The percent recoveries are shown in Table 3.3, Herbicides

The laboratory control sample and the laboratory control sample duplicate were within acceptable QC advisory limits. The relative percent difference of the laboratory control sample duplicate is shown in Table 3.3, Herbicides.

3.3.4 Semi-volatile Pesticides

All samples were extracted according to the TCLP extraction procedure within the allowed holding time of 14 days. All leachate samples were then extracted for pesticide analysis within the allowed 7 days.

All samples and the blank were spiked with dibutylchloroendate as a surrogate. All surrogate percent recoveries were within the given QC advisory limits. The percent recoveries and the corresponding QC advisory limits are shown in Table 3.4, Pesticide.

A matrix spike was performed on SS001. The bias determined by the matrix was used to correct the measured semi-volatile pesticide values. The percent recoveries from the matrix spike were acceptable. The percent recoveries are shown in Table 3.3, Pesticides.

The laboratory control sample and the laboratory control sample duplicate were within acceptable QC advisory limits. The relative percent difference of the laboratory control sample duplicate is shown in Table 3.3, Pesticides.

3.3.5 Semi-volatile Base/Neutral/Acids

All samples were extracted according to the TCLP extraction procedure within the allowed holding time of 14 days. All leachate samples were then extracted for BNA analysis within the allowed holding time. When the laboratory analyzed the prepared samples they discovered that five of the samples were inadvertently spiked with the BNA spiking compounds. The following samples were inadvertently spiked: SS001, SS003, SS004, SS005, and SS007.

Following is a list of the levels the samples were spiked at:

Cresol (o, m, & p)	0.80 mg/l
1,4-Dichlorobenzene	0.40 mg/l
2,4-Dinitrotoluene	0.10 mg/l
Hexachlorobenzene	0.10 mg/l
Hexachlorobutadiene	0.40 mg/l
Hexachloroethane	0.40 mg/l
Nitrobenzene	0.10 mg/l
Pentachlorophenol	0.40 mg/l
Pyridine	0.20 mg/l
2,4,5-Trichlorophenol	0.40 mg/l
2,4,6-Trichlorophenol	0.40 mg/l

The laboratory results from these spiked samples is included as Appendix D "Supplemental Laboratory Data." The results from these five samples are tabulated in Table 3.5. The quantities detected were all below regulatory limits. The detectable amount of these compounds is explained by the amount of spike added. These five leached samples were then re-extracted for BNA analysis without the added spike. The results from the re-extracted samples are included in Appendix C with the complete laboratory report. These results are biased low due to the missed holding time on the re-extraction, and are appropriately flagged in the data Table 3.1.F.

All samples and the blank were spiked with the following compounds as surrogates: Nitrobenzene-d5, fluorobiphenyl, terphenyl-d14, 2-Fluorophenol, phenol-d5, and 2,4,5-Tribromophenol. Two samples showed surrogate recoveries outside of the given QC advisory limits. Samples SS001 showed one surrogate recovery low, and sample SS010 showed three surrogates recovering low. The percent recoveries and the corresponding QC advisory limits are shown in Table 3.4, Base Neutral Acids. The low recoveries are flagged with an asterisk. The results in the complete laboratory report found in Appendix C for sample SS010 represent a re-extraction that was

