US EPA RECORDS CENTER REGION 5
474296

SAMPLING DATA

Confirmed X

SAMPLE PROPOSAL
FIT REGION V

1. Date Form Completed September 15, 1989
2. Account # FIL0333SA TDD # F05-8703-440

   EPA I.D. # ILD005454566
3. Site Name, City, State U.S. Steel Corporation, Joliet, Illinois
4. Team Leader Ted Nehrkorn Sampler Karen Spangler
5. Number and Type of Samples:

   Soil/Sediment 8 Surface Water _____ Ground Water _____

   Residential/Municipal Wells _____ Other _____

   Number of Blanks _____ Number of Duplicates _____
6. RAS Parameters Requested:

   A/B/N X Pest/PCB X Volatiles X Metals X Cyanide X

   SAS Parameters Requested: _____
7. Expected Sampling Date(s): October 23, 1989

   Expected Shipping Date(s): October 23, 1989
8. Lab Used For Analysis: Organic SOIL - SWOK

   Inorganic SOIL - WEYER

   SAS _____
9. Case Number 13005 SAS Number _____
10. Airbill Numbers:

    Organic Lab SWOK 1060848434 # Coolers 1 # Samples 8 Soils 10/25

    Inorganic Lab WEYER 1060848445 # Coolers 1 # Samples 8 Soils 10/25

    CRL/SAS Lab _____ # Coolers _____ # Samples _____

Complete Called

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION S1

SAMPLING DATE 10/25/89 SAMPLING TIME 1415

ORGANIC TRAFFIC NUMBER EFJ12

INORGANIC TRAFFIC NUMBER MEFE97

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126513	F9206163
8 oz glass	Extractables	5-126514	"
2 - 120ml glass	VOA	5-126515, 16	D8025139

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

black, sandy

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION S2

SAMPLING DATE 10/25/89 SAMPLING TIME 1425

ORGANIC TRAFFIC NUMBER EFJ13

INORGANIC TRAFFIC NUMBER MEFE98

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126517	F9206163
8 oz glass	Extractables	5-126518	"
2 - 120ml glass	VOA	5-126519,20	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:
black well-aerated loam

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:
bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 53

SAMPLING DATE 10/25/89 SAMPLING TIME 1445

ORGANIC TRAFFIC NUMBER EFJ14

INORGANIC TRAFFIC NUMBER MEFE99

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met/CN-	5-126521	F9206163
8 oz glass	Extractables	5-126522	"
2 - 120ml glass	VOA	5-126523, 24	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:
black well-aerated loam

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:
bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION S4

SAMPLING DATE 10/25/89 SAMPLING TIME 1500

ORGANIC TRAFFIC NUMBER EFJ15

INORGANIC TRAFFIC NUMBER MEDH 33

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126525	F9206163
8 oz glass	Extractables	5-126526	"
2 - 120ml glass	VOA	5-126527, 28	D8025131

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

wet black silty gravel sediment

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION S5

SAMPLING DATE 10/25/89 SAMPLING TIME 1530

ORGANIC TRAFFIC NUMBER EFJ16

INORGANIC TRAFFIC NUMBER ME DH34

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126529	F9206163
8 oz glass	Extractables	5-126530	"
2 - 120ml glass	VOA	5-126531,32	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

wet, rust-colored sandy sediment

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 56

SAMPLING DATE 10/25/89 SAMPLING TIME 1550

ORGANIC TRAFFIC NUMBER EFJ17

INORGANIC TRAFFIC NUMBER ME DH35

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126533	F9206163
8 oz glass	Extractables	5-126531	"
2 - 120ml glass	VOA	5-126535, 36	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

dark gray wet clay - sediment

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 57

SAMPLING DATE 10/25/89 SAMPLING TIME 1630

ORGANIC TRAFFIC NUMBER EFJ18

INORGANIC TRAFFIC NUMBER MEDH36

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met/CN-	5-126537	F9206133
8 oz glass	Extractables	5-126538	"
2 - 120ml glass	VOA	5-126539, 40	D8025139

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

black slag

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 58

SAMPLING DATE 10/25/89 SAMPLING TIME 1700

ORGANIC TRAFFIC NUMBER E EA67

INORGANIC TRAFFIC NUMBER ME DS09

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126541	F9206133
8 oz glass	Extractables	5-126542	"
2 - 120ml glass	VOA	5-126543,44	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

brown sandy loam

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

International Specialists in the Environment

CRL Receipt Date 11/27 FIT Receipt Date 12/27 Review Completed 1/11/90

TO: Nelkson

FROM: Mary Gzyra

SUBJECT: USS - Joliet

PAN: TL0333SA (1 hour charged for review) Case # 13005

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
# 8	Low Soil	# _____	Low Soil
_____	Low Water	_____	Low Water
_____	Drinking Water	_____	Drinking Water
_____	Other	_____	Other

Project Data Status _____ Completed!!

✓ Incomplete, awaiting Soil Moisture

FIT Data Review Findings:

Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 9 Page No. _____ Date Sampled 10/25

0759:2

recycled paper

3/1/1/80

Table 4-__
RESULTS OF CHEMICAL ANALYSIS OF
FIT-COLLECTED _____ SAMPLES

Physical State*	Waste Characteristics**	Category***	SI Memo	Sample Collection Information and Parameters / Compound Detected (values in µg/L or µg/kg)	Sample Number 1	2	3	4	5	6	7	8	9	10	11	12
				Date												
				Time												
				Well Depth (Feet)												
				CRL Log Number												
				CLP Organic Traffic Report Number	EFJ 12	13	14	15	16	17	18	EEA 67				
				CLP Inorganic Traffic Report Number												
				Temperature (°C)												
				Specific Conductivity (µmhos/cm)												
				pH												
				Volatile Organics												
Gas	A,D,G,I	OCC	HH	chloromethane												
Gas	A,D,G,I	OCC	HH	bromomethane												
Gas	A,D,G,I	OCC	HH	vinyl chloride												
Gas	A,D,G,I	OCC	HH	chloroethane												
Liquid	A,D,H,I	SOL	HH,CLA	methylene chloride	400 J	510 J					370 J					
Liquid	E,H,I,A	SOL	K,CLA	acetone			4 J	280	130 J	240 J						
Liquid	A,H,I	SOL	SH	carbon disulfide												
Liquid	A,D,G,I	SOL	HH	1,1-dichloroethene												
Liquid	A,D,H,G	SOL	HH	1,1-dichloroethane												
Liquid	A,D,G	SOL	HH	1,2-dichloroethene (total)					5 J							
Liquid	A,D	SOL	HH	chloroform												
Liquid	A,D,G	SOL	HH	1,2-dichloroethane												
Liquid	A,E,G	SOL	K,CLA	2-butanone (MEK)												
Liquid	A,D	SOL	HH	1,1,1-trichloroethane												
Liquid	A,D	SOL	HH	carbon tetrachloride												
Liquid	A,D,G	SOL	HYD	vinyl acetate												
Liquid	A,D	OCC	HH	bromodichloromethane												
Liquid	A,D,G	SOL	HH	1,2-dichloropropane												
Liquid	A,D,G	SOL	HH	cis-1,3-dichloropropene												
Liquid	A,D,G,B	SOL	HH	trichloroethene	1200	540 J			8 J							
Liquid	A,D	OCC	HH	dibromochloromethane												
Liquid	A,D	SOL	HH	1,1,2-trichloroethane												
Liquid	A,G	SOL	A	benzene												
Liquid	A,D,G	SOL	HH	trans-1,3-dichloropropene												
Liquid	A,D	SOL	HH,CLA	bromoform												
Liquid	A,E,G	SOL	K,CLA	4-methyl-2-pentanone												
Liquid	A,E,G	SOL	K	2-hexanone												
Liquid	A,D	SOL	HH	tetrachloroethene												
Liquid	A,G,E	SOL	A,CLA	toluene	190 J	1600	17	10 J	9	4 J	2180	52				
Liquid	A,D,E	SOL	HH	1,1,2,2-tetrachloroethane												
Liquid	A,D,G	SOL	HA	chlorobenzene								11				
Liquid	A,G	SOL	A	ethylbenzene												
Liquid	A,D,G	OCC	A	styrene												
Liquid	A,G	SOL	A	xylenes (total)			3 J									

Table 4- (Cont.)

Physical State*	Waste Characteristics**	Category***	SI Memo	Sample Collection Information and Parameters	Sample Number 1	2	3	4	5	6	7	8	9	10	11	12
				Semivolatile Organics												
S, thick 1	A,B,E	OCC	P	phenol							1400					
Liquid	A,D,B	OCC	HH	bis(2-chloroethyl)ether												
Liquid	A,D,B	OCC	P	2-chlorophenol												
Liquid	A,D,H	SOL	HA	1,3-dichlorobenzene												
Solid	A,D,H	OCC	HA	1,4-dichlorobenzene												
Liquid	A,D,H	SOL	A	benzyl alcohol												
Liquid	A,D,H	OCC	HA	1,2-dichlorobenzene												
Liquid	A,B	OCC	P	2-methylphenol												
	A,D	OCC	HH	bis(2-chloroisopropyl)ether												
Liquid	A,B	OCC	P	4-methylphenol												
	A	OCC	H-Amine	n-nitroso-di-n-dipropylamine												
Solid	A,D	OCC	HH	hexachloroethane												
Liquid	A,D	OCC	NA	nitrobenzene												
Liquid	A,D	OCC	H	isophorone												
Solid	A,D	OCC	P	2-nitrophenol												
Solid	A,B	OCC	P	2,4-dimethylphenol												
Solid	A	OCC	A	benzoic acid												
	A,D	OCC	HH	bis(2-chloroethoxy)methane												
Liquid	A,D	OCC	P	2,4-dichlorophenol												
Liquid	A,D	OCC	HA	1,2,4-trichlorobenzene												
Solid	A	OCC	PAH	naphthalene		1300			750 J	720 J						
Solid	A,D	OCC	HH	4-chloroaniline			950 J									
Liquid	A,D,B	OCC	HH	hexachlorobutadiene												
Solid	A,D	OCC	P	4-chloro-3-methylphenol												
Liquid	A,D	OCC	PAH	2-methylnaphthalene	250 J	2800				490 J	270 J					
Liquid	A,D,B	OCC	HH	hexachlorocyclopentadiene												
Solid	A,D	OCC	P	2,4,6-trichlorophenol												
Solid	A,D	OCC	P	2,4,5-trichlorophenol												
Liquid	A,D	OCC	PAH	2-chloronaphthalene												
Solid	A,D	OCC	NH	2-nitroaniline												
Liquid	A,D	OCC	PH,CLA	dimethylphthalate												
Solid	A,D	OCC	PAH	acenaphthylene		940				530 J						
Solid	A,D	OCC	NA	2,6-dinitrotoluene												
Solid	A,D	OCC	NH	3-nitroaniline												
Solid	A,D	OCC	PAH	acenaphthene					3800							
Solid	A,D,G	OCC	P	2,4-dinitrophenol												
Solid	A,D	OCC	P	4-nitrophenol												
Solid	A,D	OCC	A	dibenzofuran		1000			1800 J							
Solid	A,D	OCC	NA	2,4-dinitrotoluene												
Liquid	A,D	OCC	PH	diethylphthalate												
	A,D	OCC	HH	4-chlorophenyl-phenylether												
Solid	A,D	OCC	PAH	fluorene		890			3300	560 J						
Solid	A,D,E	OCC	NH	4-nitroaniline												
Solid	A,D	OCC	P	4,6-dinitro-2-methylphenol												
Solid	A,D	OCC	NH	n-nitrosodiphenylamine							480 J					
Liquid	A,D	OCC	HH	4-bromophenyl-phenylether												
Solid	A,D	OCC	HA	hexachlorobenzene												
Solid	A,D	OCC	P	pentachlorophenol												
Solid	A,D	OCC	PAH	phenanthrene	900	6200	720 J	770 J	27000	2800	960					

Table 4- (Cont.)

Physical State*	Waste Characteristics**	Category***	SI Memo	Sample Collection Information and Parameters	Sample Number 1	2	3	4	5	6	7	8	9	10	11	12
				Semivolatile Organics, Cont.												
Solid	A,D	OCC	PAH	anthracene		1200	190 J	140 J	6000	1300 J						
Liquid	A,D	OCC	PH,CLA	di-n-butylphthalate												
Solid	A,D	OCC	PAH	fluoranthene	540 J	5900	1400	1100	33000	5000	350 J					
Solid	A,D	OCC	PAH	pyrene	450 J	5600	1100	790 J	27000	4600	550 J					
Liquid	A,D	OCC	PH,CLA	butylbenzylphthalate												
	A,D	OCC	HA	3,3'-dichlorobenzidine												
Solid	A,D	OCC	PAH	benzo[a]anthracene	350 J	4300	850 J	450 J	22000	3700						
Solid	A,D	OCC	PAH	chrysene	510 J	5200	870 J	530 J	25000	4400						
Liquid	A,D	OCC	PH,CLA	bis(2-ethylhexyl)phthalate			1100			3000	3100					
Liquid	A,D	OCC	PH,CLA	di-n-octylphthalate												
Solid	A,D	OCC	PAH	benzo[b]fluoranthene	610 J	7700		820 J	26000	6300						
Solid	A,D	OCC	PAH	benzo[k]fluoranthene					19000							
Solid	A,D,K,L	OCC	PAH	benzo[a]pyrene	310 J	4500	890 J	520 J	25000	4600						
Solid	A,D	OCC	PAH	indeno[1,2,3-cd]pyrene	330 J	2800	660 J	410 J	17000	2600						
Solid	A,D	OCC	PAH	dibenzo[a,h]anthracene					7600							
Solid	A,D	OCC	PAH	benzo[g,h,i]perylene	310 J	2800	850 J	400 J	15000	2400						
				Pesticides/PCBs												
Solid	A,D	PSD	PEST	alpha BHC												
Solid	A,D	PSD	PEST	beta BHC												
Solid	A,D	PSD	PEST	delta BHC												
Solid	A,D	PSD	PEST	gamma BHC (Lindane)												
Solid	A,D	PSD	PEST	Heptachlor												
Solid	A,D	PSD	PEST	Aldrin	26	250	30		250	45	28					
Solid	A,D	PSD	PEST	Heptachlor epoxide	19	240					55					
Solid	A,D	PSD	PEST	Endosulfan I					63							
Solid	A,D,E	PSD	PEST	Dieldrin			82				43					
Solid	A,D	PSD	PEST	4,4'-DDE					62							
Solid	A,D	PSD	PEST	Endrin												
Solid	A,D	PSD	PEST	Endosulfan II			130									
Solid	A,D	PSD	PEST	4,4'-DDD												
Solid	A,D	PSD	PEST	Endosulfan sulfate												
Solid	A,D	PSD	PEST	4,4'-DDT			370									
Solid	A,D	PSD	PEST	Methoxychlor (Mariate)												
Solid	A,D	PSD	PEST	Endrin ketone												
Solid	A,D	PSD	PEST	alpha Chlordane		120 J	86 J									
Solid	A,D	PSD	PEST	gamma Chlordane		200	110 J		220 J							
Solid	A,D	PSD	PEST	Toxaphene												
Liquid	A,D	OCC	PCB	Aroclor 1016												
Liquid	A,D	OCC	PCB	Aroclor 1221												
Liquid	A,D	OCC	PCB	Aroclor 1232												
Liquid	A,D	OCC	PCB	Aroclor 1242												
Liquid	A,D	OCC	PCB	Aroclor 1248												
Liquid	A,D	OCC	PCB	Aroclor 1254												
Liquid	A,D	OCC	PCB	Aroclor 1260												

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

FIT Inspection Date: October 25, 1989

CERCLIS Site Name: U.S. Steel Corporation - Joliet Works

Site Address: 927 Collins Street Joliet IL

Recipient Information: J. David Moniot/USSteel
Name
Director, Plant Environmental Projects
Title
USS Technical Center 4000 Tech Center Drive
Street Address
Monroeville PA 15146
City State Zip Code
412-825-2417
Telephone Number

Ecology and Environment, Inc. has been retained by the United States Environmental Protection Agency (U.S. EPA) under contract 68-01-7347 for the purpose of evaluating sites under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), and the Superfund Amendments and Reauthorization Act (SARA).

A copy of the report regarding the inspection conducted at the above-referenced property will be forwarded by the U.S. EPA within 6 months. If a copy of the inspection report is not received within 6 months of the inspection date noted above, a written request may be sent to the U.S. EPA representative indicated below.

It is essential to include the U.S. EPA Identification Number listed below to ensure that your request is properly referenced.

