POTENTIAL HIGH HAZARD - HANDLE WITH CARE

US EPA RECORDS CENTER REGION 5
484314

Sample Date 4/5/88
Site OLD MISHAWAKA Dump
County ST. JOSEPH

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT

GROUNDWATER MONITORING SITE INFORMATION SHEET

Control #s. C-3209-C-3210 Site Contact (Field Chief) MIKE WATSON Tasks 1
Site Location (city first): MISHAWAKA, OLD CITY DUMP, 5TH ST.
Weather Conditions: Sky CLEAR Ground MOIST Wind MOD. Temp 80° Humidity LOW-MOD.
Collector(s): Tim Heffernan, BRUCE DEATEL Laboratory EMS LABS.

Containers	Total #	Preservatives	ml/L	Lot #
1 liter plastic		50% H_2SO_4	2	
* 1 liter glass	1	HNO_3	5	
* 40 ml vials	2	50% NaOH	1	
250 ml glass		2N Zn Acetate	2	
		✓ Samples Iced	Samples Unpreserved	

Sampling Plan: (grab/composite); Used (facility/consultant/D.E.M.) equipment
Purged by: (facility/consultant/D.E.M.) personnel
with: Pump - type _____ size _____
make _____ tubing _____
Bailer - (PVC/SS/Teflon/ _____) rope material _____
diameter _____ length _____ capacity _____

Filtered by: (facility/consultant/D.E.M.) personnel.
Filtration Method: (gravity/vacuum/pressure); Device type _____
Filter (cartridge/paper) type _____, size _____, pore _____

Hydrolab -or- pH meter type _____, S.C. meter type _____
Equipment is (dedicated __ decontaminated) with _____
Source of: blank water _____, decon. water _____
Photos taken (yes/no) _____

MISCELLANEOUS

For Enforcement? (YES/NO/UKN) Handling Precautions? (YES/NO/UKN)

PROGRAM AREA: RCRA CERCLA SOLID WASTE OTHER _____

Approximate Concentration (Worst case):
10 ppm 100 ppm 1000 ppm 5% 10% 15%
UNKNOWN

*Notes: SAMPLES TAKEN FROM AN EXCAVATED DRUM. THE MATERIAL TURNED OUT TO BE PARTIALLY SOLIDIFIED. ONLY A SMALL SAMPLE WAS OBTAINED DUE TO THE SOLIDIFIED NATURE OF THE MATERIAL.

0093c
8/20/87

Site OLD MISHAWAKA Dump

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT
SAMPLE SHEET

Sample I.D. C-3209 DEM/OSHWM Control #_____

Field Tests		Sample type	Preservatives	Lot #
Test	Result	Mon. well	Lab	
		Res. Well	HNO_3	
Temperature	°C	Duplicate of	H_2SO_4	
pH	.	Split	NAOH	
Spec. Cond.	umhos	Blank(field/trip/equip.)	Zn-Acetate	

Sample Date 4/5/88 12:30 AM (PM)

Containers	#
1 liter plastic	
1 liter glass	1
40 ml vials	2
250 ml glass	
500 ml glass	

Monitoring Well Data
Well I.D. _____
Reference point on (steel/plastic) casing top
Casing Stick-up _____
Depth to Water _____
Well Material (PVC/SS/Teflon)
Total Well Depth _____
Inside Diameter (1 2 4 6) inch
Time to recharge one well volume - -within 1 4 8 24 48 or G.T. 48 hrs

Were METALS filtered prior to preservation? (Yes / (No) _____
Color of water subsequent to filtration _____

Deviations from Sampling Plan

ONLY 2 40ml VIALS OF THE MATERIAL + APPROX 200 mls OF THE MATERIAL IN A 1 LITER AMBER BOTTLE WERE COLLECTED BECAUSE THE MATERIAL TURNED OUT TO BE A PARTIALLY SOLIDIFIED SLUDGE. DIFFICULTY IN SAMPLING THE SOLID MATERIAL PREVENTED OUR OBTAINING A GREATER VOLUME OF THE MATERIAL FOR ANALYSIS

Other Observations

Water Appearance (clear slightly/very turbid) (color: gray/brown)
Well purged (less/greater) than (1 2 4 6 12 24 48) hours prior to sampling
Purged approx. (to dryness) / (1 2 3 4 5 8 10 G.T. 10 well volumes)
Reaction upon addition of preservatives? (YES/NO) (explain) SOME FUMES WERE LIBERATED WHEN THE MATERIAL CAME INTO CONTACT WITH THE PRESERVATIVE. NO HEAT WAS GENERATED AS A RESULT OF THE APPARENT REACTION.

Rev: 0093c
08/20/87

Signature Timothy C Heffernan
Date 4/5/88

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT
CHAIN OF CUSTODY

I certify that the following samples were collected by me or in my presence.

(Signature) Timothy C Heffernan

LAB # ASSIGNED	IDEM CONTROL NUMBER	MON WELL # or SAMPLE SITE IDENT.	# CONTAINERS (glass/plastic)	DATE & TIME OF COLLECTION
	C-3209		3 (2 40ml)(1 1L)	4-5-88; 12:30 AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM
				-- ; AM/PM

MAXIMUM AND MINIMUM TEMPERATURES DURING COLLECTION AND TRANSPORT
MAX ICED MIN ICED
TEMPERATURE OF SAMPLE AT EXCHANGE OF CUSTODY _____ _____ _____

TRANSFER OF CUSTODY

I certify that I received the above samples.

Relinquished By: (signature)	Date & Time	Received By: (signature)	Date & Time
Timothy C Heffernan	4-6-9:45 AM/PM	Dana J. Neal	4-6-88
Title: Env. Scientist		Title: SAMPLE CUSTODIAN	9:45 AM/PM
	--		--
Title:	AM/PM	Title:	AM/PM
	--		--
Title:	AM/PM	Title:	AM/PM

LABORATORY RECEIPT OF SAMPLES

I certify that I received the above samples. After recording these samples into the official logbook, they will remain in the custody of competent lab personnel or be secured in a locked area at all times.

(Signature) Dana J. Neal Laboratory EMS LABS.
DATE 4-6-88 TIME 9:45 AM/PM

Form DASD-3
Approved by State Board of Accounts

STATE OF INDIANA

INVOICE - VOUCHER

Warrant No._____

VENDOR FILL IN. Prepare a separate invoice for each purchase order received. Make five copies.

Invoice Number 110218 Date 4-14--88 19____

Vendor's Name and Address
EMS LABORATORIES, INC.
PO BOX 66002
INDIANAPOLIS, IN 46266

Delivered to
IDEM
105 S. Meridian St.
Chesapeake Building
PO Box 6015
Indianapolis, IN 46206-6015
Attn: Carla Hatton

RECEIVED APR 15 1988

IMPORTANT. Send three copies of this invoice directly to:
AUDITOR OF STATE, STATE HOUSE, INDIANAPOLIS
Do not send to State Agency to whom delivery was made.