TABLE 3.5
SUPPLEMENTAL LABORATORY DATA
SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS
IN TCLP EXTRACT⁽¹⁾⁽²⁾

COMPOUND	Regulatory Level	SS001	SS003	SS004	SS005	SS007	Detection Level	Spike Added
Cresol	200.0	0.407	0.213	0.434	0.445	0.03	0.04	0.80
1,4-Dichlorobenzene	7.5	0.158	0.260	0.246	0.248	0.222	0.04	0.40
2,4-Dinitrotoluene	0.13	0.046	0.047	0.040	0.042	0.052	0.04	0.10
Hexachlorobenzene	0.13	0.078	0.072	0.075	0.073	0.070	0.04	0.10
Hexachloro-1,3-butadiene	0.5	0.130	0.258	0.250	0.251	0.230	0.04	0.40
Hexachloroethane	3.0	0.118	0.244	0.232	0.243	0.210	0.04	0.40
Nitrobenzene	2.0	0.054	0.066	0.062	0.066	0.062	0.04	0.10
Pentechlorophenol	10.0	0.28	0.162	0.243	0.195	<0.2	0.2	0.40
Pyridine	5.0	0.089	0.112	0.106	0.107	0.107	0.04	0.20
2,4,5-Trichlorophenol	400.0	0.226	0.195	0.210	0.245	0.096	0.04	0.40
2,4,6-Trichlorophenol	20.0	0.263	0.192	0.252	0.275	0.040	0.04	0.40

- (1) Sample locations shown in Figure 2.A.
(2) All units of measure are mg/l = milligrams per liter.

completed after the allowed holding time. The re-extraction was completed due to the three acid surrogates that recovered outside of QC advisory control limits. The original extraction data that was extracted within the allowed holding time is included in Appendix D, "Supplemental Laboratory Data." The data found in Tables 3.1 and 3.4 represent the original extraction. The surrogates are appropriately flagged in Table 3.4

A matrix spike was performed on SS007. The bias determined by the matrix was used to correct the measured semi-volatile BNA values. The percent recoveries from the matrix spike were acceptable. The percent recoveries are shown in Table 3.3, Semi-Volatile Organic Compounds.

The laboratory control sample and the laboratory control sample duplicate were within acceptable QC advisory limits. The relative percent difference of the laboratory control sample duplicate is shown in Table 3.3, Semi-Volatile Organic Compounds. A laboratory blank was analyzed with the batch and no BNA compounds were detected in the blank.

3.3.6 Explosive

All samples were extracted for HPLC analysis within 7 days.

A method blank was analyzed with the sample batch and no explosive compounds were detected in the blank.

A matrix spike/matrix spike duplicate was analyzed on SS008. The percent recoveries and the relative percent differences were acceptable. The percent recoveries and relative percent differences are shown in Table 3.3, Explosive Compounds.

3.3.7 Polychlorinated Biphenyls

All of the samples were extracted for PCB analysis 15 days after collection. There is no specific guidance for a PCB holding time in a non-aqueous matrix. The recommended holding time in an aqueous matrix is 14 days. Following the guidelines for water all of the PCB results are being flagged as "biased low due to a missed holding time."

A matrix spike/matrix spike duplicate was reported for the batch. The percent recovery and the relative percent difference were within QC advisory limits.

DRAFT
January 14, 1991

The percent recovery and the relative percent difference are shown in Table 3.3, polychlorinated.

A laboratory blank was analyzed with the batch of samples. No PCBs were detected in the laboratory blank.

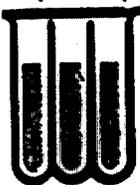
3.3.8 General

There is no specific guidance for the holding time of pH in a non-aqueous matrix. The recommended holding time in an aqueous matrix is 24 hours. The non-aqueous soil samples were analyzed for pH within 48 hours of sample collection.

DRAFT
January 14, 1991

**APPENDIX D
SUPPLEMENTAL LABORATORY DATA**

Since 1938



**WADSWORTH/ALERT
LABORATORIES, INC.**

Sampling, testing, mobile labs
4101 Shuffel Dr. N.W.
North Canton, Ohio 44720

SUPPLEMENTAL DATA

PROJECT NO. CH054.01

CRANE NWSC

Presented to:

RHONDA YODER

ENGINEERING SCIENCE INC.

WADSWORTH/ALERT LABORATORIES, INC.