U.S. EPA Identification Number ILD 005454566

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-8703-410; PAN: FIL03335A
Yellow: Recipient
Pink: U.S. EPA

RECEIPT FOR SAMPLES

U.S. EPA, 230 S. Dearborn St., Chicago, IL 60604

U. S. EPA ID NO ILD005454566

PROJ. ACCT. NO. FIL0333SA

TDD F05-8703-440

SPLIT SAMPLES ACCEPTED( ) DECLINED(✓)

FACILITY/OCCUPANT NAME US Steel / J. David Moriot

FACILITY/OCCUPANT ADDRESS 4000 Tech Center Drive Monroeville PA 15146

SAMPLE NUMBER	DATE	TIME	SPLIT SAMPLES (✓)	OTR#	ITR#	DESCRIPTION OF SAMPLE LOCATIONS	SEMIVOLATILES	PESTICIDES/PCBS	VOLATILES	METALS	CYANIDE			MATRIX
S1	10/25/89	1415		EFJ12	MEFE97	S1	✓	✓	✓	✓	✓			SOIL
S2	10/25/89	1425		EFJ13	MEFE98	S2	✓	✓	✓	✓	✓			SOIL
S3	10/25/89	1445		EFJ14	MEFE99	S3	✓	✓	✓	✓	✓			SOIL

TRANSFERRED BY Ted W. Zehnkern (Signature) 10/25/89 (Date) 17:25 (Time)

RECEIVED BY: John M. Zaborske (Signature) 10/25/89 (Date) 17:27 (Time)

TITLE

TELEPHONE

DISTRIBUTION
WHITE: FIT SITE FILE
YELLOW: FACILITY/OCCUPANT
GREEN: FIT SAMPLE MANAGEMENT
PINK: U.S. EPA

RECEIPT FOR SAMPLES

U.S. EPA, 230 S. Dearborn St., Chicago, IL 60604

U. S. EPA ID NO ILD005454566

PROJ. ACCT. NO. FIL03335A

TDD F05-8703-440

SPLIT SAMPLES ACCEPTED(✓) DECLINED( )

FACILITY/OCCUPANT NAME American Steel & Wire Corporation/Elaine A. Price

FACILITY/OCCUPANT ADDRESS 4300 E. 49th Street Cuyahoga Heights OH 44125

SAMPLE NUMBER	DATE	TIME	SPLIT SAMPLES (✓)	OTR#	ITR#	DESCRIPTION OF SAMPLE LOCATIONS	SEMIVOLATILES	PESTICIDES/PCBS	VOLATILES	METALS	CYANIDE			MATRIX
~~S1~~	~~10/25/89~~			~~EFJ12~~	~~MEFE97~~	~~S1~~	✓	✓	✓	✓	✓			~~SOIL KMS~~
~~S2~~	~~10/25/89~~			~~EFJ13~~	~~MEFE98~~	~~S2~~	✓	✓	✓	✓	✓			~~SOIL KMS~~
~~S3~~	~~10/25/89~~			~~EFJ14~~	~~MEFE99~~	~~S3~~	✓	✓	✓	✓	✓			~~SOIL KMS~~
S4	10/25/89	1500	✓	EFJ15	MEDH33	S4	✓	✓	✓	✓	✓			SOIL
S5	10/25/89	1530	✓	EFJ16	MEDH34	S5	✓	✓	✓	✓	✓			SOIL
S6	10/25/89	1550	✓	EFJ17	MEDH35	S6	✓	✓	✓	✓	✓			SOIL
S7	10/25/89	1630	✓	EFJ18	MEDH36	S7	✓	✓	✓	✓	✓			SOIL
~~S8~~	~~10/25/89~~	~~1700~~	✓	~~EEA67~~	~~MEJ509~~	~~S8~~	✓	✓	✓	✓	✓			~~SOIL~~ TWN

TRANSFERRED BY

Ted W. Nehlsen (Signature) 10/25/89 (Date) 17:05 (Time)

RECEIVED BY:

Charles H. Kelly (Signature) 10/25/89 (Date) 5:05 PM (Time)

DISTRIBUTION
WHITE: FIT SITE FILE
YELLOW: FACILITY/OCCUPANT
GREEN: FIT SAMPLE MANAGEMENT
PINK: U.S. EPA

TITLE Maint. Mgr

TELEPHONE 815 740-7222

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

FIT Inspection Date: October 25, 1989

CERCLIS Site Name: U.S. Steel Corporation - Joliet Works

Site Address: 927 Collins Street Joliet IL

Recipient Information: Elaine A. Price / American Steel & Wire Corp.
Name
Manager, Executive Programs
Title
4300 E. 49th Street
Street Address
Cuyahoga Heights OH 44125
City State Zip Code
216-883-3800
Telephone Number

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A copy of the report regarding the inspection conducted at the above-referenced property will be forwarded by the U.S. EPA within 6 months. If a copy of the inspection report is not received within 6 months of the inspection date noted above, a written request may be sent to the U.S. EPA representative indicated below.

It is essential to include the U.S. EPA Identification Number listed below to ensure that your request is properly referenced.

U.S. EPA Identification Number ILD005454566

Address requests to:

William Messenger, Chief
Pre-Remedial Unit (5HR11)
United States Environmental Protection Agency
230 South Dearborn Street
Chicago, Illinois 60604
(312) 353-1057

Distribution:
White: FIT Site File; TDD No.: F05-8703-140; PAN: FIL0333SA
Yellow: Recipient
Pink: U.S. EPA

Confirmed X

SAMPLE PROPOSAL
FIT REGION V

1. Date Form Completed September 15, 1989
2. Account # FIL03335A TDD # F05-8703-440

   EPA I.D. # ILD005454566
3. Site Name, City, State U.S. Steel Corporation, Joliet, Illinois
4. Team Leader Ted Nehrkorn Sampler Karen Spangler
5. Number and Type of Samples:

   Soil/Sediment 8 Surface Water ____ Ground Water ____

   Residential/Municipal Wells ____ Other ____

   Number of Blanks ____ Number of Duplicates ____
6. RAS Parameters Requested:

   A/B/N X Pest/PCB X Volatiles X Metals X Cyanide X

   SAS Parameters Requested: ____
7. Expected Sampling Date(s): October 23, 1989

   Expected Shipping Date(s): October 23, 1989
8. Lab Used For Analysis: Organic SOIL - SWOK

   Inorganic SOIL - WEYER

   SAS ____
9. Case Number 13005 SAS Number ____
10. Airbill Numbers:

    Organic Lab 1060848434 # Coolers 1 # Samples 8

    Inorganic Lab 1060848445 # Coolers 1 # Samples 8

    CRL/SAS Lab ____ # Coolers ____ # Samples ____

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report

(For CLP Use Only)

Case Number: 13005

SAS No. (if applicable):

1. Type of Activity (Check one): ENF, NPLD, RA, [X] SI, STSI, ER, O&M, RD, ST, Other *(Specify)*, ESI, PA, RIFS, STPA

2. Region Number: V

Sampling Co.: FIT

Sampler (Name): Karen M. Spangler

4. Date Shipped: 10/25/89

Airbill Number: 1060848434

Carrier: F

Non-Superfund Program

Site Name: U.S. Steel - Joliet Works

City, State: Joliet IL

Site Spill ID

3. Ship To:
SW Labs of Oklahoma
1700 W. Albany
Suite C
Broken Arrow OK 74012
Attn: Chuck Hoover

Triple volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Sample Description *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) *(Specify)*

CLP Sample Number *(From labels)*	(A) Sample Description *(From box 1)*	(B) Concentration L=low M=med H=high	(C) RAS Analysis VOA	BNA	Pest/PCB	(D) Special Handling	(E) Station Location	(F) Date/Time of Sample Collection	(G) Corresponding CLP Inorganic Sample Number
EFJ12	5	L	✓	✓	✓				MEFE97
EFJ13	5	L	✓	✓	✓				MEFE98
EFJ14	5	L	✓	✓	✓				MEFE99
EFJ15	5	L	✓	✓	✓				MEDH33
EFJ16	5	L	✓	✓	✓				MEDH34
EFJ17	5	L	✓	✓	✓				MEDH35
EFJ18	5	L	✓	✓	✓				MEDH36
EEA67	5	L	✓	✓	✓				MEDS09

Shipment Complete

EPA Form 9110-2 (8-88) Replaces EPA Form 2075-7, which may be used. Blue - SMO Copy Pink - Region Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

Cooler #: 653

CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: IL0333
PROJECT NAME: F05-8703-440 / 13005
SAMPLERS: (Signature) Karen M Spangler

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8 oz Extractable	120 ml VOA					TAG #'s	REMARKS Low Conc Matrix
EFJ12	10/25/89	1415		✓	S1	3	1	2					5-126514-16	SOIL
EFJ13	10/25/89	1425		✓	S2	3	1	2					5-126518-20	SOIL
EFJ14	10/25/89	1445		✓	S3	3	1	2					5-126522-24	SOIL
EFJ15	10/25/89	1500		✓	S4	3	1	2					5-126526-28	SOIL
EFJ16	10/25/89	1530		✓	S5	3	1	2					5-126530-32	SOIL
EFJ17	10/25/89	1560		✓	S6	3	1	2					5-126534-36	SOIL
EFJ18	10/25/89	1630		✓	S7	3	1	2					5-126538-40	SOIL
EEA67	10/25/89	1700		✓	S8	3	1	2					5-126542-44	SOIL
													Lot #: 8 oz: F9206163	S1-S6
													F9206133	S7,S8
													120ml: D8025134	All

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Karen M Spangler	10/25/89 1830				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Shipped Fed. Ex. to: SWOK Airbill #: 1060848434 Custody Seals: 12567, 12568	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

05-01344

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PACKAGE TRACKING NUMBER 1060848434

1060848434

SENDER'S COPY

Sender's Federal Express Account Number: 1270-9910-3
Date: 10/25/89

1 From (Your Name) Please Print: Karen Sparger
Your Phone Number (Very Important): (312) 663-9415
Company: Ecology & Environment, Inc.
Department/Floor No.:
Street Address: 5634 N. Northwest Hwy
City: Chicago State: IL ZIP Required: 60646

2 To (Recipient's Name) Please Print: Chuck Hoover
Recipient's Phone Number (Very Important): (918) 251-2858
Company: Southwest Labs of Oklahoma
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. ® Zip Codes.): 1700 W. Albany Suite C
City: Broken Arrow State: OK ZIP Required: 74012

3 YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.): HFT1665 FI40553KAI

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address:
City: State: ZIP Required:

PAYMENT ☐ Bill Sender ☐ Bill Recipient's FedEx Acct. No. ☒ Bill 3rd Party FedEx Acct. No. ☐ Bill Credit Card ☐ Cash
10200-7751-4

4 SERVICES

1 ☒ PRIORITY 1 Overnight Delivery
2 ☐ COURIER-PAK OVERNIGHT ENVELOPE*
3 ☐ OVERNIGHT BOX
4 ☐ OVERNIGHT TUBE
5 ☐ STANDARD AIR Delivery not later than second business day
6 ☐ OVERNIGHT LETTER*
7 ☐
8 ☐
9 ☐
10 ☐

*Declared Value Limit $100.

DELIVERY AND SPECIAL HANDLING

1 ☐ HOLD FOR PICK-UP (Fill in Box H)
2 ☒ DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) ☐
4 ☐ DANGEROUS GOODS (Extra charge)
5 ☐ CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge) (Release Signature Not Applicable)
6 ☐ DRY ICE _____ Lbs.
7 ☐ OTHER SPECIAL SERVICE _____
8 ☐
9 ☐ SATURDAY PICK-UP (Extra charge)
10 ☐
11 ☐
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

PACKAGES	WEIGHT	YOUR DECLARED VALUE (See right)	OVER SIZE
1	LBS		
	LBS		
	LBS		
	LBS		
Total	Total	Total	

Received At
1 ☐ Regular Stop
2 ☐ On-Call Stop
3 ☐ Drop Box 4 ☐ B.S.C. 5 ☐ Station

FEDEX Corp. Employee No.:

Date/Time for FEDEX Use

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Other 1
Other 2
Total Charges

PART #111800
REVISION DATE 7/88
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009

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EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Inorganic Traffic Report
(For CLP Use Only)

Case Number: 13005
SAS No. (if applicable):

1. Type of Activity (Check one): ENF, NPLD, RA, [X] SI, STSI, ER, O&M, RD, ST, Other *(Specify)*, ESI, PA, RIFS, STPA

2. Region Number: V
Sampling Co.: FIT
Sampler (Name): Karen M. Spangler

4. Date Shipped: 10/25/89
Airbill Number: 1060848445
Carrier: F

Non-Superfund Program:
Site Name: U.S. Steel - Joliet Works
City, State: Joliet IL
Site Spill ID:

3. Ship To: Weyerhaeuser
32901 Weyerhaeuser Way
Federal Way WA 98003
Attn: Bonnie Chappel

Double volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Sample Description *(Enter in Column A)*
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil/Sediment
6. Oil (SAS)
7. Waste (SAS)
8. Other (SAS) *(Specify)*

CLP Sample Number *(From labels)*	(A) Sample Description *(From box 1)*	(B) Concentration L=low M=med H=high	(C) RAS Analysis: Total Metals	(C) RAS Analysis: Cyanide	(D) Special Handling	(E) Station Location	(F) Date/Time of Sample Collection	(G) Corresponding Organic Sample Number
MEFE97	5	L	X	X				EFJ12
MEFE98	5	L	X	X				EFJ13
MEFE99	5	L	X	X				EFJ14
MEDH33	5	L	X	X				EFJ15
MEDH34	5	L	X	X				EFJ16
MEDH35	5	L	X	X				EFJ17
MEDH36	5	L	X	X				EFJ18
MEDS09	5	L	X	X				EEA67

Shipment Complete

EPA Form 9110-1 (8-88) Replaces EPA Form 2075-6, which may be used. Green - SMO Copy Pink - Region Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

Cooler #: LL-V 03

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: ILO333
PROJECT NAME: F05-8703-440 / 13005
SAMPLERS: (Signature) Karen M Spangler

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	8 oz glass Methanol Extract Kit						REMARKS Tag #	Low Conc. Matrix
MEFE97	10/25/89	1415		✓	S1	1	1						5-126513	SOIL
MEFE98	10/25/89	1425		✓	S2	1	1						5-126517	SOIL
MEFE99	10/25/89	1445		✓	S3	1	1						5-126521	SOIL
MEDH33	10/25/89	1500		✓	S4	1	1						5-126525	SOIL
MEDH34	10/25/89	1530		✓	S5	1	1						5-126529	SOIL
MEDH35	10/25/89	1550		✓	S6	1	1						5-126533	SOIL
MEDH36	10/25/89	1630		✓	S7	1	1						5-126537	SOIL
MEDE09	10/25/89	1700		✓	S8	1	1						5-126541	SOIL
													LOT #: F9206163	S1-S6
													F9206133	S7, S8

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Karen M Spangler	10/25/89 1830				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks Shipped Fed Ex to: WEYER Airbill #: 1060848445 Custody Seals: 93999, 94000	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 13300

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PACKAGE TRACKING NUMBER 1060848445

1060848445

SENDER'S COPY

Sender's Federal Express Account Number: 1270-9910-3
Date: 10/25/89

1 From (Your Name) Please Print: Karen Sparler
Your Phone Number (Very Important): (312) 63-9415
Company: Ecology & Environment, Inc
Department/Floor No.:
Street Address: 5634 N. Northwest Hwy
City: Chicago State: IL ZIP Required: 60646

2 To (Recipient's Name) Please Print: Bonnie Chappel
Recipient's Phone Number (Very Important): (206) 924-6611
Company: Weyerhaeuser
Department/Floor No.:
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. ® Zip Codes.): 32901 Weyerhaeuser Way
City: Federal Way State: WA ZIP Required: 98003

3 YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.): FET1305 - FIL0335AI

H IF HOLD FOR PICK-UP, Print FEDEX Address Here
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City: State: ZIP Required:

PAYMENT ☐ Bill Sender ☐ Bill Recipient's FedEx Acct. No. ☒ Bill 3rd Party FedEx Acct. No. ☐ Bill Credit Card ☐ Cash
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4 SERVICES

1 ☒ PRIORITY 1 Overnight Delivery
2 ☐ COURIER-PAK OVERNIGHT ENVELOPE*
3 ☐ OVERNIGHT BOX
4 ☐ OVERNIGHT TUBE
5 ☐ STANDARD AIR Delivery not later than second business day
6 ☐ OVERNIGHT LETTER*
7 ☐
8 ☐
9 ☐
10 ☐
*Declared Value Limit $100.