VENDOR FILL IN. Enter below the data that appears in the upper right corner of the Purchase Order issued to you.

Order Number P- 87-601339
Account Number 361-424.370
State Agency Dept. of Environmental Mgt.
Appr. Name Solid & Hazardous Waste Mgt.

VENDOR LEAVE BLANK

Gross Amt.____
Discount____
AMT. LIQ.____ AMT. PAID____

CHECKED	POSTED	OBJECT	AMOUNT
Ext	PO		
PO	E&E		
RR	AL		

Approved for Payment____

Spec. No.	Quantity	Unit	Article and Description	Unit Price	Amount
			100006 - C-3209		$1746.50
			RECEIVED APR 15 1988		
			GROSS AMOUNT OF INVOICE (Subject to terms below)		$1746.50

VENDOR: Execute certificate below. SHOW TERMS HERE: NET DUE UPON RECEIPT

Pursuant to the provisions and penalties of Chapter 155 Acts of 1953.
I hereby certify that the foregoing account is just and correct that the amount claimed is legally due, after allowing all just credits and that no part of the same has been paid.

Date 4-14-88

X EMS LABORATORIES, INC.
(Firm Name)
X By Joy Whalin
X 7901 W. Morris St.
(Street or R.F.D.)
X Indianapolis, IN 46231
(City) (State)

I N V O I C E

------ CORRESPOND TO ---------- INVOICE ---------

EMS LABORATORIES, INC.
7901 W. MORRIS ST.
INDIANAPOLIS, IN 46231
(317) 243-8305

NUMBER : 110218
DATE : 04/14/88
CLIENT ID : 1159
PURCHASE NO : 87-601339-5

---------- REMIT ONLY TO ----------

EMS LABORATORIES, INC.
P.O. BOX 66002
INDIANAPOLIS, IN 46266

* MINIMUM SAMPLE CHARGE $25.00 * NET DUE UPON RECEIPT * 1.5% PER MONTH AFTER 30 DAYS *

---------- BILL TO ---------- REPORT TO ----------

CARLA HATTON
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
P.O. BOX 6015
INDIANAPOLIS IN 46206-6015

GREG BUSCH
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
P.O. BOX 6015
INDIANAPOLIS IN 46206-6015

DESCRIPTION	CHARGES	MATRIX FEES	PRIORITY PREMIUM	TOTAL
SAMPLE : 100006 P.O. NO : 87-601339-5				
C-3209				
IDEM				
VOLATILE ORGANICS, RCRA	250.00			
SEMI-VOLATILE ORGANICS, RCRA	575.00			
SEMI-VOLATILE EXTRACTION, ACID/BASE/NEUTRAL	NO CHARGE			
METALS DIGESTION	14.00			
ARSENIC, TOTAL	33.00			
BARIUM, TOTAL	10.00			
CADMIUM, TOTAL	10.00			
CHROMIUM, TOTAL	10.00			
LEAD, TOTAL	10.00			
MERCURY, TOTAL	33.00			
NICKEL, TOTAL	10.00			
SELENIUM, TOTAL	33.00			
SILVER, TOTAL	10.00			
SUBTOTAL --->	998.00	249.50	1247.50	2495.00
LESS 30.0% DISCOUNT				- 748.50
SUBTOTAL --->				1746.50

PAY THIS AMOUNT ---> 1746.50

LAST PAGE

87-601339-5

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT
CHAIN OF CUSTODY

I certify that the following samples were collected by me or in my presence.

(Signature) Timothy C Heffernan

LAB # ASSIGNED	IDEM CONTROL NUMBER	MON WELL # or SAMPLE SITE IDENT.	# CONTAINERS (glass/plastic)	DATE & TIME OF COLLECTION
100006	C-3204		3 (2 40ml)(1 1L)	4-5-88; 12:30 AM/PM
				-- -- ; AM/PM
				-- -- ; AM/PM
				-- -- ; AM/PM
				-- -- ; AM/PM
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				-- -- ; AM/PM
				-- -- ; AM/PM

MAXIMUM AND MINIMUM TEMPERATURES DURING COLLECTION AND TRANSPORT
MAX ICED MIN ICED
TEMPERATURE OF SAMPLE AT EXCHANGE OF CUSTODY _____ _____ _____

TRANSFER OF CUSTODY

I certify that I received the above samples.

Relinquished By: (signature)	Date & Time	Received By: (signature)	Date & Time
Timothy C Heffernan	4-6-9:45 AM/PM	Dana J. Neal	4-6-88 9:45 AM/PM
Title: Jeni. Scientist		Title: SAMPLE CUSTODIAN	
	-- --		-- --
Title:	AM/PM	Title:	AM/PM
	-- --		-- --
Title:	AM/PM	Title:	AM/PM

LABORATORY RECEIPT OF SAMPLES

I certify that I received the above samples. After recording these samples into the official logbook, they will remain in the custody of competent lab personnel or be secured in a locked area at all times.

(Signature) Dana J. Neal Laboratory EMS LABS.
DATE 4-6-88 TIME 9:45 AM/PM

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT
LABORATORY ANALYSIS REQUEST FORM

Date Delivered 4 / 6 / 88 / Control Numbers C-3209-

Laboratory Numbers 100006

To request an entire task, circle task label; to request individual parameters within a task, place an X in the appropriate box.

TASK 1	T	*	Result
Arsenic		0.010 mg/L	
Barium		0.050 mg/L	
Cadmium		0.005 mg/L	
Chromium		0.010 mg/L	
Lead		0.010 mg/L	
Mercury		0.0005 mg/L	
Nickel		0.010 mg/L	
Selenium		0.005 mg/L	
Silver		0.010 mg/L	

TASK 2	X	*	Result
Chloride		1.0 mg/L	
Iron		0.10 mg/L	
Manganese		0.01 mg/L	
Phenols		.005 mg/L	
Sodium		1.0 mg/L	
Sulfate		5.0 mg/L	

TASK 3	X	*	Result
pH (D002)		0.1 units	
Spec Cond		5.0 umho	
TOC		3.0 mg/L	
TOX		0.05 mg/L	
Total Solids		10 mg/L	
Diss. Solids		10 mg/L	

TASK 4	X	*	Result
Total Cyanide		0.005 mg/L	
Total Sulfide		1.0 mg/L	

MISCELLANEOUS	X	*	Result
Oil & Grease		0.1 mg/L	
COD		5 mg/L	
BTU		3000 BTU	

TASK 5 VOLATILE ORGANICS (VOA)

TASK 6 SEMI-VOLATILES (SVOA)

TASK 7 PCB-PESTICIDES

Task 8	X	*	Result
Calcium		0.10 mg/L	
Potassium		0.10 mg/L	
Magnesium		0.03 mg/L	
Hardness(T)		mg/L	
Alkalinity		10.0 mg/L	
Nitrate-N		0.05 mg/L	

See ORGANIC ANALYSIS I & II forms for a list of organics to be analyzed.