Denise A. Woltman
Denise A. Woltman
Project Manager

Marvin W. Stephens
Marvin W. Stephens, Ph.D.
Vice President & Corporate Technical Director

December 24, 1990



CORPORATE AND LABORATORY: North Canton, Ohio (216) 497-9396
LABORATORY: Cleveland, Ohio (216) 642-9151
LABORATORY: Pittsburgh, Pennsylvania (412) 826-5477
LABORATORY: Bartow, Florida (813) 533-2150
SOUTHEAST REGIONAL OFFICE: Lexington, South Carolina (803) 957-6590
24-HOUR ALERT LINE (216) 497-9338

CASE NARRATIVE

This report contains the original uncorrected Base/Neutral and Acid Toxicity analytical results for the following six samples submitted to Wadsworth/ALERT Laboratories, Inc. by Engineering Science Inc. from the Crane NWSC Site, project number CH054.01:

<u>Client ID</u>	<u>Laboratory ID</u>
NWSC-SS001-S10/11/90	5565-23136
NWSC-SS003-S10/11/90	5565-23138
NWSC-SS004-S10/11/90	5565-23139
NWSC-SS005-S10/11/90	5565-23140
NWSC-SS007-S10/11/90	5565-23142
NWSC-SS010-S10/11/90	5565-23145

In all of the above samples, except lab sample ID #5565-23145, the bias correction spike was inadvertently added to the sample during the original extraction. The concentration of analytes recovered after spiking are reported here. By the time of analyses, this error was discovered and the recommended holding time from TCLP extraction to organic extraction of seven days was expired. The original submitted report contains the re-extracted data.

The base neutral acid toxicity analysis of lab sample ID #5565-23145 originally showed three acid surrogates to be out of control. Those results are presented here. The re-extracted, re-analysis for this sample was sent in the original report.

WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23136
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS001-S10/11/90 10-11-90 1130

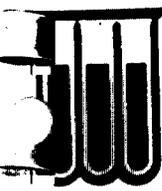
SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Cresol (o, m & p)	0.407/0.04	0	SEE NARRATIVE	200
1,4-Dichlorobenzene	0.158/0.04	0	SEE NARRATIVE	7.5
2,4-Dinitrotoluene	0.046/0.04	0	SEE NARRATIVE	0.13
Hexachlorobenzene	0.078/0.04	0	SEE NARRATIVE	0.13
Hexachlorobutadiene	0.13/0.04	0	SEE NARRATIVE	0.5
Hexachloroethane	0.118/0.04	0	SEE NARRATIVE	3
Nitrobenzene	0.054/0.04	0	SEE NARRATIVE	2
Pentachlorophenol	0.28/0.2	0	SEE NARRATIVE	100

NOTE: Bias Correction Factor determined on sample : 23136
ND (None Detected)
CF (Bias Correction Factor)
** (No Bias Correction performed above Regulatory Limit)
J (Detected, but below quantitation limit: estimated value)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23136
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWS-SS001-S10/11/90 10-11-90 1130

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST -2

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Pyridine	0.089/0.04	0	SEE NARRATIVE	5
2,4,5-Trichlorophenol	0.226/0.04	0	SEE NARRATIVE	400
2,4,6-Trichlorophenol	0.263/0.04	0	SEE NARRATIVE	2

NOTE: Bias Correction Factor determined on sample : 23136
ND (None Detected)
CF (Bias Correction Factor)
** (No Bias Correction performed above Regulatory Limit)
J (Detected, but below quantitation limit; estimated value)

WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23138
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS003-S10/11/90 10-11-90 1230

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Cresol (o, m & p)	0.213/0.04	0	SEE NARRATIVE	200
1,4-Dichlorobenzene	0.26/0.04	0	SEE NARRATIVE	7.5
2,4-Dinitrotoluene	0.047/0.04	0	SEE NARRATIVE	0.13
Hexachlorobenzene	0.072/0.04	0	SEE NARRATIVE	0.13
Hexachlorobutadiene	0.258/0.04	0	SEE NARRATIVE	0.5
Hexachloroethane	0.244/0.04	0	SEE NARRATIVE	3
Nitrobenzene	0.066/0.04	0	SEE NARRATIVE	2
Pentachlorophenol	0.162/0.2	0	SEE NARRATIVE	100

NOTE: Bias Correction Factor determined on sample : 23138
ND (None Detected)
CF (Bias Correction Factor)
** (No Bias Correction performed above Regulatory Limit)
J (Detected, but below quantitation limit: estimated value)