DELIVERY AND SPECIAL HANDLING

1 ☐ HOLD FOR PICK-UP (Fill in Box H)
2 ☒ DELIVER WEEKDAY
3 DELIVER SATURDAY (Extra charge) ☐
4 ☐ DANGEROUS GOODS (Extra charge)
5 ☐ CONSTANT SURVEILLANCE SERVICE (CSS) (Extra charge) (Release Signature Not Applicable)
6 ☐ DRY ICE _____ Lbs.
7 ☐ OTHER SPECIAL SERVICE _____
8 ☐
9 ☐ SATURDAY PICK-UP (Extra charge)
10 ☐
11 ☐
12 ☐ HOLIDAY DELIVERY (If offered) (Extra charge)

PACKAGES	WEIGHT	YOUR DECLARED VALUE (See right)	OVER SIZE
1	LBS		
	LBS		
	LBS		
	LBS		
Total	Total	Total	

Received At
1 ☐ Regular Stop
2 ☐ On-Call Stop
3 ☐ Drop Box 4 ☐ B.S.C. 5 ☐ Station

FEDEX Corp. Employee No.

Date/Time for FEDEX Use

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Release Signature: _____

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Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

PART #111800
REVISION DATE 7/88
PRINTED IN U.S.A. GBFE
009

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SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 51

SAMPLING DATE 10/25/89 SAMPLING TIME 1415

ORGANIC TRAFFIC NUMBER EFJ12

INORGANIC TRAFFIC NUMBER MEFE97

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met / CN-	5-126513	F9206163
8 oz glass	Extractables	5-126514	"
2 - 120ml glass	VOA	5-126515, 16	D8025139

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

black, sandy

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION S2

SAMPLING DATE 10/25/89 SAMPLING TIME 1425

ORGANIC TRAFFIC NUMBER EFJ13

INORGANIC TRAFFIC NUMBER MEFE98

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126517	F9206163
8 oz glass	Extractables	5-126518	"
2 - 120ml glass	VOA	5-126519,20	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

black well-aerated loam

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 53

SAMPLING DATE 10/25/89 SAMPLING TIME 1445

ORGANIC TRAFFIC NUMBER EFJH

INORGANIC TRAFFIC NUMBER MEFE99

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met/CN-	5-126521	F9206163
8 oz glass	Extractables	5-126522	"
2 - 120ml glass	VOA	5-126523, 24	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:
black well-aerated loam

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:
bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION S4

SAMPLING DATE 10/25/89 SAMPLING TIME 1500

ORGANIC TRAFFIC NUMBER EFJ15

INORGANIC TRAFFIC NUMBER MEDH33

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met/CN-	5-126525	F9206163
8 oz glass	Extractables	5-126526	"
2 - 120ml glass	VOA	5-126527, 28	D8025131

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

wet black silty gravel sediment

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 55

SAMPLING DATE 10/25/89 SAMPLING TIME 1530

ORGANIC TRAFFIC NUMBER EFJ16

INORGANIC TRAFFIC NUMBER ME DH34

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met/CN-	5-126529	F9206163
8 oz glass	Extractables	5-126530	"
2 - 120ml glass	VOA	5-126531,32	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:
wet, rust-colored sandy sediment

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:
bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 56

SAMPLING DATE 10/25/89 SAMPLING TIME 1550

ORGANIC TRAFFIC NUMBER EFJ17

INORGANIC TRAFFIC NUMBER MEDH35

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126533	F9206163
8 oz glass	Extractables	5-126534	"
2 - 120ml glass	VOA	5-126535, 36	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

dark gray wet clay - sediment

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION 57

SAMPLING DATE 10/25/89 SAMPLING TIME 1630

ORGANIC TRAFFIC NUMBER EFJ18

INORGANIC TRAFFIC NUMBER MEDH36

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126537	F9206133
8 oz glass	Extractables	5-126538	"
2 - 120ml glass	VOA	5-126539, 40	D8025139

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:
black slag

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:
bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

SAMPLE DESCRIPTION

SITE NAME/TDD# U.S. Steel - Joliet Works / F05-8703-440

CASE NUMBER 13005

SAMPLE #/STATION LOCATION S8

SAMPLING DATE 10/25/89 SAMPLING TIME 1700

ORGANIC TRAFFIC NUMBER EEA67

INORGANIC TRAFFIC NUMBER MEDS09

BOTTLE	ANALYSIS	TAG NUMBERS	LOT NUMBER
8 oz glass	Met /CN-	5-126541	F9206133
8 oz glass	Extractables	5-126542	"
2 - 120ml glass	VOA	5-126543,44	D8025134

PHYSICAL DESCRIPTION AT TIME OF COLLECTION:

brown sandy loam

PHYSICAL CHANGES FROM TIME OF COLLECTION UNTIL SHIPMENT:

bags of ice over samples

INSTRUMENT READINGS

pH NA

CONDUCTIVITY NA

TEMPERATURE NA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 12/18/89

SUBJECT: Review of Region V CLP Data
Received for Review on Nov 27, 1989

12/27/89

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory
Patrick J. Chuille for

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: U.S. Steel Corp - Joliet SMO case No. 13005

EPA Data Set No. _____ No. of Samples: 8 D.U./Activity Numbers _____

CRL No. _____

SMO Traffic No. EEA 67, EFJ 12-18

CLP Laboratory: SWOK Hrs. Required for Review: 10+1=11 WKW

Following are our findings:

This review covers eight soil samples (EEA67, EFJ 12-18) submitted for complete organic analysis. The reviewer's narrative and qualifiers follow.

Rob Wilhelm
11 DECEMBER 89
WESTON / ESAT

( ) Data are acceptable for use.
(✓) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Duane Geuder, Quality Assurance Officer, EPA Support Services
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

EPA FORM 1320-6 (Rev. 5/87)

Region V

ORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 13005 SITE U.S. Steel Corp - Joliet

LABORATORY SWOK NO. OF SAMPLES/ MATRIX 8 Soil

SDG # EEA67 REVIEWER (IF NOT ESD) Weston / ESAT

SOW# 2/88 REVIEWER'S NAME Rob Wilhelm

DPO: ACTION _____ FYI _____ COMPLETION DATE 12/12/89

DATA ASSESSMENT SUMMARY

		VOA	BNA	PEST	OTHER
1.	HOLDING TIMES	O	O	O	
2.	GC/MS TUNE/INSTR. PERFORM.	O	O	O	
3.	CALIBRATIONS	O	O	O	
4.	BLANKS	O	O	O	
5.	SURROGATES	O	O	O	
6.	MATRIX SPIKE/DUP	O	O	O	
7.	OTHER QC	O	O	O	
8.	INTERNAL STANDARDS	O	O	-	
9.	COMPOUND IDENTIFICATION	-	-	-	
10.	SYSTEM PERFORMANCE	-	-	-	
11.	OVERALL ASSESSMENT	O	O	O	

O = Data had no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.

ACTION ITEMS: _____

AREAS OF CONCERN: _____

NOTABLE PERFORMANCE: _____

DATA QUALIFIERS

Contractor: SWOK

Case 13005

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

① Holding Time -

The date of sampling does not appear on the Organic Traffic Report. Therefore it is assumed that the date of sampling is the same as the date of shipping. In this case, all samples were extracted and/or analyzed within the holding times for soil samples.

② GC/MS Tuning -

All GC/MS tuning data are within the required QC limits.

③ Calibration

All volatile and semivolatile compounds not meeting the calibration QC requirements are listed on the attached calibration outlier sheets along with the appropriate qualifiers. All pesticide/PCB calibration data meet the QC requirements.

④ Method Blanks -

All volatile blanks VBLK1 VBLK2 and VBLK3 contain detectable amounts of chloroform. VBLK2 and VBLK3 also contain low levels of methylene chloride. All samples associated with these blanks contain these contaminants at a level less than ten times the amount in the blank for methylene chloride and less than five times the amount in the blank for chloroform. Therefore, all positive values for these contaminants in the associated samples are qualified as undetected, U. All semivolatile and pesticide/PCB blanks are clean. Refer to Form IV for sample/blank association.

⑤ Surrogate Recovery -

Recoveries of all surrogates in all fractions volatile, semivolatile and pesticide/PCB, were within the required QC limits.

Reviewed by: Rob Wilhelm

Phone: (312) 353-2960

Date: 12 DECEMBER 89

DATA QUALIFIERS

Contractor: Swook

Case 13005

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

(6) Matrix Spike / Matrix Spike Duplicate -

Sample EFJ16 was used as the low level volatile matrix spike/matrix spike duplicate sample and EFJ18 was the medium level MS/MSD sample. EFJ18 had a relative percent difference of 27% for 1,1-dichloroethene.

Recovery of all spiking compounds in the semivolatile fraction was within the QC limits for EFJ12MS and EFJ12MSD.

Sample EFJ12 was also used as the pesticide/PCB MS/MSD sample. EFJ12 MS has high recoveries for heptachlor, aldrin, dieldrin, endrin and 4,4'-DDT. EFJ12 MSD also had high recoveries for heptachlor endrin and 4,4'-DDT. Upon inspection of the matrix spike and duplicate, all recoveries seem to be about twice the expected values. Even recoveries within the QC limits are near the high end of the range. It seems as though the spiking compounds were added twice to the matrix spike and duplicate. This incident however seems to be isolated and therefore doesn't warrant qualification of samples.

(7) Field Duplicates and Blanks -

No field duplicates or blanks were identified with this case.

(8) Internal Standard -

All internal standard areas in both the volatile and semivolatile fractions are within the required QC limits.

(9) Compound Quantitation and Reported Detection Limits -

Correct detection limits were reported and quantitation was performed properly with respect to dilution and sample size.

Reviewed by: Pete Wilhelm

Phone: (312) 353-2960

Date: 12 DECEMBER 89

DATA QUALIFIERS

Contractor: SWOK

Case 13005

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

(10) Other Case-Specific Problems -
None

Reviewed by: Rob Wilhelm
Phone: (312) 353-2960
Date: 12 DECEMBER 89

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE MSL COMPOUNDS

CASE/SAS # 13005 CONTRACTOR Swook

Instrument # I	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	11/3/89			11/4/89 1501											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane															
Bromomethane															
Vinyl Chloride															
Chloroethane	.635	33.0	J												
Methylene Chloride															
Acetone	.323	41.3	J												
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform			J			J									
2-Butanone	.160	37.6	R	.171		R									
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane	.661			.847	27.6	J									
1,1,2-Trichloroethane															
Benzene															
Cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform	.512			.689	34.6	J									
2-Methyl-2-Pentanone															
2-Hexanone				.295		R									
Tetrachloroethene															
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

VBLK2	VBLK3
EEA67	EFJ15
EFJ16	EFJ14
EFJ16MS	
EFJ16MSD	
EFJ17	

Reviewer's Initials/Date: R 12/8/89

These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
VOLATILE HSL COMPOUNDS

CASE/SAS # - 13005 CONTRACTOR SWOK

Instrument # D	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	9/7/89			11/3/89 0816											
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Chloromethane	.755			.542	28.2	J									
Bromomethane															
Vinyl Chloride															
Chloroethane															
Methylene Chloride			J												
Acetone	.261		R	.164	37.2	R J									
Carbon Disulfide															
1,1-Dichloroethane															
1,1-Dichloroethene															
Trans-1,2-Dichloroethene															
Chloroform			J												
2-Butanone	.051	42.5	R	.053		R J									
1,2-Dichloroethane															
1,1,1-Trichloroethane															
Carbon Tetrachloride															
Vinyl Acetate															
Bromodichloromethane															
1,2-Dichloropropane															
Trans-1,3-Dichloropropene															
Trichloroethene															
Dibromochloromethane															
1,1,2-Trichloroethane	.298		R J												
Benzene															
cis-1,3-Dichloropropene															
2-Chloroethylvinylether															
Bromoform			J												
2-Methyl-2-Pentanone	.257		R J	.275		R J									
2-Hexanone	.143		R	.096	32.9	R J									
Tetrachloroethene			J												
1,1,2,2-Tetrachloroethane															
Toluene															
Chlorobenzene															
Ethylbenzene															
Styrene															
m-Xylene															
o/p-Xylene															

AFFECTED SAMPLES:

VSLK1
EFJ12
EFJ13
EFJ18
EFJ18MS
EFJ18MSD

Reviewer's Initials/Date: RD 12/8/89

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE HSL COMPOUNDS
(Page 1)

CASE/SAS # 13005 CONTRACTOR SWOK

Instrument # B	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	11/1/89			11/3/89 1731			11/6/89 0945			11/6/89 1551			11/7/89 0905		
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
Phenol															
bis(-2-Chloroethyl)Ether															
2-Chlorophenol															
1,3-Dichlorobenzene															
1,4-Dichlorobenzene															
Benzyl Alcohol															
1,2-Dichlorobenzene															
2-Methylphenol															
bis(2-chloroisopropyl)Ether	1.546									2.166	38.3	J	2.07	33.2	J
4-Methylphenol															
N-Nitroso-Di-n-Propylamine	.108									.143	32.4	J			
Hexachloroethane															
Nitrobenzene															
Isophorone															
2-Nitrophenol															
2,4-Dimethylphenol															
Benzoic Acid	.195			.143	26.7	J									
bis(2-Chloroethoxy)Methane															
2,4-Dichlorophenol															
1,2,4-Trichlorobenzene															
Naphthalene															
4-Chloroaniline															
Hexachlorobutadiene															
4-Chloro-3-Methylphenol															
2-Methylnaphthalene															
Hexachlorocyclopentadiene	.315									.240	36.0	J			
2,4,6-Trichlorophenol															
2,4,5-Trichlorophenol															
2-Chloronaphthalene															
2-Nitroaniline															
Dimethyl Phthalate															
Acenaphthylene															
3-Nitroaniline															
Acenaphthene															
2,4-Dinitrophenol															
4-Nitrophenol															
Dibenzofuran															

AFFECTED SAMPLES:

EFJ12	SBLKB	EFAG7
EFJ12MS		EFJ13
EFJ12MSD		EFJ14
		EFJ15
		EFJ17
		EFJ18

Reviewer Initials/Date: 12/8/89

* These flags should be applied to the analytes on the sample data sheets.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION V
CALIBRATION OUTLIERS
SEMIVOLATILE MSL COMPOUNDS
Page 2

CASE/SAS # 13005 CONTRACTOR SWOK

Instrument # TB	Init. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.			Cont. Cal.		
DATE/TIME:	11/1/89			11/3/89 1734			11/6/89 0945			11/6/89 1551			11/7/89 0905		
	RF	%RSD	*	RF	%D	*	RF	%D	*	RF	%D	*	RF	%D	*
2,4-Dinitrotoluene															
2,6-Dinitrotoluene															
Diethylphthalate															
4-Chlorophenyl-phenylether															
Fluorene															
4-Nitroaniline	.143												.196	37.1	J
4,6-Dinitro-2-Methylphenol															
N-Nitrosodiphenylamine															
4-Bromophenyl-phenylether															
Hexachlorobenzene															
Pentachlorophenol															
Phenanthrene															
Anthracene															
Di-n-Butylphthalate															
Fluoranthene															
Pyrene	1.216						1.551	27.6	J						
Butylbenzylphthalate															
Benzo(a)Anthracene															
bis(2-Ethylhexyl)Phthalate															
Chrysene															
Di-n-Octyl Phthalate															
Benzo(b)Fluoranthene															
Benzo(k)Fluoranthene	1.160									1.460	25.9	J			
Benzo(a)Pyrene															
Indeno(1,2,3-cd)Pyrene															
Dibenz(a,h)Anthracene															
Benzo(g,h,i)Perylene															

SEE PAGE 1 FOR AFFECTED SAMPLES.

* These flags should be applied to the analytes on the sample data sheets.

Reviewer's Initials/Date: RD 12/2/89

8/87

DATA REPORTING QUALIFIERS

For reporting results to EPA, the following result qualifiers are used. Additional flags or footnotes explaining results are encouraged. However, the definition of each flag must be explicit.

VALUE - If the result is a value greater than or equal to the detection limit, report the value.