T = Total (metals)
* = Contract Required Detection Limits (CRDL)

Approximate concentrations: (Worst Case):

10 ppm	100 ppm	1000 ppm
5%	10%	15%

Turn-Around Required

30 day
14 day
7 day
2 day

QAO (signature) _____

C E R T I F I C A T E O A N A L Y S I S

CORRESPOND TO — **SAMPLE**

EMS Laboratories, Inc.
7901 West Morris Street
Indianapolis, Indiana 46231
(317) 243-8304

RECEIVED APR 15 1988

EMS SAMPLE : 100006
REPORT DATE : 04/14/88
DATE RECEIVED : 04/06/88
DATE COMPLETE : 04/14/88

REPORT TO

GREG BUSCH
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
P.O. BOX 6015
INDIANAPOLIS IN 46206-6015

BILL TO

CARLA HATTON
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
P.O. BOX 6015
INDIANAPOLIS IN 46206-6015

DESCRIPTION

C-3209
IDEM
DATE SAMPLED : 4/5/88 TIME SAMPLED : 12:30 PM

TEST DESCRIPTION / ANALYTE	RESULT	METHOD	DATE / DET. LIMIT	ANALYST / UNITS
ARSENIC, TOTAL		EPA 206.2	04/11/88	SON
ARSENIC, TOTAL	ND		0.010	MG/L
INSTRUMENT	PE 5100 GFAA			
BARIUM, TOTAL		EPA 208.1	04/07/88	JRS
BARIUM, TOTAL	0.75		0.25	MG/KG
INSTRUMENT	ICAP 61			
CADMIUM, TOTAL		EPA 213.1	04/07/88	JRS
CADMIUM, TOTAL	ND		0.25	MG/KG
INSTRUMENT	ICAP 61			
CHROMIUM, TOTAL		EPA 218.1	04/07/88	JRS
CHROMIUM, TOTAL	ND		0.25	MG/KG
INSTRUMENT	ICAP 61			
LEAD, TOTAL		EPA 239.1	04/07/88	JRS
LEAD, TOTAL	ND		1.3	MG/KG
INSTRUMENT	ICAP 61			
MERCURY, TOTAL		EPA 245.1	04/13/88	RHC
MERCURY, TOTAL	ND		0.13	MG/KG
INSTRUMENT	PE 370 CVAA			
NICKEL, TOTAL		EPA 249.1	04/07/88	JRS
NICKEL, TOTAL	1.5		0.25	MG/KG
INSTRUMENT	ICAP 61			

RECEIVED APR 15 1988

EMS SAMPLE : 100006

TEST DESCRIPTION ANALYTE	RESULT	METHOD	DATE DET. LIMIT	ANALYST UNITS
SELENIUM, TOTAL		EPA 270.2	04/13/88	SON
SELENIUM, TOTAL	: ND		0.50	MG/KG
INSTRUMENT	: PE 5100 GFAA			
SILVER, TOTAL		EPA 272.1	04/07/88	JRS
SILVER, TOTAL	: ND		0.25	MG/KG
INSTRUMENT	: ICAP 61			
SEMI-VOLATILE ORGANICS, RCRA		SW846-8270	04/07/88	TEP
SEMI-VOL (ISBH)	: ATTACHED		NA	NA
FILE REFERENCE NO.	: G9642B			
DAILY CAL CHECK FILE	: G9634B.C			
BLANK FRN	: G9612B.B			
SPIKE/SPIKE DUP FILE	: NA			
EXTRACTED STANDARD	: G9629B.S			
VOLATILE ORGANICS, RCRA		SW846-8240	04/12/88	KDS
RCRA VOLATILES	: ATTACHED		NA	NA
FILE REFERENCE NO.	: G21062			
DAILY CAL CHECK FILE	: G21060.S			
BLANK FRN	: G21061.B			
SPIKE/SPIKE DUP FILE	: G21070.M			
METALS DIGESTION		EPA 200.0	04/07/88	MSK
METALS, DIGEST	: COMPLETE		NA	G
INITIAL WT OR VOL	: 2			
FINAL WT OR VOL	: 50			
SEMI-VOLATILE EXTRACTION, ACID/BASE/NEUTRAL		SEE SEMI-V	04/07/88	LSB
S-VOL EXT., A/B/N	: COMPLETE		NA	NA
INITIAL WT OR VOL	: 10G			
FINAL VOLUME, ML	: 1ML			

ND - Not Detected
NA - Not Applicable
Sample was accompanied by chain of custody papers

Approved by : D. Peterson

The Quality Assurance Report contains information regarding the quality control (QC) which was performed during the analysis of the referenced sample. The QC includes reference standards, analytical blanks, replicate analyses, and matrix spikes. Acceptance criteria for each type of QC exist and are enforced.

The result of the analysis of an analytical reference sample, obtained from a reference sample service, is presented. Performance on these samples is determined by calculating the 'recovery' of the reference value as follows.

PERCENT RECOVERY = (OBSERVED VALUE / REFERENCE VALUE)*100

Reference samples are tested with a minimum frequency of one per twenty non-QC samples (one per ten for organics) or one per calibration run, whichever is more frequent. The recovery information is not used to modify the reported result in any way and reference standards are not used as calibration standards.

The result of the analysis of an analytical reagent blank is also presented Analytical blanks are analyzed with a minimum frequency of one per twenty non-QC samples or one per calibration run, whichever is more frequent. Analytical blanks are not used as calibration points and the sample results are not modified using this information.

The result of a duplicate analytical determination of a randomly selected non-QC sample is also presented. Duplicate determinations are made with a minimum frequency of one per twenty non-QC samples (one per ten for organics) or one per calibration run, whichever is more frequent. Duplicates are separately prepared (digested, extracted, etc) if necessary. Performance on duplicates is determined as follows;

RELATIVE DIFFERENCE = (2*abs(A-B))/(A+B)

Where A and B are the observed replicate values and must be greater than or equal to 10 times the method detection limit.

The result of the analysis of a fortified (spiked) sample is also presented. Spiked samples are randomly selected and analyzed at a minimum frequency of one per twenty non-QC samples (one per ten for organics) or one per calibration run, whichever is more frequent. Samples are fortified following any necessary preparation for metals and prior to preparation for organics. Performance on fortified samples is determined as follows;

PERCENT SPIKE RECOVERY = ((A - B)/C)*100

where A is the observed concentration after spiking, B is the observed concentration before spiking, and C is the theoretical concentration added by the spike. Samples are spiked at 2 to 5 times the detection limit and reported in the same units as the original result.

TABLE 1. QUALITY ASSURANCE DATA TO ACCOMPANY SAMPLE 10000600.