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23138
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS003-S10/11/90 10-11-90 1230

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST -2

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Pyridine	0.112/0.04	0	SEE NARRATIVE	5
2,4,5-Trichlorophenol	0.195/0.04	0	SEE NARRATIVE	400
2,4,6-Trichlorophenol	0.192/0.04	0	SEE NARRATIVE	2

NOTE: Bias Correction Factor determined on sample : 23138
ND (None Detected)
CF (Bias Correction Factor)
** (No Bias Correction performed above Regulatory Limit)
J (Detected, but below quantitation limit; estimated value)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23139
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS004-S10/11/90 10-11-90 1245

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Cresol (o, m & p)	0.434/0.04	0	SEE NARRATIVE	200
1,4-Dichlorobenzene	0.246/0.04	0	SEE NARRATIVE	7.5
2,4-Dinitrotoluene	0.04/0.04	0	SEE NARRATIVE	0.13
Hexachlorobenzene	0.075/0.04	0	SEE NARRATIVE	0.13
Hexachlorobutadiene	0.25/0.04	0	SEE NARRATIVE	0.5
Hexachloroethane	0.232/0.04	0	SEE NARRATIVE	3
Nitrobenzene	0.062/0.04	0	SEE NARRATIVE	2
Pentachlorophenol	0.243/0.2	0	SEE NARRATIVE	100

NOTE: Bias Correction Factor determined on sample : 23139
ND (None Detected)
CF (Bias Correction Factor)
** (No Bias Correction performed above Regulatory Limit)
J (Detected, but below quantitation limit: estimated value)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23139
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS004-S10/11/90 10-11-90 1245

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST -2

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Pyridine	0.106/0.04	0	SEE NARRATIVE	5
2,4,5-Trichlorophenol	0.21/0.04	0	SEE NARRATIVE	400
2,4,6-Trichlorophenol	0.252/0.04	0	SEE NARRATIVE	2

NOTE: Bias Correction Factor determined on sample : 23139
ND (None Detected)
CF (Bias Correction Factor)
** (No Bias Correction performed above Regulatory Limit)
J (Detected, but below quantitation limit; estimated value)

WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23140
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS005-S10/11/90 10-11-90 1300

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Cresol (o, m & p)	0.445/0.04	0	SEE NARRATIVE	200
1,4-Dichlorobenzene	0.248/0.04	0	SEE NARRATIVE	7.5
2,4-Dinitrotoluene	0.042/0.04	0	SEE NARRATIVE	0.13
Hexachlorobenzene	0.073/0.04	0	SEE NARRATIVE	0.13
Hexachlorobutadiene	0.251/0.04	0	SEE NARRATIVE	0.5
Hexachloroethane	0.243/0.04	0	SEE NARRATIVE	3
Nitrobenzene	0.066/0.04	0	SEE NARRATIVE	2
Pentachlorophenol	0.195/0.2	0	SEE NARRATIVE	100

NOTE: Bias Correction Factor determined on sample : 23140
 ND (None Detected)
 CF (Bias Correction Factor)
 ** (No Bias Correction performed above Regulatory Limit)
 J (Detected, but below quantitation limit: estimated value)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23140
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS005-S10/11/90 10-11-90 1300

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST -2

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Pyridine	0.107/0.04	0	SEE NARRATIVE	5
2,4,5-Trichlorophenol	0.245/0.04	0	SEE NARRATIVE	400
2,4,6-Trichlorophenol	0.275/0.04	0	SEE NARRATIVE	2

NOTE: Bias Correction Factor determined on sample : 23140
 ND (None Detected)
 CF (Bias Correction Factor)
 ** (No Bias Correction performed above Regulatory Limit)
 J (Detected, but below quantitation limit; estimated value)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23142
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS007-S10/11/90 10-11-90 1515