U - Indicates compound was analyzed but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture. For example, if the sample had 24% moisture and a 1 to 10 dilution factor, the sample quantitation limit for phenol (330 U) would be corrected to:

$$\frac{(330\ U)}{D} \times df \qquad \text{where } D = \frac{100 - \%\ \text{moisture}}{100}$$

and df = dilution factor

$$\text{at 24\% moisture, } D = \frac{100-24}{100} - 0.76$$

$$\frac{(330\ U)}{.76} \times 10 = 4300\ U$$ rounded to the appropriate number of significant figures

For soil sample subjected to GPC clean-up procedures, the CRQL is also multiplied by 2, to account for the fact that only half of the extract is recovered.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration is 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for both dilution and percent moisture as discussed for the U flag, so that if a sample with 24% moisture and a 1 to 10 dilution factor has a calculated concentration of 300 ug/L and a sample quantitation limit of 430 ug/kg, report the concentration as 300J on Form I.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides $\geq$10 ng/ul in the final extract shall be confirmed by GC/MS.

DATA REPORTING QUALIFIERS - PAGE 2

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified TCL compound.

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed according to the specifications. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample and all concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that TIC is a suspected aldol-condensation product.

X - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the Sample Data Summary Package and the Case Narrative. If more than one is required, use "Y" and "Z", as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample.

EPA

United States Environmental Protection Agency
Contract Laboratory Program Sample Management Office
PO Box 818 Alexandria, VA 22313
703-557-2490 FTS 557-2490

Organic Traffic Report
(For CLP Use Only)

Case Number: 13005
SAS No. (if applicable): SDG # EEA67

1. Sample Description (Enter in Column A)
   1. Surface Water
   2. Ground Water
   3. Leachate
   4. Rinsate
   5. Soil/Sediment
   6. Oil (SAS)
   7. Waste (SAS)
   8. Other (SAS) (Specify)

2. Region Number: V
Sampling Co.: FIT
Sampler (Name): Karen M. Spangler

3. Ship To:
SW Labs of Oklahoma
1700 W. Albany
Suite C
Broken Arrow OK 74012
Attn: Chuck Hoover

4. Date Shipped: 10/25/89
Airbill Number: 1060848134
Carrier: F

Triple volume required for matrix spike/duplicate aqueous sample.

Ship medium and high concentration samples in paint cans.

See reverse for additional instructions.

5. Date Received: 10/26/89
Received by: Missy Sherman
Laboratory Contract Number: 68-01-7393-2
Unit Price: $1147.00

6. Transfer to:
Date Received:
Received by:
Contract Number:
Price:

CLP Sample Number (From labels)	(A) Sample Description (From box 1)	(B) Concentration L=low M=med H=high	(C) RAS Analysis VOA	BNA	Pest/PCB	(D) Special Handling	(E) Station Location	(F) Date/Time of Sample Collection	(G) Corresponding CLP Inorganic Sample Number	(H) Sample Condition on Receipt	(I) High Conc. Phases (Check below) Solid	Water—MIS Liq.	Non Water—MIS Liq.
EFJ12	5	L	✓	✓	✓				MEFE97				
EFJ13	5	L	✓	✓	✓				MEFE98				
EFJ14	5	L	✓	✓	✓				MEFE99				
EFJ15	5	L	✓	✓	✓				MEDH33				
EFJ16	5	L	✓	✓	✓				MEDH34				
EFJ17	5	L	✓	✓	✓				MEDH35				
EFJ18	5	L	✓	✓	✓				MEDH36	LAST SAMPLE IN SDG			
EEA67	5	L	✓	✓	✓				MEDS09				

Shipment Complete

EPA Form 9 (8-88) Replaces EPA Form 2075-7, which may be used. Blue - SMO Copy Pink - Region Copy White - Lab Copy for Return to SMO Yellow - Lab Copy

Southwest Laboratory of Oklahoma
1700 West Albany, Suite C / Broken Arrow, OK 74012
918-251-2858

CASE NARRATIVE

November 21, 1989

RECEIVED
NOV 22 1989
US EPA CENTRAL REGIONAL LAB.
536 S. CLARK ST.
CHICAGO, ILLINOIS 60605

CONTRACT: 68-01-7393

CASE NO.: 13005

SAMPLE NO.: EEA67, EFJ12 thru EFJ18

SDG NO.: EEA67

VOLATILE FRACTION

Samples EFJ12, EFJ13 and EFJ18 were run at medium level. Therefore, two sets of MS/MSD's were analysed.

SEMIVOLATILE FRACTION

No unusual problems were encountered during the analyses.

PESTICIDE FRACTION

No unusual problems were encountered during the analyses.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager, or his designee, as verified by the following signature.

K.M. Bagawandoss, Ph.D.
Assistant Program Manager

Date 11/21/89

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Level:(low/med) MED

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	EFJ12	109	98	81	0	0
02	EFJ13	110	99	88	0	0
03	EFJ18	108	94	83	0	0
04	EFJ18MS	111	96	89	0	0
05	EFJ18MSD	105	91	83	0	0
06	VBLK1	92	94	104	0	0

	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2B
SOIL VOLATILE SURROGATE RECOVERY

:b Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	EEA67	109	74	99	0	0
02	EFJ14	117	74	85	0	0
03	EFJ15	94	91	93	0	0
04	EFJ16	107	87	105	0	0
05	EFJ17	95	87	114	0	0
06	EFJ16MS	106	92	102	0	0
07	EFJ16MSD	112	91	101	0	0
08	VBLK2	97	97	100	0	0
09	VBLK3	95	94	91	0	0

		QC LIMITS
S1 (TOL)	= Toluene-d8	(81-117)
S2 (BFB)	= Bromofluorobenzene	(74-121)
S3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-01-7393

Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	OTHER	TOT OUT
01	EEA67	52	75	67	70	50	75	0	0
02	EFJ12	41	53	43	53	45	52	0	0
03	EFJ13	67	80	63	86	65	78	0	0
04	EFJ14	66	89	64	88	78	78	0	0
05	EFJ15	61	80	59	78	67	70	0	0
06	EFJ16	28	41	30	38	31	32	0	0
07	EFJ17	57	74	60	74	66	74	0	0
08	EFJ18	37	70	76	60	33	65	0	0
09	EFJ12MS	61	77	60	79	59	77	0	0
10	EFJ12MSD	62	70	62	78	61	74	0	0
11	SBLKB	62	67	72	76	61	68	0	0

		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl	(18-137)
S4 (PHL)	= Phenol-d5	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

2F

SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
01	PBLKSB	127	0
02	EEA67	130	0
03	EFJ12	84	0
04	EFJ12MS	131	0
05	EFJ12MSD	108	0
06	EFJ13	138	0
07	EFJ14	129	0
08	EFJ15	98	0
09	EFJ16	122	0
10	EFJ17	124	0
11	EFJ18	80	0

ADVISORY QC LIMITS

S1 (DBC) = Dibutlychlorendate (20-150)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix Spike - EPA Sample No.: EFJ16 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	82.0	0	59.5	73	59-172
Trichloroethene	82.0	7.77	65.9	71	62-137
Benzene	82.0	0	69.5	85	66-142
Toluene	82.0	9.13	74.1	79	59-139
Chlorobenzene	82.0	0	63.3	77	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	82.0	61.8	75	-3	22	59-172
Trichloroethene	82.0	66.2	71	0	24	62-137
Benzene	82.0	70.2	86	-1	21	66-142
Toluene	82.0	77.2	83	-5	21	59-139
Chlorobenzene	82.0	64.9	79	-3	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix Spike - EPA Sample No.: EFJ18 Level:(low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	7270	0	5130	71	59-172
Trichloroethene	7270	0	6990	96	62-137
Benzene	7270	0	6880	95	66-142
Toluene	7270	2110	9270	98	59-139
Chlorobenzene	7270	0	7530	104	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	7270	6790	93	-27 *	22	59-172
Trichloroethene	7270	7350	101	-5	24	62-137
Benzene	7270	7690	106	-11	21	66-142
Toluene	7270	9080	96	2	21	59-139
Chlorobenzene	7270	7270	100	4	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ14

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33334

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I1309

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 32 Date Analyzed: 11/04/89

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ15

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33335

Sample wt/vol: 1.0 (g/mL) G Lab File ID: I1304

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 20 Date Analyzed: 11/04/89

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	62	U
74-83-9	Bromomethane	62	U
75-01-4	Vinyl Chloride	62	U
75-00-3	Chloroethane	62	U
75-09-2	Methylene Chloride	31 ~~17~~	~~BJ~~ U
67-64-1	Acetone	280	
75-15-0	Carbon Disulfide	31	U
75-35-4	1,1-Dichloroethene	31	U
75-34-3	1,1-Dichloroethane	31	U
540-59-0	1,2-Dichloroethene (total)	31	U
67-66-3	Chloroform	31 ~~20~~	~~BJ~~ U
107-06-2	1,2-Dichloroethane	31	U
78-93-3	2-Butanone	62	U
71-55-6	1,1,1-Trichloroethane	31	U
56-23-5	Carbon Tetrachloride	31	U
108-05-4	Vinyl Acetate	62	U
75-27-4	Bromodichloromethane	31	U
78-87-5	1,2-Dichloropropane	31	U
10061-01-5	cis-1,3-Dichloropropene	31	U
79-01-6	Trichloroethene	31	U
124-48-1	Dibromochloromethane	31	U
79-00-5	1,1,2-Trichloroethane	31	U
71-43-2	Benzene	31	U
10061-02-6	Trans-1,3-Dichloropropene	31	U
75-25-2	Bromoform	31	U
108-10-1	4-Methyl-2-Pentanone	62	U
591-78-6	2-Hexanone	62	U
127-18-4	Tetrachloroethene	31	U
79-34-5	1,1,2,2-Tetrachloroethane	31	U
108-88-3	Toluene	10	J
108-90-7	Chlorobenzene	31	U
100-41-4	Ethylbenzene	31	U
100-42-5	Styrene	31	U
1330-20-7	Xylene (total)	31	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ15

b Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33335

Sample wt/vol: 1.0 (g/mL) G Lab File ID: I1304

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 20 Date Analyzed: 11/04/89

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ16

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33336

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I1292

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 39 Date Analyzed: 11/03/89

Column: (pack/cap) CAP Dilution Factor: 1.0

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene Chloride	34	~~B~~ U
67-64-1	Acetone	130	
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	5	J
67-66-3	Chloroform	~~6~~ 8	~~BJ~~ U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	J
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	9	
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ16

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33336

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I1292

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 39 Date Analyzed: 11/03/89

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ17

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33337

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I1295

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 53 Date Analyzed: 11/03/89

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	21	U
74-83-9	Bromomethane	21	U
75-01-4	Vinyl Chloride	21	U
75-00-3	Chloroethane	21	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	240	
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11 ~~8~~	~~BJ~~ U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	21	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
108-05-4	Vinyl Acetate	21	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	Trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	21	U
591-78-6	2-Hexanone	21	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ17

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33337

Sample wt/vol: 5.0 (g/mL) G Lab File ID: I1295

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 53 Date Analyzed: 11/03/89

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ18

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33338

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 15643

Level: (low/med) MED Date Received: 10/26/89

% Moisture: not dec. 14 Date Analyzed: 11/03/89

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	1500	U
74-83-9	Bromomethane	1500	U
75-01-4	Vinyl Chloride	1500	U
75-00-3	Chloroethane	1500	U
75-09-2	Methylene Chloride	370	J
67-64-1	Acetone	1500	U
75-15-0	Carbon Disulfide	730	U
75-35-4	1,1-Dichloroethene	730	U
75-34-3	1,1-Dichloroethane	730	U
540-59-0	1,2-Dichloroethene (total)	730	U
67-66-3	Chloroform	730 ~~570~~	~~BJ~~ U
107-06-2	1,2-Dichloroethane	730	U
78-93-3	2-Butanone	1500	U
71-55-6	1,1,1-Trichloroethane	730	U
56-23-5	Carbon Tetrachloride	730	U
108-05-4	Vinyl Acetate	1500	U
75-27-4	Bromodichloromethane	730	U
78-87-5	1,2-Dichloropropane	730	U
10061-01-5	cis-1,3-Dichloropropene	730	U
79-01-6	Trichloroethene	730	U
124-48-1	Dibromochloromethane	730	U
79-00-5	1,1,2-Trichloroethane	730	U
71-43-2	Benzene	730	U
10061-02-6	Trans-1,3-Dichloropropene	730	U
75-25-2	Bromoform	730	U
108-10-1	4-Methyl-2-Pentanone	1500	U
591-78-6	2-Hexanone	1500	U
127-18-4	Tetrachloroethene	730	U
79-34-5	1,1,2,2-Tetrachloroethane	730	U
108-88-3	Toluene	2100	
108-90-7	Chlorobenzene	730	U
100-41-4	Ethylbenzene	730	U
100-42-5	Styrene	730	U
1330-20-7	Xylene (total)	730	U

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ18

Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33338

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 15643

Level: (low/med) MED Date Received: 10/26/89

% Moisture: not dec. 14 Date Analyzed: 11/03/89

Column (pack/cap) CAP Dilution Factor: 1.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEA67

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33331

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33331

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 9 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	730	U
111-44-4	bis(2-Chloroethyl)Ether	730	U
95-57-8	2-Chlorophenol	730	U
541-73-1	1,3-Dichlorobenzene	730	U
106-46-7	1,4-Dichlorobenzene	730	U
100-51-6	Benzyl Alcohol	730	U
95-50-1	1,2-Dichlorobenzene	730	U
95-48-7	2-Methylphenol	730	U
108-60-1	bis(2-Chloroisopropyl)Ether	730	U
106-44-5	4-Methylphenol	730	U
621-64-7	N-Nitroso-Di-n-Propylamine	730	U
67-72-1	Hexachloroethane	730	U
98-95-3	Nitrobenzene	730	U
78-59-1	Isophorone	730	U
88-75-5	2-Nitrophenol	730	U
105-67-9	2,4-Dimethylphenol	730	U
65-85-0	Benzoic Acid	3500	U
111-91-1	bis(2-Chloroethoxy)Methane	730	U
120-83-2	2,4-Dichlorophenol	730	U
120-82-1	1,2,4-Trichlorobenzene	730	U
91-20-3	Naphthalene	730	U
106-47-8	4-Chloroaniline	730	U
87-68-3	Hexachlorobutadiene	730	U
59-50-7	4-Chloro-3-Methylphenol	730	U
91-57-6	2-Methylnaphthalene	730	U
77-47-4	Hexachlorocyclopentadiene	730	U
88-06-2	2,4,6-Trichlorophenol	730	U
95-95-4	2,4,5-Trichlorophenol	3500	U
91-58-7	2-Chloronaphthalene	730	U
88-74-4	2-Nitroaniline	3500	U
131-11-3	Dimethyl Phthalate	730	U
208-96-8	Acenaphthylene	730	U
606-20-2	2,6-Dinitrotoluene	730	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEA67

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33331

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33331

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 9 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3500	U
83-32-9	Acenaphthene	730	U
51-28-5	2,4-Dinitrophenol	3500	U
100-02-7	4-Nitrophenol	3500	U
132-64-9	Dibenzofuran	730	U
121-14-2	2,4-Dinitrotoluene	730	U
84-66-2	Diethylphthalate	730	U
7005-72-3	4-Chlorophenyl-phenylether	730	U
86-73-7	Fluorene	730	U
100-01-6	4-Nitroaniline	3500	U
534-52-1	4,6-Dinitro-2-Methylphenol	3500	U
86-30-6	N-Nitrosodiphenylamine (1)	730	U
101-55-3	4-Bromophenyl-phenylether	730	U
118-74-1	Hexachlorobenzene	730	U
87-86-5	Pentachlorophenol	3500	U
85-01-8	Phenanthrene	730	U
120-12-7	Anthracene	730	U
84-74-2	Di-n-Butylphthalate	730	U
206-44-0	Fluoranthene	730	U
129-00-0	Pyrene	730	U
85-68-7	Butylbenzylphthalate	730	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	730	U
218-01-9	Chrysene	730	U
117-81-7	bis(2-Ethylhexyl)Phthalate	730	U
117-84-0	Di-n-Octyl Phthalate	730	U
205-99-2	Benzo(b)Fluoranthene	730	U
207-08-9	Benzo(k)Fluoranthene	730	U
50-32-8	Benzo(a)Pyrene	730	U
193-39-5	Indeno(1,2,3-cd)Pyrene	730	U
53-70-3	Dibenz(a,h)Anthracene	730	U
191-24-2	Benzo(g,h,i)Perylene	730	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EEA67

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33331

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33331

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 9 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	25.94	290	J
2.	UNKNOWN HYDROCARBON	27.62	1300	J
3.	UNKNOWN HYDROCARBON	30.09	670	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ12