RECEIVED APR 15 1988

	REFERENCE STANDARD			BLANK	REPLICATES		MATRIX SPIKE			
TEST DESCRIPTION	ACTUAL	OBSERV.	PERCENT		REP. 1	REP. 2	OBSERV.	ADDED	SPIKED	PER
ARSENIC, TOTAL ...	0.0200	0.0198	99	ND	0.0	0.0	0.0	0.0200	0.0199	100
BARIUM, TOTAL	1.94	2.08	107	ND	0.15	0.15	0.15	2.0	2.19	102
CADMIUM, TOTAL ...	0.376	0.383	102	ND	0.31	0.31	0.31	0.05	0.35	80
CHROMIUM, TOTAL ..	0.100	0.103	103	ND	0.34	0.36	0.34	0.20	0.52	90
LEAD, TOTAL	0.408	0.437	107	ND	0.0	0.0	0.0	0.50	0.60	120
MERCURY, TOTAL ...	0.0030	0.0029	97	ND	0.0	0.0	0.0	0.0030	0.0018	60
NICKEL, TOTAL	0.100	0.104	104	ND	0.0	0.0	0.0	0.50	0.53	106
SELENIUM, TOTAL ..	0.0198	0.0205	104	ND	0.0	0.0	0.0	0.0200	0.0191	96
SILVER, TOTAL	1.98	2.05	103	ND	0.02	0.02	0.02	0.05	0.074	108

F LABS VOLATILE ORGANICS ANALYSI REPORT
INDIANAPOLIS, INDIANA

DESCRIPTION : IDEM C3209

EMS SAMPLE # : 100006
ANALYSIS METHOD: SW-846 METHOD 8240

DATA FILE: >21062::L3
ANALYSIS TIME : 4/12/88 13:24

	COMPOUND	RESULTS (mg/Kg)
1	[Acetone]	ND
2*	Acrolein	ND
3*	Acrylonitrile	ND
4	Benzene	ND
5	Bromodichloromethane	ND
6	Bromoform	ND
7	Bromomethane	ND
8	[Carbon disulfide]	ND
9	Carbon tetrachloride	ND
10	Chlorobenzene	ND
11	Chlorodibromomethane	ND
12	Chloroethane	ND
13	2-Chloroethylvinylether	ND
14	Chloroform	ND
15	Chloromethane	ND
16	cis-1,3-Dichloropropene	ND
17	Dichlorodifluoroethane	ND
18	1,1-Dichloroethane	ND
19	1,2-Dichloroethane	ND
20	1,1-Dichloroethene	ND
21	1,2-Dichloropropane	ND
22	Ethyl benzene	ND
23	[Fluorotrichloromethane]	ND
24*	2-Hexanone	ND
25	Methylene chloride	ND
26	[Methylisobutylketone]	ND
27	Methyl ethyl ketone	ND
28*	Paraldehyde	ND
29	Styrene	ND
30	1,1,2,2-Tetrachloroethane	ND
31	Tetrachloroethene	ND
32	Tetrahydrofuran	ND
33	Toluene	ND
34	trans-1,2-Dichloroethene	ND
35	trans-1,3-Dichloropropene	ND
36	1,1,1-Trichloroethane	ND
37	1,1,2-Trichloroethane	ND
38	Trichloroethene	ND
39*	Vinyl acetate	ND
40*	Vinyl Chloride	ND
41	m-Xylene	ND
42	o-Xylene	ND
43	p-Xylene	ND

Surrogates	% Recovery
d4-Dichloroethane	94
d8-Toluene	105
Bromofluorobenzene	96

Detection limit (mg/Kg) 0.32
*Detection limit (mg/Kg) 1.6
Dilution Factor 1:63

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/12/88

Contractor: EMS IN

Time: 10:44

Contract No:

Laboratory ID: >21060

Instrument ID: GCMS#1

Initial Calibration Date: 03/25/88

Minimum $\overline{RF}$ for SPCC is 0.30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Acrolein	-	-	-			
Acrylonitrile	-	-	-			
Chloromethane	.51411	.44150	14.12		**	
Bromomethane	.63672	1.01549	59.49			
Vinyl Chloride	.70292	.81049	15.30	*		
Methylene chloride	1.16616	1.28626	10.30			
Chloroethane	.70483	.60110	14.72			
[Carbon disulfide]	1.95952	2.27965	16.34			
[Acetone]	.24509	.19689	19.67			
[Fluorotrichloromethane]	.82855	1.53841	85.67			
1,1-Dichloroethene	1.31970	1.43738	8.92	*		
1,1-Dichloroethane	1.54865	1.66571	7.56		**	
[Tetrahydrofuran]	-	.03022	-			
trans-1,2-Dichloroethene	1.25906	1.34002	6.43			
cis-1,2-Dichloroethene	-	1.34002	-			
Diethyl ether	-	-	-			
Chloroform	1.82654	1.78549	2.25	*		
[Trichlorotrifluoroethane]	-	.04059	-			
D4 DICHLOROETHANE	.85529	.85107	.49			(Conc=50.00)
1,2-Dichloroethane	.50617	.50452	.32			
Methyl ethyl ketone	.18468	.11307	38.78			
1,1,1-Trichloroethane	.54893	.64165	16.89			
Carbon tetrachloride	.47431	.53279	12.33			
Vinyl acetate	.33660	.19004	43.54			
1,2-Dichloropropane	.61455	.56335	8.33	*		
trans-1,3-Dichloropropene	.71570	.99280	38.72			
Bromodichloromethane	.77886	.73386	5.78			
Trichloroethene	.64927	.48837	24.78			
Benzene	1.34839	1.24355	7.78			
Chlorodibromomethane	.53450	.50599	5.33			
1,1,2-Trichloroethane	.38249	.33505	12.40			
cis-1,3-Dichloropropene	.84130	-	-			

RF - Response Factor from daily standard file at 50.00 PPB

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI
%Diff - % Difference from original average or curve
CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**

RECEIVED APR 15

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/12/88

Contractor: EMS IN

Time: 10:44

Contract No:

Laboratory ID: >21060

Instrument ID: GCMS#1

Initial Calibration Date: 03/25/88

Minimum $\overline{RF}$ for SPCC is 0.30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
[Methyl methacrylate]	-	-	-			
2-Chloroethylvinylether	-	.04847	-			
Bromoform	.33956	.30088	11.39		**	
[Methylisobutylketone]	.50153	.36714	26.80			
D8 TOLUENE	1.59181	1.41484	11.12			(Conc=50.00)
1,1,2,2-Tetrachloroethane	.31491	.50755	61.17		**	
Tetrachloroethene	.58192	.56562	2.80			
2-Hexanone	.34889	.27738	20.50			
Toluene	1.88849	1.69218	10.39	*		
Chlorobenzene	1.21341	1.14161	5.92		**	
Ethyl benzene	2.16795	2.09189	3.51	*		
Styrene	1.01234	.98374	2.82			
m-Xylene	-	-	-			
P-XYLENE	-	-	-			
o-Xylene	1.49767	1.45328	2.96			
1,3-Dichlorobenzene	-	-	-			
1,2-Dichlorobenzene	-	-	-			
1,4-Dichlorobenzene	-	-	-			
BROMOFLUOROBENZENE	.83989	.84950	1.14			(Conc=50.00)

RF - Response Factor from daily standard file at 50.00 PPB

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI
%Diff - % Difference from original average or curve
CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**