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311. (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Cresol (o, m & p)	0.03/0.04	0	SEE NARRATIVE	200
1,4-Dichlorobenzene	0.222/0.04	0	SEE NARRATIVE	7.5
2,4-Dinitrotoluene	0.052/0.04	0	SEE NARRATIVE	0.13
Hexachlorobenzene	0.07/0.04	0	SEE NARRATIVE	0.13
Hexachlorobutadiene	0.23/0.04	0	SEE NARRATIVE	0.5
Hexachloroethane	0.21/0.04	0	SEE NARRATIVE	3
Nitrobenzene	0.062/0.04	0	SEE NARRATIVE	2
Pentachlorophenol	ND/0.2	0	SEE NARRATIVE	100

NOTE: Bias Correction Factor determined on sample : 23142
 ND (None Detected)
 CF (Bias Correction Factor)
 ** (No Bias Correction performed above Regulatory Limit)
 J (Detected, but below quantitation limit: estimated value)

WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23142
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS007-S10/11/90 10-11-90 1515

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST -2

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Pyridine	0.107/0.04	0	SEE NARRATIVE	5
2,4,5-Trichlorophenol	0.096/0.04	0	SEE NARRATIVE	400
2,4,6-Trichlorophenol	0.04/0.04	0	SEE NARRATIVE	2

NOTE: Bias Correction Factor determined on sample : 23142
ND (None Detected)
CF (Bias Correction Factor)
** (No Bias Correction performed above Regulatory Limit)
J (Detected, but below quantitation limit; estimated value)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23145
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS010-S10/11/90 10-11-90 1545

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
Cresol (o, m & p)	ND/0.04	0.35	ND/0.11	200
1,4-Dichlorobenzene	ND/0.04	0.552	ND/0.07	7.5
2,4-Dinitrotoluene	ND/0.04	0.48	ND/0.08	0.13
Hexachlorobenzene	ND/0.04	0.76	ND/0.05	0.13
Hexachlorobutadiene	ND/0.04	0.595	ND/0.07	0.5
Hexachloroethane	ND/0.04	0.648	ND/0.06	3
Nitrobenzene	ND/0.04	0.67	ND/0.06	2
-Pentachlorophenol	ND/0.2	0.165	ND/1.2	100

NOTE: Bias Correction Factor determined on sample : 23142
 ND (None Detected)
 CF (Bias Correction Factor)
 ** (No Bias Correction performed above Regulatory Limit)
 J (Detected, but below quantitation limit: estimated value)



WADSWORTH/ALERT
LABORATORIES, INC.

COMPANY: ENGINEERING SCIENCE INC.
LAB #: 5565-23145
MATRIX: SOLID

DATE RECEIVED: 10/13/90
DATE EXTRACTED: 10/25/90
DATE ANALYZED: 11/ 1/90
UNITS: mg/l

SAMPLE ID: NWSC-SS010-S10/11/90 10-11-90 1545

SEMIVOLATILE EXTRACTABLE ORGANICS
TCLP TOXICITY CHARACTERISTIC LIST -2

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching
Procedure Method 1311 (55 FR 26986)

TCLP EXTRACTION DATE: 10/18/90

	RESULT/DET. LIMIT	CF	BIAS CORRECTED RESULT/DET. LIMIT	REGULATORY LIMIT
-Pyridine	ND/0.04	0.605	ND/0.07	5
✓ 2,4,5-Trichlorophenol	ND/0.04	0.345	ND/0.12	400
✓ 2,4,6-Trichlorophenol	ND/0.04	0.362	ND/0.11	2

NOTE: Bias Correction Factor determined on sample : 23142
 ND (None Detected)
 CF (Bias Correction Factor)
 ** (No Bias Correction performed above Regulatory Limit)
 J (Detected, but below quantitation limit; estimated value)

SURROGATE RECOVERY

ACCEPTABLE LIMITS

	%	WATER
Nitrobenzene-d5	52	(35-114)
Fluorobiphenyl	62	(43-116)
Terphenyl-d14	93	(33-141)
2-Fluorophenol	7*	(21-100)
Phenol-d5	5*	(10-94)
2,4,6-Tribromophenol	0*	(10-123)