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33332

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33332

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 12 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	750	U
111-44-4	bis(2-Chloroethyl)Ether	750	U
95-57-8	2-Chlorophenol	750	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
100-51-6	Benzyl Alcohol	750	U
95-50-1	1,2-Dichlorobenzene	750	U
95-48-7	2-Methylphenol	750	U
108-60-1	bis(2-Chloroisopropyl)Ether	750	U
106-44-5	4-Methylphenol	750	U
621-64-7	N-Nitroso-Di-n-Propylamine	750	U
67-72-1	Hexachloroethane	750	U
98-95-3	Nitrobenzene	750	U
78-59-1	Isophorone	750	U
88-75-5	2-Nitrophenol	750	U
105-67-9	2,4-Dimethylphenol	750	U
65-85-0	Benzoic Acid	3600	U
111-91-1	bis(2-Chloroethoxy)Methane	750	U
120-83-2	2,4-Dichlorophenol	750	U
120-82-1	1,2,4-Trichlorobenzene	750	U
91-20-3	Naphthalene	750	U
106-47-8	4-Chloroaniline	750	U
87-68-3	Hexachlorobutadiene	750	U
59-50-7	4-Chloro-3-Methylphenol	750	U
91-57-6	2-Methylnaphthalene	250	J
77-47-4	Hexachlorocyclopentadiene	750	U
88-06-2	2,4,6-Trichlorophenol	750	U
95-95-4	2,4,5-Trichlorophenol	3600	U
91-58-7	2-Chloronaphthalene	750	U
88-74-4	2-Nitroaniline	3600	U
131-11-3	Dimethyl Phthalate	750	U
208-96-8	Acenaphthylene	750	U
606-20-2	2,6-Dinitrotoluene	750	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ12

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33332

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33332

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 12 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3600	U
83-32-9	Acenaphthene	750	U
51-28-5	2,4-Dinitrophenol	3600	U
100-02-7	4-Nitrophenol	3600	U
132-64-9	Dibenzofuran	750	U
121-14-2	2,4-Dinitrotoluene	750	U
84-66-2	Diethylphthalate	750	U
7005-72-3	4-Chlorophenyl-phenylether	750	U
86-73-7	Fluorene	750	U
100-01-6	4-Nitroaniline	3600	U
534-52-1	4,6-Dinitro-2-Methylphenol	3600	U
86-30-6	N-Nitrosodiphenylamine (1)	750	U
101-55-3	4-Bromophenyl-phenylether	750	U
118-74-1	Hexachlorobenzene	750	U
87-86-5	Pentachlorophenol	3600	U
85-01-8	Phenanthrene	900	
120-12-7	Anthracene	750	U
84-74-2	Di-n-Butylphthalate	750	U
206-44-0	Fluoranthene	540	J
129-00-0	Pyrene	450	J
85-68-7	Butylbenzylphthalate	750	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	350	J
218-01-9	Chrysene	510	J
117-81-7	bis(2-Ethylhexyl)Phthalate	750	U
117-84-0	Di-n-Octyl Phthalate	750	U
205-99-2	Benzo(b)Fluoranthene	610	J
207-08-9	Benzo(k)Fluoranthene	750	U
50-32-8	Benzo(a)Pyrene	310	J
193-39-5	Indeno(1,2,3-cd)Pyrene	330	J
53-70-3	Dibenz(a,h)Anthracene	750	U
191-24-2	Benzo(g,h,i)Perylene	310	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ12

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33332

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33332

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 12 dec. Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.9 Dilution Factor: 1.0

Number TICs found: 17

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	DIMETHYL NAPHTHALENE	14.57	620	J
2.	DIMETHYL NAPHTHALENE	14.82	360	J
3.	UNKNOWN HYDROCARBON	14.95	350	J
4.	TRIMETHYL NAPHTHALENE	16.09	460	J
5.	UNKNOWN HYDROCARBON	16.52	510	J
6.	UNKNOWN HYDROCARBON	17.64	1200	J
7.	UNKNOWN COMPOUND	18.12	390	J
8.	UNKNOWN COMPOUND	19.17	310	J
9.	UNKNOWN HYDROCARBON	19.54	330	J
10.	UNKNOWN PNA	19.80	410	J
11.	UNKNOWN PNA	19.99	420	J
12.	UNKNOWN HYDROCARBON	20.44	490	J
13.	UNKNOWN PNA	21.04	340	J
14.	UNKNOWN PNA	23.75	420	J
15.	UNKNOWN HYDROCARBON	25.96	490	J
16.	UNKNOWN PNA	27.67	680	J
17.	UNKNOWN COMPOUND	31.36	290	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ13

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33333

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33333

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 13 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	760	U
111-44-4	bis(2-Chloroethyl)Ether	760	U
95-57-8	2-Chlorophenol	760	U
541-73-1	1,3-Dichlorobenzene	760	U
106-46-7	1,4-Dichlorobenzene	760	U
100-51-6	Benzyl Alcohol	760	U
95-50-1	1,2-Dichlorobenzene	760	U
95-48-7	2-Methylphenol	760	U
108-60-1	bis(2-Chloroisopropyl)Ether	760	U
106-44-5	4-Methylphenol	760	U
621-64-7	N-Nitroso-Di-n-Propylamine	760	U
67-72-1	Hexachloroethane	760	U
98-95-3	Nitrobenzene	760	U
78-59-1	Isophorone	760	U
88-75-5	2-Nitrophenol	760	U
105-67-9	2,4-Dimethylphenol	760	U
65-85-0	Benzoic Acid	3700	U
111-91-1	bis(2-Chloroethoxy)Methane	760	U
120-83-2	2,4-Dichlorophenol	760	U
120-82-1	1,2,4-Trichlorobenzene	760	U
91-20-3	Naphthalene	1300	
106-47-8	4-Chloroaniline	760	U
87-68-3	Hexachlorobutadiene	760	U
59-50-7	4-Chloro-3-Methylphenol	760	U
91-57-6	2-Methylnaphthalene	2800	
77-47-4	Hexachlorocyclopentadiene	760	U
88-06-2	2,4,6-Trichlorophenol	760	U
95-95-4	2,4,5-Trichlorophenol	3700	U
91-58-7	2-Chloronaphthalene	760	U
88-74-4	2-Nitroaniline	3700	U
131-11-3	Dimethyl Phthalate	760	U
208-96-8	Acenaphthylene	940	
606-20-2	2,6-Dinitrotoluene	760	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ13

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33333

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33333

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 13 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3700	U
83-32-9	Acenaphthene	760	U
51-28-5	2,4-Dinitrophenol	3700	U
100-02-7	4-Nitrophenol	3700	U
132-64-9	Dibenzofuran	1000	
121-14-2	2,4-Dinitrotoluene	760	U
84-66-2	Diethylphthalate	760	U
7005-72-3	4-Chlorophenyl-phenylether	760	U
86-73-7	Fluorene	890	
100-01-6	4-Nitroaniline	3700	U
534-52-1	4,6-Dinitro-2-Methylphenol	3700	U
86-30-6	N-Nitrosodiphenylamine (1)	760	U
101-55-3	4-Bromophenyl-phenylether	760	U
118-74-1	Hexachlorobenzene	760	U
87-86-5	Pentachlorophenol	3700	U
85-01-8	Phenanthrene	6200	
120-12-7	Anthracene	1200	
84-74-2	Di-n-Butylphthalate	760	U
206-44-0	Fluoranthene	5900	
129-00-0	Pyrene	5600	
85-68-7	Butylbenzylphthalate	760	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	4300	
218-01-9	Chrysene	5200	
117-81-7	bis(2-Ethylhexyl)Phthalate	760	U
117-84-0	Di-n-Octyl Phthalate	760	U
205-99-2	Benzo(b)Fluoranthene	7700	
207-08-9	Benzo(k)Fluoranthene	760	U
50-32-8	Benzo(a)Pyrene	4500	
193-39-5	Indeno(1,2,3-cd)Pyrene	2800	
53-70-3	Dibenz(a,h)Anthracene	760	U
191-24-2	Benzo(g,h,i)Perylene	2800	

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ13

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33333

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33333

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 13 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	14.22	4400	J
2.	DIMETHYL NAPHTHALENE	14.59	4500	J
3.	UNKNOWN HYDROCARBON	15.40	5600	J
4.	TRIMETHYL NAPHTHALENE	15.90	4400	J
5.	TRIMETHYL NAPHTHALENE	16.12	5400	J
6.	UNKNOWN HYDROCARBON	17.59	1300	J
7.	UNKNOWN HYDROCARBON	17.65	1300	J
8.	UNKNOWN COMPOUND	19.05	770	J
9.	UNKNOWN HYDROCARBON	19.55	1600	J
10.	UNKNOWN PNA	19.84	950	J
11.	UNKNOWN HYDROCARBON	20.47	1600	J
12.	UNKNOWN PNA	21.14	710	J
13.	UNKNOWN HYDROCARBON	22.19	1900	J
14.	UNKNOWN PNA	22.87	1100	J
15.	UNKNOWN PNA	23.09	1400	J
16.	UNKNOWN COMPOUND	23.79	1400	J
17.	UNKNOWN PNA	24.05	1000	J
18.	UNKNOWN PNA	24.25	1100	J
19.	UNKNOWN HYDROCARBON	25.99	1100	J
20.	UNKNOWN PNA	27.77	990	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ14

Lab Name: SWL-TULSA Contract: 68-01-7393

Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33334

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33334

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 32 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	970	U
111-44-4	bis(2-Chloroethyl)Ether	970	U
95-57-8	2-Chlorophenol	970	U
541-73-1	1,3-Dichlorobenzene	970	U
106-46-7	1,4-Dichlorobenzene	970	U
100-51-6	Benzyl Alcohol	970	U
95-50-1	1,2-Dichlorobenzene	970	U
95-48-7	2-Methylphenol	970	U
108-60-1	bis(2-Chloroisopropyl)Ether	970	U
106-44-5	4-Methylphenol	970	U
621-64-7	N-Nitroso-Di-n-Propylamine	970	U
67-72-1	Hexachloroethane	970	U
98-95-3	Nitrobenzene	970	U
78-59-1	Isophorone	970	U
88-75-5	2-Nitrophenol	970	U
105-67-9	2,4-Dimethylphenol	970	U
65-85-0	Benzoic Acid	4700	U
111-91-1	bis(2-Chloroethoxy)Methane	970	U
120-83-2	2,4-Dichlorophenol	970	U
120-82-1	1,2,4-Trichlorobenzene	970	U
91-20-3	Naphthalene	970	U
106-47-8	4-Chloroaniline	950	J
87-68-3	Hexachlorobutadiene	970	U
59-50-7	4-Chloro-3-Methylphenol	970	U
91-57-6	2-Methylnaphthalene	970	U
77-47-4	Hexachlorocyclopentadiene	970	U
88-06-2	2,4,6-Trichlorophenol	970	U
95-95-4	2,4,5-Trichlorophenol	4700	U
91-58-7	2-Chloronaphthalene	970	U
88-74-4	2-Nitroaniline	4700	U
131-11-3	Dimethyl Phthalate	970	U
208-96-8	Acenaphthylene	970	U
606-20-2	2,6-Dinitrotoluene	970	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ14

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33334

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33334

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 32 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4700	U
83-32-9	Acenaphthene	970	U
51-28-5	2,4-Dinitrophenol	4700	U
100-02-7	4-Nitrophenol	4700	U
132-64-9	Dibenzofuran	970	U
121-14-2	2,4-Dinitrotoluene	970	U
84-66-2	Diethylphthalate	970	U
7005-72-3	4-Chlorophenyl-phenylether	970	U
86-73-7	Fluorene	970	U
100-01-6	4-Nitroaniline	4700	U
534-52-1	4,6-Dinitro-2-Methylphenol	4700	U
86-30-6	N-Nitrosodiphenylamine (1)	970	U
101-55-3	4-Bromophenyl-phenylether	970	U
118-74-1	Hexachlorobenzene	970	U
87-86-5	Pentachlorophenol	4700	U
85-01-8	Phenanthrene	720	J
120-12-7	Anthracene	190	J
84-74-2	Di-n-Butylphthalate	970	U
206-44-0	Fluoranthene	1400	
129-00-0	Pyrene	1100	
85-68-7	Butylbenzylphthalate	970	U
91-94-1	3,3'-Dichlorobenzidine	1900	U
56-55-3	Benzo(a)Anthracene	850	J
218-01-9	Chrysene	870	J
117-81-7	bis(2-Ethylhexyl)Phthalate	1100	
117-84-0	Di-n-Octyl Phthalate	970	U
205-99-2	Benzo(b)Fluoranthene	970	U
207-08-9	Benzo(k)Fluoranthene	970	U
50-32-8	Benzo(a)Pyrene	890	J
193-39-5	Indeno(1,2,3-cd)Pyrene	660	J
53-70-3	Dibenz(a,h)Anthracene	970	U
191-24-2	Benzo(g,h,i)Perylene	850	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ14

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33334

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33334

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 32 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN COMPOUND	14.05	880	J
2.	DICHLORO BENZENAMINE	14.62	370	J
3.	UNKNOWN COMPOUND	15.65	440	J
4.	UNKNOWN HYDROCARBON	17.65	450	J
5.	UNKNOWN COMPOUND	19.27	530	J
6.	UNKNOWN COMPOUND	20.45	620	J
7.	UNKNOWN COMPOUND	26.01	1300	J
8.	UNKNOWN COMPOUND	26.17	1800	J
9.	UNKNOWN COMPOUND	26.37	700	J
10.	UNKNOWN COMPOUND	26.66	550	J
11.	UNKNOWN PNA	27.02	2900	J
12.	UNKNOWN COMPOUND	27.17	530	J
13.	UNKNOWN COMPOUND	27.31	680	J
14.	UNKNOWN PNA	27.76	2100	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ15

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33335

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33335

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 20 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	820	U
111-44-4	bis(2-Chloroethyl)Ether	820	U
95-57-8	2-Chlorophenol	820	U
541-73-1	1,3-Dichlorobenzene	820	U
106-46-7	1,4-Dichlorobenzene	820	U
100-51-6	Benzyl Alcohol	820	U
95-50-1	1,2-Dichlorobenzene	820	U
95-48-7	2-Methylphenol	820	U
108-60-1	bis(2-Chloroisopropyl)Ether	820	U
106-44-5	4-Methylphenol	820	U
621-64-7	N-Nitroso-Di-n-Propylamine	820	U
67-72-1	Hexachloroethane	820	U
98-95-3	Nitrobenzene	820	U
78-59-1	Isophorone	820	U
88-75-5	2-Nitrophenol	820	U
105-67-9	2,4-Dimethylphenol	820	U
65-85-0	Benzoic Acid	4000	U
111-91-1	bis(2-Chloroethoxy)Methane	820	U
120-83-2	2,4-Dichlorophenol	820	U
120-82-1	1,2,4-Trichlorobenzene	820	U
91-20-3	Naphthalene	820	U
106-47-8	4-Chloroaniline	820	U
87-68-3	Hexachlorobutadiene	820	U
59-50-7	4-Chloro-3-Methylphenol	820	U
91-57-6	2-Methylnaphthalene	820	U
77-47-4	Hexachlorocyclopentadiene	820	U
88-06-2	2,4,6-Trichlorophenol	820	U
95-95-4	2,4,5-Trichlorophenol	4000	U
91-58-7	2-Chloronaphthalene	820	U
88-74-4	2-Nitroaniline	4000	U
131-11-3	Dimethyl Phthalate	820	U
208-96-8	Acenaphthylene	820	U
606-20-2	2,6-Dinitrotoluene	820	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ15

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33335

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33335

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 20 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4000	U
83-32-9	Acenaphthene	820	U
51-28-5	2,4-Dinitrophenol	4000	U
100-02-7	4-Nitrophenol	4000	U
132-64-9	Dibenzofuran	820	U
121-14-2	2,4-Dinitrotoluene	820	U
84-66-2	Diethylphthalate	820	U
7005-72-3	4-Chlorophenyl-phenylether	820	U
86-73-7	Fluorene	820	U
100-01-6	4-Nitroaniline	4000	U
534-52-1	4,6-Dinitro-2-Methylphenol	4000	U
86-30-6	N-Nitrosodiphenylamine (1)	820	U
101-55-3	4-Bromophenyl-phenylether	820	U
118-74-1	Hexachlorobenzene	820	U
87-86-5	Pentachlorophenol	4000	U
85-01-8	Phenanthrene	770	J
120-12-7	Anthracene	140	J
84-74-2	Di-n-Butylphthalate	820	U
206-44-0	Fluoranthene	1100	
129-00-0	Pyrene	790	J
85-68-7	Butylbenzylphthalate	820	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	450	J
218-01-9	Chrysene	530	J
117-81-7	bis(2-Ethylhexyl)Phthalate	820	U
117-84-0	Di-n-Octyl Phthalate	820	U
205-99-2	Benzo(b)Fluoranthene	820	J
207-08-9	Benzo(k)Fluoranthene	820	U
50-32-8	Benzo(a)Pyrene	520	J
193-39-5	Indeno(1,2,3-cd)Pyrene	410	J
53-70-3	Dibenz(a,h)Anthracene	820	U
191-24-2	Benzo(g,h,i)Perylene	400	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ15