LABS VOLATILE ORGANICS ANALYS: REPORT
INDIANAPOLIS, INDIANA

DESCRIPTION : METHOD BLANK (SOILS)

EMS SAMPLE # : BLANK
ANALYSIS METHOD: SW-846 METHOD 8240

DATA FILE: >21061::L3
ANALYSIS TIME : 4/12/88 12:00

	COMPOUND	RESULTS (mg/Kg)
1	[Acetone]	ND
2*	Acrolein	ND
3*	Acrylonitrile	ND
4	Benzene	ND
5	Bromodichloromethane	ND
6	Bromoform	ND
7	Bromomethane	ND
8	[Carbon disulfide]	ND
9	Carbon tetrachloride	ND
10	Chlorobenzene	ND
11	Chlorodibromomethane	ND
12	Chloroethane	ND
13	2-Chloroethylvinylether	ND
14	Chloroform	ND
15	Chloromethane	ND
16	cis-1,3-Dichloropropene	ND
17	Dichlorodifluoroethane	ND
18	1,1-Dichloroethane	ND
19	1,2-Dichloroethane	ND
20	1,1-Dichloroethene	ND
21	1,2-Dichloropropane	ND
22	Ethyl benzene	ND
23	[Fluorotrichloromethane]	ND
24*	2-Hexanone	ND
25	Methylene chloride	ND
26	[Methylisobutylketone]	ND
27	Methyl ethyl ketone	ND
28*	Paraldehyde	ND
29	Styrene	ND
30	1,1,2,2-Tetrachloroethane	ND
31	Tetrachloroethene	ND
32	Tetrahydrofuran	ND
33	Toluene	ND
34	trans-1,2-Dichloroethene	ND
35	trans-1,3-Dichloropropene	ND
36	1,1,1-Trichloroethane	ND
37	1,1,2-Trichloroethane	ND
38	Trichloroethene	ND
39*	Vinyl acetate	ND
40*	Vinyl Chloride	ND
41	m-Xylene	ND
42	o-Xylene	ND
43	p-Xylene	ND

Surrogates	% Recovery
d4-Dichloroethane	98
d8-Toluene	96
Bromofluorobenzene	95

Detection limit (mg/Kg) 0.32
*Detection limit (mg/Kg) 1.6
Dilution Factor 1:63

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RACOVERY

Lab Name : EMS LABORATORIES

EMS Sample No. :99845
MS DATA FILE :>21070
MSD DATA FILE :>21071

ANALYSIS METHOD: SW-846 METHOD 8240 ANALYSIS TIME: 04/12/88

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50	0	44	88	61-145
Trichloroethene	50	0	45	90	71-120
Benzene	50	0	47	94	76-127
Toluene	50	0	49	98	76-125
Chlorobenzene	50	0	48	96	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONC. (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50	49	98	10	14	61-145
Trichloroethene	50	49	98	9	14	71-120
Benzene	50	50	100	6	11	76-127
Toluene	50	49	98	0	13	76-125
Chlorobenzene	50	49	98	2	13	75-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 outside of QC limits
Spike Recovery: 0 outside of QC limits

Comments:

S LABS SEMI-VOLATILE ORGANIC AN YSIS REPORT
INDIANAPOLIS, INDIANA

DESCRIPTION : IDEM RUSH C-3209

EMS SAMPLE# : 100006
ANALYSIS METHOD: SW-846 Method 8270

DATA FILE: >9642B::B2
ANALYSIS TIME: 4/10/88 16:17

		BASE-NEUTRAL	RESULTS (MG/KG)
1		Acenaphthene	ND
2		Acenaphthylene	ND
3		Aniline	ND
4		Anthracene	ND
5		Benzidine	ND
6		Benz(a)anthracene	ND
7		Benzo(a)pyrene	ND
8		Benzo(b)fluoranthene	ND
9	*	Benzo(ghi)perylene	ND
10		Benzo(k)fluoranthene	ND
11		Benzyl alcohol	ND
12		Benzylbutylphthalate	ND
13		Bis(2-chloroethoxy)methane	ND
14		Bis(2-chloroethyl)ether	ND
15		Bis(2-chloroisopropyl)ether	ND
16		Bis(2-ethylhexyl)phthalate	(0.5)
17		4-Bromophenylphenylether	ND
18		Carbazole	ND
19		4-Chloroaniline	ND
20		2-Chloronaphthalene	ND
21		4-Chlorophenylphenylether	ND
22		Chrysene	ND
23	*	Dibenz(a,h)anthracene	ND
24		Dibenzofuran	ND
25		1,2-Dichlorobenzene	ND
26		1,3-Dichlorobenzene	ND
27		1,4-Dichlorobenzene	ND
28		3,3'-Dichlorobenzidine	ND
29		Diethylphthalate	ND
30		Dimethylphthalate	ND
31		Di-n-butylphthalate	(0.8)
32		Dinitrobenzene	ND
33		2,4-Dinitrotoluene	ND
34		2,6-Dinitrotoluene	ND
35		Di-n-octylphthalate	ND
36		Diphenyl hydrazine	ND
37		Fluoranthene	ND
38		Fluorene	ND
39		Hexachlorobenzene	ND
40		Hexachlorobutadiene	ND
41		Hexachlorocyclopentadiene	ND
42		Hexachloroethane	ND
43	*	Indeno(1,2,3-cd)pyrene	ND
44		Isophorone	ND
45		2-Methylnaphthalene	ND
46		Naphthalene	ND
47		2-Nitroaniline	ND
48		3-Nitroaniline	ND
49		4-Nitroaniline	ND
50		Nitrobenzene	ND

DESCRIPTION : IDEM RUSH C-3209

EMS SAMPLE# : 100006 DATA FILE: >9642B::B2

51		N-nitrosodiphenylamine	ND
52		N-nitroso-dipropyl-amine	ND
53		Phenanthrene	ND
54	**	2-Picoline	ND
55		Pyrene	ND
56	**	Pyridine	ND
57		Tetrachlorobenzenes	ND
58		Toluenediamine	ND
59		1,2,4-Trichlorobenzene	ND
		ACID	
1	*	Benzoic acid	ND
2	*	2-Chlorophenol	ND
3	*	2,4-Dichlorophenol	ND
4	*	2,4-Dimethylphenol	ND
5	**	4,6-Dinitro-2-methylphenol	ND
6	**	2,4-Dinitrophenol	ND
7	*	2-Methylphenol	ND
8	*	4-Methylphenol	ND
9	*	2-Nitrophenol	ND
10	*	4-Nitrophenol	ND
11	*	4-Chloro-3-Methylphenol	ND
12	*	Pentachlorophenol	ND
13	*	Phenol	ND
14	*	Tetrachlorophenol	ND
15	*	2,4,5-Trichlorophenol	ND
16	*	2,4,6-Trichlorophenol	ND
		PESTICIDES	
1		Aldrin	ND
2		alpha-BHC	ND
3		alpha-Endosulfan	ND
4		beta-BHC	ND
5		beta-Endosulfan	ND
6	**	Chlordane	ND
7		p,p'-DDD	ND
8		p,p'-DDE	ND
9		p,p'-DDT	ND
10		delta-BHC	ND
11		Dieldrin	ND
12		Endosulfan sulfate	ND
13		Endrin	ND
14		Endrin aldehyde	ND
15		gamma-BHC (Lindane)	ND
16		Heptachlor	ND
17		Heptachlor epoxide	ND
18		Methoxychlor	ND
19	**	PCB-1016	ND
20	**	PCB-1242	ND
21	**	PBC-1248	ND
22	**	PCB-1254	ND
23	**	PCB-1260	ND
24	**	Toxaphene	ND