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33335

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33335

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 20 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.0

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	21.17	340	J
2.	UNKNOWN COMPOUND	21.49	530	J
3.	UNKNOWN HYDROCARBON	24.95	430	J
4.	UNKNOWN COMPOUND	25.26	370	J
5.	UNKNOWN HYDROCARBON	25.71	540	J
6.	UNKNOWN COMPOUND	25.99	1100	J
7.	UNKNOWN COMPOUND	26.17	390	J
8.	UNKNOWN PNA	27.06	1700	J
9.	UNKNOWN COMPOUND	27.16	440	J
10.	UNKNOWN COMPOUND	27.27	2200	J
11.	UNKNOWN COMPOUND	27.71	1800	J
12.	UNKNOWN COMPOUND	28.52	520	J
13.	UNKNOWN COMPOUND	29.34	390	J
14.	UNKNOWN COMPOUND	30.14	570	J
15.	UNKNOWN COMPOUND	31.42	390	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ16

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33336

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33336R

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 39 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/07/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2200	U
111-44-4	bis(2-Chloroethyl)Ether	2200	U
95-57-8	2-Chlorophenol	2200	U
541-73-1	1,3-Dichlorobenzene	2200	U
106-46-7	1,4-Dichlorobenzene	2200	U
100-51-6	Benzyl Alcohol	2200	U
95-50-1	1,2-Dichlorobenzene	2200	U
95-48-7	2-Methylphenol	2200	U
108-60-1	bis(2-Chloroisopropyl)Ether	2200	U
106-44-5	4-Methylphenol	2200	U
621-64-7	N-Nitroso-Di-n-Propylamine	2200	U
67-72-1	Hexachloroethane	2200	U
98-95-3	Nitrobenzene	2200	U
78-59-1	Isophorone	2200	U
88-75-5	2-Nitrophenol	2200	U
105-67-9	2,4-Dimethylphenol	2200	U
65-85-0	Benzoic Acid	10000	U
111-91-1	bis(2-Chloroethoxy)Methane	2200	U
120-83-2	2,4-Dichlorophenol	2200	U
120-82-1	1,2,4-Trichlorobenzene	2200	U
91-20-3	Naphthalene	750	J
106-47-8	4-Chloroaniline	2200	U
87-68-3	Hexachlorobutadiene	2200	U
59-50-7	4-Chloro-3-Methylphenol	2200	U
91-57-6	2-Methylnaphthalene	2200	U
77-47-4	Hexachlorocyclopentadiene	2200	U
88-06-2	2,4,6-Trichlorophenol	2200	U
95-95-4	2,4,5-Trichlorophenol	10000	U
91-58-7	2-Chloronaphthalene	2200	U
88-74-4	2-Nitroaniline	10000	U
131-11-3	Dimethyl Phthalate	2200	U
208-96-8	Acenaphthylene	2200	U
606-20-2	2,6-Dinitrotoluene	2200	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ16

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33336

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33336R

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 39 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/07/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 2.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	10000	U
83-32-9	Acenaphthene	3800	
51-28-5	2,4-Dinitrophenol	10000	U
100-02-7	4-Nitrophenol	10000	U
132-64-9	Dibenzofuran	1800	J
121-14-2	2,4-Dinitrotoluene	2200	U
84-66-2	Diethylphthalate	2200	U
7005-72-3	4-Chlorophenyl-phenylether	2200	U
86-73-7	Fluorene	3300	
100-01-6	4-Nitroaniline	10000	U
534-52-1	4,6-Dinitro-2-Methylphenol	10000	U
86-30-6	N-Nitrosodiphenylamine (1)	2200	U
101-55-3	4-Bromophenyl-phenylether	2200	U
118-74-1	Hexachlorobenzene	2200	U
87-86-5	Pentachlorophenol	10000	U
85-01-8	Phenanthrene	27000	
120-12-7	Anthracene	6000	
84-74-2	Di-n-Butylphthalate	2200	U
206-44-0	Fluoranthene	33000	
129-00-0	Pyrene	27000	
85-68-7	Butylbenzylphthalate	2200	U
91-94-1	3,3'-Dichlorobenzidine	4300	U
56-55-3	Benzo(a)Anthracene	22000	
218-01-9	Chrysene	25000	
117-81-7	bis(2-Ethylhexyl)Phthalate	2200	U
117-84-0	Di-n-Octyl Phthalate	2200	U
205-99-2	Benzo(b)Fluoranthene	26000	
207-08-9	Benzo(k)Fluoranthene	19000	
50-32-8	Benzo(a)Pyrene	25000	
193-39-5	Indeno(1,2,3-cd)Pyrene	17000	
53-70-3	Dibenz(a,h)Anthracene	7600	
191-24-2	Benzo(g,h,i)Perylene	15000	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ16

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33336

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33336R

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 39 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/07/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 2.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN COMPOUND	17.89	3700	J
2.		UNKNOWN COMPOUND	18.20	5700	J
3.	2788-23-0	9H-CARBAZOLE, 9-NITROSO	19.15	3600	J
4.		UNKNOWN PNA	19.85	4500	J
5.		UNKNOWN PNA	20.04	5500	J
6.		UNKNOWN PNA	20.49	4800	J
7.		UNKNOWN PNA	22.20	5100	J
8.		UNKNOWN PNA	22.65	6500	J
9.		UNKNOWN PNA	22.79	3700	J
10.		UNKNOWN PNA	23.80	3100	J
11.		UNKNOWN PNA	24.04	4300	J
12.		UNKNOWN PNA	24.14	8800	J
13.		UNKNOWN PNA	24.85	7800	J
14.		UNKNOWN PNA	25.84	5000	J
15.		UNKNOWN PNA	27.31	4800	J
16.		UNKNOWN PNA	27.77	21000	J
17.		UNKNOWN PNA	28.14	6200	J
18.		UNKNOWN COMPOUND	31.14	16000	J
19.		UNKNOWN COMPOUND	31.39	4500	J
20.		UNKNOWN PNA	31.56	3500	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ17

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33337

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33337

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 53 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1400	U
111-44-4	bis(2-Chloroethyl)Ether	1400	U
95-57-8	2-Chlorophenol	1400	U
541-73-1	1,3-Dichlorobenzene	1400	U
106-46-7	1,4-Dichlorobenzene	1400	U
100-51-6	Benzyl Alcohol	1400	U
95-50-1	1,2-Dichlorobenzene	1400	U
95-48-7	2-Methylphenol	1400	U
108-60-1	bis(2-Chloroisopropyl)Ether	1400	U
106-44-5	4-Methylphenol	1400	U
621-64-7	N-Nitroso-Di-n-Propylamine	1400	U
67-72-1	Hexachloroethane	1400	U
98-95-3	Nitrobenzene	1400	U
78-59-1	Isophorone	1400	U
88-75-5	2-Nitrophenol	1400	U
105-67-9	2,4-Dimethylphenol	1400	U
65-85-0	Benzoic Acid	6800	U
111-91-1	bis(2-Chloroethoxy)Methane	1400	U
120-83-2	2,4-Dichlorophenol	1400	U
120-82-1	1,2,4-Trichlorobenzene	1400	U
91-20-3	Naphthalene	720	J
106-47-8	4-Chloroaniline	1400	U
87-68-3	Hexachlorobutadiene	1400	U
59-50-7	4-Chloro-3-Methylphenol	1400	U
91-57-6	2-Methylnaphthalene	490	J
77-47-4	Hexachlorocyclopentadiene	1400	U
88-06-2	2,4,6-Trichlorophenol	1400	U
95-95-4	2,4,5-Trichlorophenol	6800	U
91-58-7	2-Chloronaphthalene	1400	U
88-74-4	2-Nitroaniline	6800	U
131-11-3	Dimethyl Phthalate	1400	U
208-96-8	Acenaphthylene	530	J
606-20-2	2,6-Dinitrotoluene	1400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ17

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33337

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33337

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 53 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	6800	U
83-32-9	Acenaphthene	1400	U
51-28-5	2,4-Dinitrophenol	6800	U
100-02-7	4-Nitrophenol	6800	U
132-64-9	Dibenzofuran	1400	U
121-14-2	2,4-Dinitrotoluene	1400	U
84-66-2	Diethylphthalate	1400	U
7005-72-3	4-Chlorophenyl-phenylether	1400	U
86-73-7	Fluorene	560	J
100-01-6	4-Nitroaniline	6800	U
534-52-1	4,6-Dinitro-2-Methylphenol	6800	U
86-30-6	N-Nitrosodiphenylamine (1)	1400	U
101-55-3	4-Bromophenyl-phenylether	1400	U
118-74-1	Hexachlorobenzene	1400	U
87-86-5	Pentachlorophenol	6800	U
85-01-8	Phenanthrene	2800	
120-12-7	Anthracene	1300	J
84-74-2	Di-n-Butylphthalate	1400	U
206-44-0	Fluoranthene	5000	
129-00-0	Pyrene	4600	
85-68-7	Butylbenzylphthalate	1400	U
91-94-1	3,3'-Dichlorobenzidine	2800	U
56-55-3	Benzo(a)Anthracene	3700	
218-01-9	Chrysene	4400	
117-81-7	bis(2-Ethylhexyl)Phthalate	3000	
117-84-0	Di-n-Octyl Phthalate	1400	U
205-99-2	Benzo(b)Fluoranthene	6300	
207-08-9	Benzo(k)Fluoranthene	1400	U
50-32-8	Benzo(a)Pyrene	4600	
193-39-5	Indeno(1,2,3-cd)Pyrene	2600	
53-70-3	Dibenz(a,h)Anthracene	1400	U
191-24-2	Benzo(g,h,i)Perylene	2400	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ17

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33337

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33337

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 53 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	17.67	670	J
2.	UNKNOWN PNA	20.02	1200	J
3.	UNKNOWN COMPOUND	20.55	560	J
4.	UNKNOWN COMPOUND	20.64	980	J
5.	UNKNOWN COMPOUND	20.90	910	J
6.	UNKNOWN PNA	21.07	890	J
7.	UNKNOWN COMPOUND	21.60	780	J
8.	UNKNOWN PNA	22.64	610	J
9.	UNKNOWN COMPOUND	23.40	560	J
10.	UNKNOWN COMPOUND	24.20	590	J
11.	UNKNOWN COMPOUND	25.86	700	J
12.	UNKNOWN COMPOUND	25.99	2200	J
13.	UNKNOWN COMPOUND	26.17	1800	J
14.	UNKNOWN COMPOUND	26.77	780	J
15.	UNKNOWN PNA	27.31	2400	J
16.	UNKNOWN PNA	27.76	5700	J
17.	UNKNOWN COMPOUND	30.17	1500	J
18.	UNKNOWN COMPOUND	30.31	1900	J
19.	UNKNOWN COMPOUND	30.94	1100	J
20.	UNKNOWN COMPOUND	31.46	1100	J

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ18

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33338

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33338

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 14 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.2 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1400	
111-44-4	bis(2-Chloroethyl)Ether	770	U
95-57-8	2-Chlorophenol	770	U
541-73-1	1,3-Dichlorobenzene	770	U
106-46-7	1,4-Dichlorobenzene	770	U
100-51-6	Benzyl Alcohol	770	U
95-50-1	1,2-Dichlorobenzene	770	U
95-48-7	2-Methylphenol	770	U
108-60-1	bis(2-Chloroisopropyl)Ether	770	U
106-44-5	4-Methylphenol	770	U
621-64-7	N-Nitroso-Di-n-Propylamine	770	U
67-72-1	Hexachloroethane	770	U
98-95-3	Nitrobenzene	770	U
78-59-1	Isophorone	770	U
88-75-5	2-Nitrophenol	770	U
105-67-9	2,4-Dimethylphenol	770	U
65-85-0	Benzoic Acid	3700	U
111-91-1	bis(2-Chloroethoxy)Methane	770	U
120-83-2	2,4-Dichlorophenol	770	U
120-82-1	1,2,4-Trichlorobenzene	770	U
91-20-3	Naphthalene	770	U
106-47-8	4-Chloroaniline	770	U
87-68-3	Hexachlorobutadiene	770	U
59-50-7	4-Chloro-3-Methylphenol	770	U
91-57-6	2-Methylnaphthalene	270	J
77-47-4	Hexachlorocyclopentadiene	770	U
88-06-2	2,4,6-Trichlorophenol	770	U
95-95-4	2,4,5-Trichlorophenol	3700	U
91-58-7	2-Chloronaphthalene	770	U
88-74-4	2-Nitroaniline	3700	U
131-11-3	Dimethyl Phthalate	770	U
208-96-8	Acenaphthylene	770	U
606-20-2	2,6-Dinitrotoluene	770	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ18

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33338

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33338

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 14 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.2 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	3700	U
83-32-9	Acenaphthene	770	U
51-28-5	2,4-Dinitrophenol	3700	U
100-02-7	4-Nitrophenol	3700	U
132-64-9	Dibenzofuran	770	U
121-14-2	2,4-Dinitrotoluene	770	U
84-66-2	Diethylphthalate	770	U
7005-72-3	4-Chlorophenyl-phenylether	770	U
86-73-7	Fluorene	770	U
100-01-6	4-Nitroaniline	3700	U
534-52-1	4,6-Dinitro-2-Methylphenol	3700	U
86-30-6	N-Nitrosodiphenylamine (1)	480	J
101-55-3	4-Bromophenyl-phenylether	770	U
118-74-1	Hexachlorobenzene	770	U
87-86-5	Pentachlorophenol	3700	U
85-01-8	Phenanthrene	960	
120-12-7	Anthracene	770	U
84-74-2	Di-n-Butylphthalate	770	U
206-44-0	Fluoranthene	350	J
129-00-0	Pyrene	550	J
85-68-7	Butylbenzylphthalate	770	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)Anthracene	770	U
218-01-9	Chrysene	770	U
117-81-7	bis(2-Ethylhexyl)Phthalate	3100	
117-84-0	Di-n-Octyl Phthalate	770	U
205-99-2	Benzo(b)Fluoranthene	770	U
207-08-9	Benzo(k)Fluoranthene	770	U
50-32-8	Benzo(a)Pyrene	770	U
193-39-5	Indeno(1,2,3-cd)Pyrene	770	U
53-70-3	Dibenz(a,h)Anthracene	770	U
191-24-2	Benzo(g,h,i)Perylene	770	U

(1) - Cannot be separated from Diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFJ18

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33338

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 33338

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 14 dec. ____ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/06/89

GPC Cleanup: (Y/N) Y pH: 7.2 Dilution Factor: 1.0

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	DIMETHYL ETHYL PHENOL	12.54	3400	J
2.	UNKNOWN PHENOL	14.79	5400	J
3.	UNKNOWN COMPOUND	14.94	3800	J
4.	UNKNOWN COMPOUND	15.14	10000	J
5.	UNKNOWN COMPOUND	15.79	4200	J
6.	UNKNOWN HYDROCARBON	19.39	2600	J
7.	UNKNOWN HYDROCARBON	19.69	4100	J
8.	UNKNOWN COMPOUND	24.02	13000	J
9.	UNKNOWN COMPOUND	25.09	3200	J
10.	UNKNOWN COMPOUND	25.26	6500	J
11.	UNKNOWN COMPOUND	25.37	5100	J
12.	UNKNOWN COMPOUND	25.47	7200	J
13.	UNKNOWN COMPOUND	26.14	3200	J
14.	UNKNOWN COMPOUND	26.49	7600	J
15.	UNKNOWN COMPOUND	26.79	7900	J
16.	UNKNOWN COMPOUND	26.92	8000	J
17.	UNKNOWN COMPOUND	28.86	5600	J
18.	UNKNOWN COMPOUND	30.32	3700	J
19.	UNKNOWN COMPOUND	30.49	9100	J
20.	UNKNOWN COMPOUND	31.87	4300	J

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EEA67

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33331

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 9 dec. __ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	18	U
1024-57-3	Heptachlor epoxide	18	U
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	35	U
72-55-9	4,4'-DDE	35	U
72-20-8	Endrin	35	U
33213-65-9	Endosulfan II	35	U
72-54-8	4,4'-DDD	35	U
1031-07-8	Endosulfan sulfate	35	U
50-29-3	4,4'-DDT	35	U
72-43-5	Methoxychlor	180	U
53494-70-5	Endrin ketone	35	U
5103-71-9	alpha-Chlordane	180	U
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	350	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	180	U
11141-16-5	Aroclor-1232	180	U
53469-21-9	Aroclor-1242	180	U
12672-29-6	Aroclor-1248	180	U
11097-69-1	Aroclor-1254	350	U
11096-82-5	Aroclor-1260	350	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ12

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33332

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 13 dec. __ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18	U
319-85-7	beta-BHC	18	U
319-86-8	delta-BHC	18	U
58-89-9	gamma-BHC (Lindane)	18	U
76-44-8	Heptachlor	18	U
309-00-2	Aldrin	26	
1024-57-3	Heptachlor epoxide	19	
959-98-8	Endosulfan I	18	U
60-57-1	Dieldrin	37	U
72-55-9	4,4'-DDE	37	U
72-20-8	Endrin	37	U
33213-65-9	Endosulfan II	37	U
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	37	U
72-43-5	Methoxychlor	180	U
53494-70-5	Endrin ketone	37	U
5103-71-9	alpha-Chlordane	180	U
5103-74-2	gamma-Chlordane	180	U
8001-35-2	Toxaphene	370	U
12674-11-2	Aroclor-1016	180	U
11104-28-2	Aroclor-1221	180	U
11141-16-5	Aroclor-1232	180	U
53469-21-9	Aroclor-1242	180	U
12672-29-6	Aroclor-1248	180	U
11097-69-1	Aroclor-1254	370	U
11096-82-5	Aroclor-1260	370	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ13

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33333

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 14 dec. __ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	250	
1024-57-3	Heptachlor epoxide	240	
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	37	U
72-55-9	4,4'-DDE	37	U
72-20-8	Endrin	37	U
33213-65-9	Endosulfan II	37	U
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	37	U
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	37	U
5103-71-9	alpha-Chlordane	120	J
5103-74-2	gamma-Chlordane	200	
8001-35-2	Toxaphene	370	U
12674-11-2	Aroclor-1016	190	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	190	U
53469-21-9	Aroclor-1242	190	U
12672-29-6	Aroclor-1248	190	U
11097-69-1	Aroclor-1254	370	U
11096-82-5	Aroclor-1260	370	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ14

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33334

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 33 dec. __ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	24	U
319-85-7	beta-BHC	24	U
319-86-8	delta-BHC	24	U
58-89-9	gamma-BHC (Lindane)	24	U
76-44-8	Heptachlor	24	U
309-00-2	Aldrin	30	
1024-57-3	Heptachlor epoxide	24	U
959-98-8	Endosulfan I	24	U
60-57-1	Dieldrin	82	
72-55-9	4,4'-DDE	48	U
72-20-8	Endrin	48	U
33213-65-9	Endosulfan II	130	
72-54-8	4,4'-DDD	48	U
1031-07-8	Endosulfan sulfate	48	U
50-29-3	4,4'-DDT	370	
72-43-5	Methoxychlor	240	U
53494-70-5	Endrin ketone	48	U
5103-71-9	alpha-Chlordane	86	J
5103-74-2	gamma-Chlordane	110	J
8001-35-2	Toxaphene	480	U
12674-11-2	Aroclor-1016	240	U
11104-28-2	Aroclor-1221	240	U
11141-16-5	Aroclor-1232	240	U
53469-21-9	Aroclor-1242	240	U
12672-29-6	Aroclor-1248	240	U
11097-69-1	Aroclor-1254	480	U
11096-82-5	Aroclor-1260	480	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ15

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33335

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 21 dec. __ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
1024-57-3	Heptachlor epoxide	20	U
959-98-8	Endosulfan I	20	U
60-57-1	Dieldrin	41	U
72-55-9	4,4'-DDE	41	U
72-20-8	Endrin	41	U
33213-65-9	Endosulfan II	41	U
72-54-8	4,4'-DDD	41	U
1031-07-8	Endosulfan sulfate	41	U
50-29-3	4,4'-DDT	41	U
72-43-5	Methoxychlor	200	U
53494-70-5	Endrin ketone	41	U
5103-71-9	alpha-Chlordane	200	U
5103-74-2	gamma-Chlordane	200	U
8001-35-2	Toxaphene	410	U
12674-11-2	Aroclor-1016	200	U
11104-28-2	Aroclor-1221	200	U
11141-16-5	Aroclor-1232	200	U
53469-21-9	Aroclor-1242	200	U
12672-29-6	Aroclor-1248	200	U
11097-69-1	Aroclor-1254	410	U
11096-82-5	Aroclor-1260	410	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ16

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33336

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 40 dec. __ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.8 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	27	U
319-85-7	beta-BHC	27	U
319-86-8	delta-BHC	27	U
58-89-9	gamma-BHC (Lindane)	27	U
76-44-8	Heptachlor	27	U
309-00-2	Aldrin	250	
1024-57-3	Heptachlor epoxide	27	U
959-98-8	Endosulfan I	63	
60-57-1	Dieldrin	53	U
72-55-9	4,4'-DDE	62	
72-20-8	Endrin	53	U
33213-65-9	Endosulfan II	53	U
72-54-8	4,4'-DDD	53	U
1031-07-8	Endosulfan sulfate	53	U
50-29-3	4,4'-DDT	53	U
72-43-5	Methoxychlor	270	U
53494-70-5	Endrin ketone	53	U
5103-71-9	alpha-Chlordane	270	U
5103-74-2	gamma-Chlordane	220	J
8001-35-2	Toxaphene	530	U
12674-11-2	Aroclor-1016	270	U
11104-28-2	Aroclor-1221	270	U
11141-16-5	Aroclor-1232	270	U
53469-21-9	Aroclor-1242	270	U
12672-29-6	Aroclor-1248	270	U
11097-69-1	Aroclor-1254	530	U
11096-82-5	Aroclor-1260	530	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ17

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33337

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 54 dec. __ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.1 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	35	U
319-85-7	beta-BHC	35	U
319-86-8	delta-BHC	35	U
58-89-9	gamma-BHC (Lindane)	35	U
76-44-8	Heptachlor	35	U
309-00-2	Aldrin	45	
1024-57-3	Heptachlor epoxide	35	U
959-98-8	Endosulfan I	35	U
60-57-1	Dieldrin	70	U
72-55-9	4,4'-DDE	70	U
72-20-8	Endrin	70	U
33213-65-9	Endosulfan II	70	U
72-54-8	4,4'-DDD	70	U
1031-07-8	Endosulfan sulfate	70	U
50-29-3	4,4'-DDT	70	U
72-43-5	Methoxychlor	350	U
53494-70-5	Endrin ketone	70	U
5103-71-9	alpha-Chlordane	350	U
5103-74-2	gamma-Chlordane	350	U
8001-35-2	Toxaphene	700	U
12674-11-2	Aroclor-1016	350	U
11104-28-2	Aroclor-1221	350	U
11141-16-5	Aroclor-1232	350	U
53469-21-9	Aroclor-1242	350	U
12672-29-6	Aroclor-1248	350	U
11097-69-1	Aroclor-1254	700	U
11096-82-5	Aroclor-1260	700	U

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFJ18

Lab Name: SWL-TULSA Contract: 68-01-7393

Lab Code: SWOK Case No.: 13005 SAS No.: _____ SDG No.: EEA67

Matrix: (soil/water) SOIL Lab Sample ID: 33338

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 10/26/89

% Moisture: not dec. 14 dec. __ Date Extracted: 10/26/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/04/89

GPC Cleanup: (Y/N) Y pH: 7.2 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	28	
1024-57-3	Heptachlor epoxide	55	
959-98-8	Endosulfan I	19	U
60-57-1	Dieldrin	43	
72-55-9	4,4'-DDE	37	U
72-20-8	Endrin	37	U
33213-65-9	Endosulfan II	37	U
72-54-8	4,4'-DDD	37	U
1031-07-8	Endosulfan sulfate	37	U
50-29-3	4,4'-DDT	37	U
72-43-5	Methoxychlor	190	U
53494-70-5	Endrin ketone	37	U
5103-71-9	alpha-Chlordane	190	U
5103-74-2	gamma-Chlordane	190	U
8001-35-2	Toxaphene	370	U
12674-11-2	Aroclor-1016	190	U
11104-28-2	Aroclor-1221	190	U
11141-16-5	Aroclor-1232	190	U
53469-21-9	Aroclor-1242	190	U
12672-29-6	Aroclor-1248	190	U
11097-69-1	Aroclor-1254	370	U
11096-82-5	Aroclor-1260	370	U

ecology and environment, inc.
111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415
International Specialists in the Environment

CRL Receipt Date 11/30 FIT Receipt Date 1/11 Review Completed 1/17/90

TO: Rehrkopf
FROM: Mary Gzyra
SUBJECT: U.S.S. - Joliet
PAN: ILO333SA (1 hour charged for review) Case # 13005

Sample Description

Organics (VOA, ABN, Pest/PCB)		Inorganics (Metals, Cyanide)	
#	Low Soil	# 8	Low Soil
	Low Water		Low Water
	Drinking Water		Drinking Water
	Other		Other

Project Data Status XXX Completed!!

_____ Incomplete, awaiting _____

FIT Data Review Findings:

Check Data Sheets for Transcription Errors

✓ Compounds were detected in sample(s); see enclosed sheet.

Book No. 9 Page No. _____ Date Sampled 10/25

0759:2

recycled paper

3/ 11/15/90

Table 4- (Cont.)

Physical State*	Waste Characteristics**	Category***	SI Memo	Sample Collection Information and Parameters	Sample Number 1	2	3	4	5	6	7	8	9	10	11	12
				Analyte Detected (values in mg/kg or µg/L)	MEDH 33	34	35	36	MED509	MEFE 97	98	99				
Solid	A,D	MES	CSC/CWC	aluminum	2320	14300	15200	7020	2750	3380	4950	6870				
Solid	A,D	MES	HM	antimony		29.8		3.0 B		5.2 B		30.7				
Solid	A,D	MES	HM	arsenic	4.3	77.5	9.2	11.6	3.0	14.9	13.8 J	41.1				
Solid	A,D	MES	CSC/CWC	barium	18.1 B	86.1	124	135	45.6	55.3	72.6	164				
Solid	A,D	MES	M	beryllium		2.8	0.88 JB	1.6	0.23 JB	0.86 JB	1.4					
Solid	A,D	MES	HM	cadmium		9.2	4.9		0.81 JB		1.5 J	13.4				
Solid	D	MES	CSC/CWC	calcium	151000	43100	44300	30800	2970	7770 B	7980	21500				
Solid	A,D	MES	HM	chromium	16.2	129	95.3	14.8	8.7	14.3	13.2	390				
Solid	A,D	MES	HM	cobalt	2.5 B	17	11.4 B	7.4 B	2.3 B	8.7 B	11.2	20.7				
Solid	A,D	MES	HM	copper	21.2 JE	146 JE	175 JE	49.9 JE	13.6 JE	58.9 JE	93.2 JE	298 JE				
Solid	A,D	MES	HM,CSC;CWC	iron	18300 JE	273000 JE	33100 JE	39700 JE	6480 JE	110000 JE	42300 JE	320000 JE				
Solid	A,D	MES	HM	lead	41.5	2470	182	63	56.6	164	116	1360				
Solid	A,D	MES	CSC/CWC	magnesium	81800	9040	25300	12900	1380	2370	2260	8360				
Solid	A,D	MES	HM	manganese	365 JE	1000 JE	569 JE	712 JE	151 JE	1700 JE	1990 JE	2400 JE				
Liquid	A,D	MES	HM	mercury	0.34 JN	1.9 JN	1.9 JN	0.39 JN		0.63 JN	4.0 JN	0.86 JN				
Solid	A,D	MES	HM	nickel	9.5	90	68.8	25.1	7.3 B	21	50	222				
Solid	D	MES	CSC,CWC	potassium	670 JB	797 JB	2670	620 JB	1120 J	507 JB	695 JB	1350 J				
Solid	A,D	MES	M	selenium	0.41 JNB	0.92 JN+	0.95 JNB	0.84 JNB	0.39 JNB		1.3 JNM	0.57 JNB				
Solid	A,D	MES	HM	silver		3.8	1.5 JB	0.35 JB		0.89 JB		8.7				
Solid	D	MES	CSC,CWC	sodium	314 JEB	822 JEB	521 JEB	557 JEB	182 JEB	288 JEB	314 JEB	231 JEB				
Solid	A,D	MES	HM	thallium		0.49 B				0.54 B	0.46 B	0.69 B				
Solid	A,D	MES	HM	vanadium	9.1 B	30.9	33.1	18.7	10.2	25.5	24.5	31.5				
Solid	A,D	MES	CWL,CSC,HM	zinc	224 JNE	48200 JNE	463 JNE	247 JNE	131 JNE	218 JNE	422 JNE	2360 JNE				
Solid	A	IOC	IOC	cyanide								4.9 JN				

-- Not detected.

1/3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: 1-5-90

SUBJECT: Review of Region V CLP Data
Received for Review on Nov 30, 1989

1/11/90

FROM: Curtis Ross, Director (5SCRL)
Central Regional Laboratory Jay Theyken

TO: Data User: FIT

We have reviewed the data for the following case(s).

SITE NAME: U.S. Steel Corp - Joliet SMO case No. 13005

EPA Data Set No. _____ No. of Samples: 8 D.U./Activity Numbers _____

CRL No. _____

SMO Traffic No. MEDH 33-36, MEDS 09, MEFE 97-99

CLP Laboratory: Weyer Hrs. Required for Review: 10
+1/2 AX 1/4/85

Following are our findings:

The laboratory's portion of this case contains 8 low level soil samples analyzed for total metals and ~~total~~ cyanide.

gwk 1/2/90

( ) Data are acceptable for use.
(X) Data are acceptable for use with qualifications noted above.
( ) Data are preliminary - pending verification by Contractor Laboratory.
( ) Data are unacceptable.

cc: Duane Geuder, Quality Assurance Officer, EPA Support Services
James Petty, Chief Quality Assurance Research, EMSL, Las Vegas

EPA FORM 1320-6 (Rev. 5/87)

DATA QUALIFIERS

Contractor: Weyerhaeuser

Case 13005

Below is a summary of the out-of-control audits and the possible effect on the data for this case:

ICP Analyses: Al, Ca, and Mg data were flagged "*"; however, the duplicate RPD's for Al (21.9%), Ca (29.8%), and Mg (24.8%) were within the 35% limit for soils. All Al, Ca and Mg data are acceptable. Fe data were flagged "*"; however, the 32.4% duplicate RPD is within the 35% limit for soils. The 15.9% Fe serial dilution difference indicates interference, and all Fe data are estimated (J).
Serial dilution audits were out of control for Cu (15.3%) and Mn (14.3%), and all Cu and Mn data are estimated (J) due to interference.
The 94.4% Na serial dilution difference indicates interference, and Na on MEDH34-36 are estimated (J). The preparation blank was found to contain Na (100.677 mg/Kg), and all remaining Na results are estimated (J) due to interference and contamination.
The Zn spike (11.2% recovery) and serial dilution (16.9% difference) audits are out of control, and all Zn data are estimated (J) due to a low bias and interference.
The calibration blank was found to contain K (1504.3 ug/L), Be (1.2 ug/L), Ag (2.7 ug/L), and Cd (2.9 ug/L). The following results are estimated (J) due to contamination: K on all samples except MEDH35; Be on MEDH35, MEDS09, MEFE97; Ag on MEDH35,36, MEFE97; Cd on MEDS09, MEFE98.

GFAA Analyses: The As LCS analytical spike recovery was out of control; therefore, the As LCS audit contains no valid digestion QC information. As on MEFE98 should have been assayed by MSA - this result is estimated (J).

Reviewed by: J Gary 1/2/90

Phone:

DATA QUALIFIERS

Contractor: Weyerhaeuser

Case 13005

Below is a summary of the out-of-control audits and the possible effect on the DQs for this case:

The 70.2% Se spike recovery indicates a possible elevation of the detection limits, and Se on MEFE97 is estimated (UJ). This result was also flagged "W" indicating interference. Se on MEDH34 was corrected by the reviewer and flagged "+", and is estimated (J) due to a low bias and an MSA correlation coefficient < 0.995. Se on MEDH36 should have been assayed by MSA — this result is estimated (J) due to interference and a low bias. Se on MEFE98 was flagged "M" indicating a duplicate injection RSD >20% — this result is estimated (J) due to a low bias and interference. Se on MEFE99 was flagged "W" and is estimated (J) due to a low bias and interference. All other Se data are estimated (J) due to a low bias. The calibration blank was found to contain Se (2.3 µg/L) indicating contamination on samples MEDH36 and MEFE98. These results are qualified above. Tl on MEDH35 and 36 were flagged "W" indicating interference and are estimated (UJ).