DESCRIPTION : IDEM RUSH C-3209

EMS SAMPLE# : 100006 DATA FILE: >9642B::B2

Surrogate Recovery (Phenols @ 10 MG/KG, BN @ 5 MG/KG)

1	2-Fluorophenol	93	%
2	Phenol-d5	84	%
3	Nitrobenzene-d5	55	%
4	2-Fluorobiphenyl	53	%
5	2,4,6-Tribromophenol	89	%
6	Terphenyl-d14	85	%

Detection Limits (MG/KG): 1.0
* Detection Limits (MG/KG): 2.5
** Detection Limits (MG/KG): 5.0

( ) Estimated Concentration below Detection Limit.

Other compounds identified
UNKNOWNS R.T. - 20.30, 21.80, 30.81, 33.01, 36.52, 38.04
BENZOPHENONE
UNKNOWN HYDROCARBON R.T. - 23.18
(METHYLUNDECYL) BENZENE
UNKNOWN PHTHALATE R.T. - 24.03
HEXADECANOIC ACID
HEXANEDIOIC ACID, DIOCTYL ESTER
(TETRADECYLOXY) ETHANOL

Dilution Factor 1

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/10/88

Contractor: EMS LABS

Time: 08:48

Contract No:

Laboratory ID: >9634B

Instrument ID: GC/MS 2

Initial Calibration Date: 03/29/88

Minimum $\overline{RF}$ for SPCC is 0.050 Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Pyridine	1.65406	-	-		
N-nitroso-dimethyl-amine	.70898	.48772	31.21		
2-Picoline	1.02734	-	-		
2-Fluorophenol (surr)	.94969	.92648	2.44		
Phenol-d5 (surr)	1.19029	1.10080	7.52		
Aniline	2.34446	1.98446	15.36		
Bis(2-chloroethyl)ether	1.54571	1.72464	11.58		
1,3-Dichlorobenzene	1.69155	1.41510	16.34		
2-Chlorophenol	1.57288	1.48086	5.85		
1,4-Dichlorobenzene	1.73794	1.39230	19.89	*	
1,2-Dichlorobenzene	1.67419	1.36944	18.20		
Phenol	1.70241	1.69856	.23	*	
Benzyl alcohol	1.11203	.89139	19.84		
Bis(2-chloroisopropyl)ether	.77948	1.13621	45.77		
2-Methylphenol	1.31936	1.19740	9.24		
4-Methylphenol	1.39178	1.30627	6.14		
Hexachloroethane	.68855	.59611	13.43		
N-Nitroso-dipropyl-amine	.91379	1.07808	17.98		**
Nitrobenzene	.44042	.34640	21.35		
Isophorone	.75138	.71173	5.28		
2-Nitrophenol	.27378	.26984	1.44	*	
Nitrobenzene-d5 (surr)	.30203	.36447	20.67		
Bis(2-chloroethoxy)methane	.54754	.57764	5.50		
1,2,4-Trichlorobenzene	.37143	.34912	6.00		
Naphthalene	1.10637	1.07694	2.66		
2,4-Dimethylphenol	.35960	.38672	7.54		
2,4-Dichlorophenol	.34760	.39257	12.94	*	
4-Chloroaniline	.66212	.60617	8.45		
Hexachlorobutadiene	.17939	.21842	21.76		**
Benzoic acid	.27044	.20748	23.28		
2-Methylnaphthalene	1.14540	.96421	15.82		
1,2,3,4-Tetrachlorobenzene	.63560	-	-		

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI
%Diff - % Difference from original average or curve
CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: | Calibration Date: 04/10/88

Contractor: EMS LABS | Time: 08:48

Contract No: | Laboratory ID: >9634B

Instrument ID: GC/MS 2 | Initial Calibration Date: 03/29/88

Minimum $\overline{RF}$ for SPCC is 0.050 | Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Hexachlorocyclopentadiene	.37690	.29118	22.74	*	
1,2,4,5-Tetrachlorobenzene	.19371	-	-		
4-Chloro-3-Methylphenol	.62627	.62995	.59	*	
2-Fluorobiphenyl (surr)	1.25259	1.31845	5.26		
2-Chloronaphthalene	1.37732	1.08731	21.06		
Toluenediamine	.33468	-	-		
2,4,6-Trichlorophenol	.47483	.46575	1.91	*	
2,4,5-Trichlorophenol	.36734	.46575	26.79		
2-Nitroaniline	.37960	.43231	13.88		
Acenaphthylene	1.85994	1.81763	2.27		
1,3-Dinitrobenzene	.26671	-	-		
Dimethylphthalate	1.39074	1.66436	19.67		
2,6-Dinitrotoluene	.35486	.29349	17.29		
Acenaphthene	1.13308	1.22153	7.81	*	
3-Nitroaniline	.39009	.49724	27.47		
Dibenzofuran	2.04102	2.18692	7.15		
2,4-Dinitrophenol	.18407	.09651	47.57		**
2,4-Dinitrotoluene	.46504	.36302	21.94		
2,3,4,6-Tetrachlorophenol	-	-	-		
Fluorene	1.17799	1.20526	2.31		
4-Chlorophenylphenylether	.60124	.76572	27.36		
Isopropyl-biphenyl (1)	.37707	-	-		
4-Nitrophenol	.32609	.24702	24.25		**
Diethylphthalate	1.23755	1.61425	30.44		
2,4,6-Tribromophenol (surr)	.14584	.20908	43.36		
Diphenyl hydrazine	-	-	-		
4,6-Dinitro-2-methylphenol	.18477	.13632	26.22		
N-Nitrosodiphenylamine	.62391	.74097	18.76	*	
4-Nitroaniline	.29687	.24269	18.25		
Isopropyl-biphenyl (2)	.20005	-	-		
4-Bromophenylphenylether	.27772	.35353	27.29		
Chlorodibenzofuran	.56763	-	-		

RF - Response Factor from daily standard file at 50.00 ppb

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI
%Diff - % Difference from original average or curve
CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: | Calibration Date: 04/10/88

Contractor: EMS LABS | Time: 08:48

Contract No: | Laboratory ID: >9634B

Instrument ID: GC/MS 2 | Initial Calibration Date: 03/29/88

Minimum $\overline{RF}$ for SPCC is 0.050 | Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
alpha-BHC	.13684	.15782	15.33		
Hexachlorobenzene	.30094	.29643	1.50		
beta-BHC	.07664	.10889	42.07		
gamma-BHC (Lindane)	.08348	.08900	6.62		
Phenanthrene	1.21774	1.10629	9.15		
Anthracene	.93800	1.00839	7.50		
Pentachlorophenol	.15821	.19431	22.82	*	
delta-BHC	.09155	.10712	17.01		
Carbazole	1.81069	-	-		
Dichlorodibenzofuran	.45594	-	-		
Heptachlor	.15855	.15094	4.80		
Aldrin	.10920	.12040	10.26		
Di-n-butylphthalate	1.50075	1.72929	15.23		
Arochlor-1016	-	-	-		
Arochlor-1221	-	-	-		
Arochlor-1232	-	-	-		
Arochlor-1242	-	-	-		
Arochlor-1254	-	-	-		
Arochlor-1260	-	-	-		
Chlordane	-	-	-		
Toxaphene	-	-	-		
Heptachlor epoxide	.12764	.12770	.05		
Fluoranthene	1.52838	1.60226	4.83	*	
Pyrene	1.51973	1.57926	3.92		
alpha-Endosulfan	.04173	.04867	16.64		
Benzidine	.12385	-	-		
Dieldrin	.24934	.24581	1.42		
p,p'-DDE	.24526	.30039	22.48		
Endrin	.07601	.07529	.94		
beta-Endosulfan	.04553	.05086	11.71		
p,p'-DDD	.45549	.53493	17.44		
Endrin aldehyde	.03252	.02970	8.66		

RF - Response Factor from daily standard file at 50.00 ppb
RF - Average Response Factor from Initial Calibration Form VI
%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 04/10/88

Contractor: EMS LABS

Time: 08:48

Contract No:

Laboratory ID: >9634B

Instrument ID: GC/MS 2

Initial Calibration Date: 03/29/88

Minimum $\overline{RF}$ for SPCC is 0.050

Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Endosulfan sulfate	.08584	.09345	8.87		
2,3,7,8-TCDD	-	-	-		
p,p'-DDT	.39548	.35587	10.01		
Benzylbutylphthalate	.96346	.96087	.27		
Benz(a)anthracene	1.27141	1.27959	.64		
Chrysene	1.05951	1.23195	16.27		
3,3'-Dichlorobenzidine	.26464	.34062	28.71		
Methoxychlor	-	-	-		
Terphenyl-d14 (surr)	.89751	.98503	9.75		
Bis(2-ethylhexyl)phthalate	1.39308	1.36017	2.36		
Di-n-octylphthalate	3.11970	2.50072	19.84	*	
Benzo(b)fluoranthene	1.40828	1.24389	11.67		
Benzo(k)fluoranthene	.94998	.96058	1.12		
Benzo(a)pyrene	.96328	1.02308	6.21	*	
Indeno(1,2,3-cd)pyrene	.53147	.97282	83.04		
Dibenz(a,h)anthracene	.49407	.93082	88.40		
Benzo(ghi)perylene	.49821	.97733	96.17		

RF - Response Factor from daily standard file at 50.00 ppb
RF - Average Response Factor from Initial Calibration Form VI
%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

S LABS SEMI-VOLATILE ORGANIC AN YSIS REPORT
INDIANAPOLIS, INDIANA

DESCRIPTION : SOX. BLANK

EMS SAMPLE# : BNA-SMB
ANALYSIS METHOD: SW-846 Method 8270

DATA FILE: >9612B::B2
ANALYSIS TIME: 4/08/88 4:23

		BASE-NEUTRAL	RESULTS (MG/KG)
1		Acenaphthene	ND
2		Acenaphthylene	ND
3		Aniline	ND
4		Anthracene	ND
5		Benzidine	ND
6		Benz(a)anthracene	ND
7		Benzo(a)pyrene	ND
8		Benzo(b)fluoranthene	ND
9	*	Benzo(ghi)perylene	ND
10		Benzo(k)fluoranthene	ND
11		Benzyl alcohol	ND
12		Benzylbutylphthalate	ND
13		Bis(2-chloroethoxy)methane	ND
14		Bis(2-chloroethyl)ether	ND
15		Bis(2-chloroisopropyl)ether	ND
16		Bis(2-ethylhexyl)phthalate	ND
17		4-Bromophenylphenylether	ND
18		Carbazole	ND
19		4-Chloroaniline	ND
20		2-Chloronaphthalene	ND
21		4-Chlorophenylphenylether	ND
22		Chrysene	ND
23	*	Dibenz(a,h)anthracene	ND
24		Dibenzofuran	ND
25		1,2-Dichlorobenzene	ND
26		1,3-Dichlorobenzene	ND
27		1,4-Dichlorobenzene	ND
28		3,3'-Dichlorobenzidine	ND
29		Diethylphthalate	ND
30		Dimethylphthalate	ND
31		Di-n-butylphthalate	2.
32		Dinitrobenzene	ND
33		2,4-Dinitrotoluene	ND
34		2,6-Dinitrotoluene	ND
35		Di-n-octylphthalate	ND
36		Diphenyl hydrazine	ND
37		Fluoranthene	ND
38		Fluorene	ND
39		Hexachlorobenzene	ND
40		Hexachlorobutadiene	ND
41		Hexachlorocyclopentadiene	ND
42		Hexachloroethane	ND
43	*	Indeno(1,2,3-cd)pyrene	ND
44		Isophorone	ND
45		2-Methylnaphthalene	ND
46		Naphthalene	ND
47		2-Nitroaniline	ND
48		3-Nitroaniline	ND
49		4-Nitroaniline	ND
50		Nitrobenzene	ND

RECEIVED APR 1

DESCRIPTION : SO∧. BLANK

EMS SAMPLE# : BNA-SMB DATA FILE: >9612B::B2

51		N-nitrosodiphenylamine	ND
52		N-nitroso-dipropyl-amine	ND
53		Phenanthrene	ND
54	**	2-Picoline	ND
55		Pyrene	ND
56	**	Pyridine	ND
57		Tetrachlorobenzenes	ND
58		Toluenediamine	ND
59		1,2,4-Trichlorobenzene	ND
		ACID	
1	*	Benzoic acid	ND
2	*	2-Chlorophenol	ND
3	*	2,4-Dichlorophenol	ND
4	*	2,4-Dimethylphenol	ND
5	**	4,6-Dinitro-2-methylphenol	ND
6	**	2,4-Dinitrophenol	ND
7	*	2-Methylphenol	ND
8	*	4-Methylphenol	ND
9	*	2-Nitrophenol	ND
10	*	4-Nitrophenol	ND
11	*	4-Chloro-3-Methylphenol	ND
12	*	Pentachlorophenol	ND
13	*	Phenol	ND
14	*	Tetrachlorophenol	ND
15	*	2,4,5-Trichlorophenol	ND
16	*	2,4,6-Trichlorophenol	ND
		PESTICIDES	
1		Aldrin	ND
2		alpha-BHC	ND
3		alpha-Endosulfan	ND
4		beta-BHC	ND
5		beta-Endosulfan	ND
6	**	Chlordane	ND
7		p,p'-DDD	ND
8		p,p'-DDE	ND
9		p,p'-DDT	ND
10		delta-BHC	ND
11		Dieldrin	ND
12		Endosulfan sulfate	ND
13		Endrin	ND
14		Endrin aldehyde	ND
15		gamma-BHC (Lindane)	ND
16		Heptachlor	ND
17		Heptachlor epoxide	ND
18		Methoxychlor	ND
19	**	PCB-1016	ND
20	**	PCB-1242	ND
21	**	PBC-1248	ND
22	**	PCB-1254	ND
23	**	PCB-1260	ND
24	**	Toxaphene	ND

DESCRIPTION : SO∧. BLANK

EMS SAMPLE# : BNA-SMB DATA FILE: >9612B::B2

Surrogate Recovery (Phenols @ 10 MG/KG, BN @ 5 MG/KG)

1	2-Fluorophenol	96	%
2	Phenol-d5	87	%
3	Nitrobenzene-d5	97	%
4	2-Fluorobiphenyl	82	%
5	2,4,6-Tribromophenol	97	%
6	Terphenyl-d14	89	%

Detection Limits (MG/KG): 1.0
* Detection Limits (MG/KG): 2.5
** Detection Limits (MG/KG): 5.0

( ) Estimated Concentration below Detection Limit.

Other compounds identified
ETHYL HEXANOL
HEPTADECANE
OCTADECANE
BUTYL METHYLPROPY PHTHALATE
HEXADECANOIC ACID
UNKNOWNS R.T. - 30.20, 30.76, 30.93, 31.32, 33.54, 37.24

Dilution Factor .1

5 LABS SEMI-VOLATILE ORGANIC AN YSIS REPORT
INDIANAPOLIS, INDIANA

DESCRIPTION : SSTD050

EMS SAMPLE# : SOX-STD.
ANALYSIS METHOD: SW-846 Method 8270

DATA FILE: >9629B::B3
ANALYSIS TIME: 4/10/88 4:52

		BASE-NEUTRAL	% RECOVERY
1		Acenaphthene	92.
2		Acenaphthylene	84.
3		Aniline	ND
4		Anthracene	88.
5		Benzidine	ND
6		Benz(a)anthracene	90.
7		Benzo(a)pyrene	80.
8		Benzo(b)fluoranthene	82.
9	*	Benzo(ghi)perylene	188.
10		Benzo(k)fluoranthene	76.
11		Benzyl alcohol	90.
12		Benzylbutylphthalate	76.
13		Bis(2-chloroethoxy)methane	74.
14		Bis(2-chloroethyl)ether	72.
15		Bis(2-chloroisopropyl)ether	70.
16		Bis(2-ethylhexyl)phthalate	84.
17		4-Bromophenylphenylether	66.
18		Carbazole	ND
19		4-Chloroaniline	ND
20		2-Chloronaphthalene	90.
21		4-Chlorophenylphenylether	76.
22		Chrysene	82.
23	*	Dibenz(a,h)anthracene	168.
24		Dibenzofuran	62.
25		1,2-Dichlorobenzene	90.
26		1,3-Dichlorobenzene	88.
27		1,4-Dichlorobenzene	90.
28		3,3'-Dichlorobenzidine	ND
29		Diethylphthalate	80.
30		Dimethylphthalate	78.
31		Di-n-butylphthalate	120.
32		Dinitrobenzene	ND
33		2,4-Dinitrotoluene	114.
34		2,6-Dinitrotoluene	112.
35		Di-n-octylphthalate	68.
36		Diphenyl hydrazine	ND
37		Fluoranthene	98.
38		Fluorene	96.
39		Hexachlorobenzene	88.
40		Hexachlorobutadiene	92.
41		Hexachlorocyclopentadiene	ND
42		Hexachloroethane	84.
43	*	Indeno(1,2,3-cd)pyrene	170.
44		Isophorone	100.
45		2-Methylnaphthalene	61.
46		Naphthalene	90.
47		2-Nitroaniline	ND
48		3-Nitroaniline	ND
49		4-Nitroaniline	ND
50		Nitrobenzene	88.

DESCRIPTION : SS1D050

EMS SAMPLE# : SOX-STD. DATA FILE: >9629B::B3

RECEIVED APR 15

51		N-nitrosodiphenylamine	ND
52		N-nitroso-dipropyl-amine	64.
53		Phenanthrene	88.
54	**	2-Picoline	200.
55		Pyrene	98.
56	**	Pyridine	ND
57		Tetrachlorobenzenes	ND
58		Toluenediamine	ND
59		1,2,4-Trichlorobenzene	88.
		ACID	
1	*	Benzoic acid	ND
2	*	2-Chlorophenol	75.
3	*	2,4-Dichlorophenol	78.
4	*	2,4-Dimethylphenol	64.
5	**	4,6-Dinitro-2-methylphenol	44.
6	**	2,4-Dinitrophenol	19.
7	*	2-Methylphenol	150.
8	*	4-Methylphenol	75.
9	*	2-Nitrophenol	79.
10	*	4-Nitrophenol	89.
11	*	4-Chloro-3-Methylphenol	78.
12	*	Pentachlorophenol	72.
13	*	Phenol	74.
14	*	Tetrachlorophenol	ND
15	*	2,4,5-Trichlorophenol	78.
16	*	2,4,6-Trichlorophenol	78.
		PESTICIDES	
1		Aldrin	94.
2		alpha-BHC	98.
3		alpha-Endosulfan	112.
4		beta-BHC	84.
5		beta-Endosulfan	108.
6	**	Chlordane	ND
7		p,p'-DDD	116.
8		p,p'-DDE	108.
9		p,p'-DDT	88.
10		delta-BHC	98.
11		Dieldrin	112.
12		Endosulfan sulfate	ND
13		Endrin	ND
14		Endrin aldehyde	114.
15		gamma-BHC (Lindane)	88.
16		Heptachlor	98.
17		Heptachlor epoxide	112.
18		Methoxychlor	76.
19	**	PCB-1016	ND
20	**	PCB-1242	ND
21	**	PBC-1248	ND
22	**	PCB-1254	ND
23	**	PCB-1260	ND
24	**	Toxaphene	ND

DESCRIPTION : SS1D050

EMS SAMPLE# : SOX-STD. DATA FILE: >9629B::B3

Surrogate Recovery (Phenols @ 100 MG/KG, BN @ 50 MG/KG)

1	2-Fluorophenol	99	%
2	Phenol-d5	101	%
3	Nitrobenzene-d5	95	%
4	2-Fluorobiphenyl	90	%
5	2,4,6-Tribromophenol	118	%
6	Terphenyl-d14	107	%

Detection Limits (MG/KG): 10
* Detection Limits (MG/KG): 25
** Detection Limits (MG/KG): 50

( ) Estimated Concentration below Detection Limit.

Other compounds identified

Dilution Factor 1