Other Qualifiers: The 187.1% Hg spike recovery indicates a high bias. Hg on MEDS09 was < IDL and is acceptable. All other mercury data are estimated (J).
The 17.0% CN spike recovery indicates a ~~high~~ quite low bias, and CN on ~~MED~~ MEFE99 is estimated (J); all other cyanide data are unusable (R).

Reviewed by: J Gary 1/2/90

Phase:

QC EXCEPTION SUMMARY REPORT

CASE # 13005
DATA SET #
LAB Q.C.#
DATE: 12/29/89

SITE US Steel
LAB Weyerhaeuser
REVIEWED BY Ganz

MATRIX: Soil
CONC. : Low
MATRIX:
CONC. :

WATER SAMPLE SPK.
WATER SAMPLE DUP.
SOIL SAMPLE SPK.
SOIL SAMPLE DUP.

	OVERALL CASE QC									MATRIX SPECIFIC QC						SAMPLE SPECIFIC QC		FIELD QC			REGIONAL QC			OTHER/ COMMENTS
	Holding Time	Cal Blanks	Std Calcs	Contam Calcs	Prep Blk AQ	Prep Blk SOL	ICS Sol	ICS % AQ	ICS % SOL	Sol Dup RPD	Sol Spk % R	AQ Dup RPD	AQ Spk % R	Ser Dilu AQ	Ser Dilu SOL	GFAA Dup	GFAA Spike	Blank	Dup RPD	Spike % R	Blank Blank	Blank Spike % R	Spike Sample RPD	
Aluminum										21.9	OK													
Antimony																								
Arsenic									W															98 s.b. MSA
Barium																								
Beryllium																								
Cadmium																								
Calcium										29.8	OK													
Chromium																								
Cobalt																								
Copper															15.3									
Iron										32.4	OK				15.9									
Lead																								
Magnesium										24.8	OK													
Manganese															14.3									
Mercury											187.1													
Nickel																								
Potassium																								
Selenium											70.2													36 s.b. MSA
Silver																								
Sodium															94.4									
Thallium																								
Tin																								
Vanadium																								
Zinc											11.2				16.9									
Cyanide											17.0													

PB/ Na (100.677): 33,09,97-99

CB/ K (1504.3): 34,36,09,97,98,99,33
Be (1.2): 35,09,97
Ag (2.7): 35,36,97
Tl (2.9): 09,98

As (2.8): 36
Se (2.3): 36,98

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

SOW No.: 7/88

EPA Sample No.	Lab Sample ID.
MEDH33	38875
MEDH33D	38875D
MEDH33S	38875S
MEDH34	38876
MEDH35	38877
MEDH36	38878
MEDS09	38879
MEFE97	38880
MEFE98	38881
MEFE99	38882

RECEIVED
NOV 30 1989
US EPA CENTRAL REGIONAL LAB.
536 S. CLARK ST.
CHICAGO, ILLINOIS 60605

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES
If yes, were raw data generated before application of background corrections? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms, and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Kari Doxsee Name: Kari Doxsee

Date: 11-29-89 Title: Lab Mgr

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEDH33

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Lab Sample ID: 38875

Level (low/med): LOW Date Received: 10/26/89

% Solids: 74.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2320		*	P
7440-36-0	Antimony	2.2	U		P
7440-38-2	Arsenic	4.3			F
7440-39-3	Barium	18.1	B		P
7440-41-7	Beryllium	0.20	U		P
7440-43-9	Cadmium	0.40	U		P
7440-70-2	Calcium	151000		*	P
7440-47-3	Chromium	16.2			P
7440-48-4	Cobalt	2.5	B		P
7440-50-8	Copper	21.2		E	P
7439-89-6	Iron	18300		E*	P
7439-92-1	Lead	41.5			P
7439-95-4	Magnesium	81800		*	P
7439-96-5	Manganese	365		E	P
7439-97-6	Mercury	0.34		N	CV
7440-02-0	Nickel	9.5			P
7440-09-7	Potassium	670	B		P
7782-49-2	Selenium	0.41	B	N	F
7440-22-4	Silver	0.40	U		P
7440-23-5	Sodium	314	B	E	P
7440-28-0	Thallium	0.39	U		F
7440-62-2	Vanadium	9.1	B		P
7440-66-6	Zinc	224		EN	P
	Cyanide	0.66	U	N	AS

Color Before: BLACK Clarity Before: Texture: COARSE

Color After: BROWN Clarity After: Artifacts:

Comments:

DPO: [ ] ACTION [ ] FYI Region V

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 13005 LABORATORY Weyerhaeuser

SDG NO. MEDH33 DATA USER FIT

SOW 788 REVIEW COMPLETION DATE 1/2/90

NO. OF SAMPLES _____ WATER 8 SOIL _____ OTHER -

REVIEWER [ ] ESD [X] ESAT [ ] OTHER, CONTRACT/CONTRACTOR _____

	ICP	AA	Hg	CYANIDE
1. HOLDING TIMES	F	F	F	F
2. INITIAL CALIBRATIONS	O	O	O	O
3. CONTINUING CALIBRATIONS	O	O	O	O
4. FIELD BLANKS ('F' = not applicable)	F	F	F	F
5. LABORATORY BLANKS	M	M	O	O
6. ICS	O			
7. LCS	O	O		
8. DUPLICATE ANALYSIS	O	O	O	O
9. MATRIX SPIKE	M	M	M	M, Z
10. MSA		M		
11. SERIAL DILUTION	M			
12. SAMPLE VERIFICATION	O	O	O	O
13. REGIONAL QC ('F' = not applicable)	F	F	F	F
14. OVERALL ASSESSMENT	M	M	M	M, Z

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.

DPO ACTION ITEMS: _____

AREAS OF CONCERN: _____

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEDH34

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Lab Sample ID: 38876

Level (low/med): LOW Date Received: 10/26/89

% Solids: 56.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14300		*	P
7440-36-0	Antimony	29.8			P
7440-38-2	Arsenic	77.5			F
7440-39-3	Barium	86.1			P
7440-41-7	Beryllium	2.8			P
7440-43-9	Cadmium	9.2			P
7440-70-2	Calcium	43100		*	P
7440-47-3	Chromium	129			P
7440-48-4	Cobalt	17.0			P
7440-50-8	Copper	146		E	P
7439-89-6	Iron	273000		E*	P
7439-92-1	Lead	2470			P
7439-95-4	Magnesium	9040		*	P
7439-96-5	Manganese	1000		E	P
7439-97-6	Mercury	1.9		N	CV
7440-02-0	Nickel	90.0			P
7440-09-7	Potassium	797	B		~~P~~
7782-49-2	Selenium	0.92 ~~1.8~~		N+	~~F~~
7440-22-4	Silver	3.8			P
7440-23-5	Sodium	822	B	E	P
7440-28-0	Thallium	0.49	B		F
7440-62-2	Vanadium	30.9			P
7440-66-6	Zinc	48200		EN	P
	Cyanide	0.87	U	N	AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEDH35

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Lab Sample ID: 38877

Level (low/med): LOW Date Received: 10/26/89

% Solids: 45.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15200		*	P
7440-36-0	Antimony	3.7	U		P
7440-38-2	Arsenic	9.2			F
7440-39-3	Barium	124			P
7440-41-7	Beryllium	0.88	B		P
7440-43-9	Cadmium	4.9			P
7440-70-2	Calcium	44300		*	P
7440-47-3	Chromium	95.3			P
7440-48-4	Cobalt	11.4	B		P
7440-50-8	Copper	175		E	P
7439-89-6	Iron	33100		E*	P
7439-92-1	Lead	182			P
7439-95-4	Magnesium	25300		*	P
7439-96-5	Manganese	569		E	P
7439-97-6	Mercury	1.9		N	CV
7440-02-0	Nickel	68.9			P
7440-09-7	Potassium	2670			P
7782-49-2	Selenium	0.95	B	N	F
7440-22-4	Silver	1.5	B		P
7440-23-5	Sodium	521	B	E	P
7440-28-0	Thallium	0.65	U	W	F
7440-62-2	Vanadium	33.1			P
7440-66-6	Zinc	463		EN	P
	Cyanide	1.1	U	N	AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEDH36

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Lab Sample ID: 38878

Level (low/med): LOW Date Received: 10/26/89

% Solids: 89.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7020		*	P
7440-36-0	Antimony	3.0	B		P
7440-38-2	Arsenic	11.6			F
7440-39-3	Barium	135			P
7440-41-7	Beryllium	1.6			P
7440-43-9	Cadmium	0.32	U		P
7440-70-2	Calcium	30800		*	P
7440-47-3	Chromium	14.8			P
7440-48-4	Cobalt	7.4	B		P
7440-50-8	Copper	49.9		E	P
7439-89-6	Iron	39700		E*	P
7439-92-1	Lead	63.0			P
7439-95-4	Magnesium	12900		*	P
7439-96-5	Manganese	712		E	P
7439-97-6	Mercury	0.39		N	CV
7440-02-0	Nickel	25.1			P
7440-09-7	Potassium	620	B		P
7782-49-2	Selenium	0.84	B	N	F
7440-22-4	Silver	0.35	B		P
7440-23-5	Sodium	557	B	E	P
7440-28-0	Thallium	0.34	U	W	F
7440-62-2	Vanadium	18.7			P
7440-66-6	Zinc	247		EN	P
	Cyanide	0.54	U	N	AS

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEDS09

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Lab Sample ID: 38879

Level (low/med): LOW Date Received: 10/26/89

% Solids: 88.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2750		*	P
7440-36-0	Antimony	2.1	U		P
7440-38-2	Arsenic	3.0			F
7440-39-3	Barium	45.6			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	0.81	B		P
7440-70-2	Calcium	2970		*	P
7440-47-3	Chromium	8.7			P
7440-48-4	Cobalt	2.3	B		P
7440-50-8	Copper	13.6		E	P
7439-89-6	Iron	6490		E*	P
7439-92-1	Lead	56.6			P
7439-95-4	Magnesium	1380		*	P
7439-96-5	Manganese	151		E	P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	7.3	B		P
7440-09-7	Potassium	1120			P
7782-49-2	Selenium	0.39	B	N	F
7440-22-4	Silver	0.38	U		P
7440-23-5	Sodium	182	B	E	P
7440-28-0	Thallium	0.35	U		F
7440-62-2	Vanadium	10.2			P
7440-66-6	Zinc	131		EN	P
	Cyanide	0.55	U	N	AS

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEFE97

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Lab Sample ID: 38880

Level (low/med): LOW Date Received: 10/26/89

% Solids: 87.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3380		*	P
7440-36-0	Antimony	5.2	B		P
7440-38-2	Arsenic	14.9			F
7440-39-3	Barium	55.3			P
7440-41-7	Beryllium	0.86	B		P
7440-43-9	Cadmium	0.37	U		P
7440-70-2	Calcium	7720	B	*	P
7440-47-3	Chromium	14.3			P
7440-48-4	Cobalt	8.7	B		P
7440-50-8	Copper	58.9		E	P
7439-89-6	Iron	110000		E*	P
7439-92-1	Lead	164			P
7439-95-4	Magnesium	2370		*	P
7439-96-5	Manganese	1700		E	P
7439-97-6	Mercury	0.63		N	CV
7440-02-0	Nickel	21.0			P
7440-09-7	Potassium	507	B		P
7782-49-2	Selenium	0.38	U	NW	F
7440-22-4	Silver	0.89	B		P
7440-23-5	Sodium	288	B	E	P
7440-28-0	Thallium	0.54	B		F
7440-62-2	Vanadium	25.5			P
7440-66-6	Zinc	218		EN	P
	Cyanide	0.56	U	N	AS

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEFE98

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Lab Sample ID: 38881

Level (low/med): LOW Date Received: 10/26/89

% Solids: 85.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4950		*	P
7440-36-0	Antimony	2.1	U		P
7440-38-2	Arsenic	13.8			F
7440-39-3	Barium	72.6			P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	1.5			P
7440-70-2	Calcium	7980		*	P
7440-47-3	Chromium	13.2			P
7440-48-4	Cobalt	11.2			P
7440-50-8	Copper	93.2		E	P
7439-89-6	Iron	42300		E*	P
7439-92-1	Lead	116			P
7439-95-4	Magnesium	2260		*	P
7439-96-5	Manganese	1990		E	P
7439-97-6	Mercury	4.0		N	CV
7440-02-0	Nickel	30.0			P
7440-09-7	Potassium	693	B		P
7782-49-2	Selenium	1.3		MN	F
7440-22-4	Silver	0.39	U		P
7440-23-5	Sodium	314	B	E	P
7440-28-0	Thallium	0.46	B		F
7440-62-2	Vanadium	24.5			P
7440-66-6	Zinc	422		EN	P
	Cyanide	0.58	U	N	AS

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MEFE99

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Lab Sample ID: 38882

Level (low/med): LOW Date Received: 10/26/89

% Solids: 66.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6870		*	P
7440-36-0	Antimony	30.7			P
7440-38-2	Arsenic	41.1			F
7440-39-3	Barium	164			P
7440-41-7	Beryllium	0.25	U		P
7440-43-9	Cadmium	13.4			P
7440-70-2	Calcium	21500		*	P
7440-47-3	Chromium	390			P
7440-48-4	Cobalt	20.7			P
7440-50-8	Copper	298		E	P
7439-89-6	Iron	320000		E*	P
7439-92-1	Lead	1360			P
7439-95-4	Magnesium	8360		*	P
7439-96-5	Manganese	2400		E	P
7439-97-6	Mercury	0.86		N	CV
7440-02-0	Nickel	222			P
7440-09-7	Potassium	1350			P
7782-49-2	Selenium	0.57	B	NW	F
7440-22-4	Silver	8.7			P
7440-23-5	Sodium	231	B	E	P
7440-28-0	Thallium	0.69	B		F
7440-62-2	Vanadium	31.5			P
7440-66-6	Zinc	2360		EN	P
	Cyanide	4.9		N	AS

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts:

Comments:

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BLANKS

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	9.0	U	9.0	U	9.0	U	9.0	U	16.711	B	P
Antimony	11.0	U	11.0	U	11.0	U	11.0	U	-2.715	B	P
Arsenic	1.0	B	2.8	B	1.3	B	1.0	U	0.200	B	F
Barium	2.4	B	8.7	B	3.2	B	1.0	U	0.396	B	P
Beryllium	1.0	U	1.0	U	1.2	B	1.0	U	0.200	U	P
Cadmium	2.0	U	2.9	B	2.0	U	2.0	U	0.400	U	P
Calcium											
Chromium	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Cobalt	-1.0	B	2.3	B	1.7	B	1.0	U	-0.365	B	P
Copper	1.0	U	4.2	B	1.8	B	1.0	U	0.332	B	P
Iron											
Lead	24.0	U	24.0	U	38.0		24.0	U	4.800	U	P
Magnesium	-196.4	B	498.4	B	392.7	B	122.0	U	24.400	U	P
Manganese	1.0	U	7.2	B	7.8	B	1.0	U	0.200	U	P
Mercury	0.2	U	0.2	U	0.2	U			0.100	U	CV
Nickel	16.0	U	16.0	U	16.0	U	16.0	U	3.200	U	P
Potassium	327.0	U	912.6	B	1504.3	B	327.0	U	65.400	U	P
Selenium	-2.3	B	2.0	U	2.0	U	2.0	U	0.400	U	F
Silver	2.0	U	2.7	B	2.0	U	2.0	U	0.400	U	P
Sodium	63.2	B	42.9	B	42.9	B	9.0	B	100.677	B	P
Thallium	2.0	U	2.0	U	2.0	U	2.0	U	0.400	U	F
Vanadium	2.0	U	6.6	B	8.8	B	2.0	U	0.400	U	P
Zinc											
Cyanide	10.0	U	10.0	U	10.0	U	10.0	U	0.500	U	AS

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BLANKS

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic			1.4	B							F
Barium											
Beryllium											
Cadmium											
Calcium									13.295	B	P
Chromium											
Cobalt											
Copper											
Iron									5.098	B	P
Lead											
Magnesium											
Manganese											
Mercury									0.100	U	CV
Nickel											
Potassium											
Selenium			2.3	B							F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc									-0.582	B	P
Cyanide			10.0	U	10.0	U	10.0	U			AS

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BLANKS

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium	7.3	B	183.1	B	175.9	B	58.0	B			P
Chromium											
Cobalt											
Copper											
Iron	7.0	U	16.6	B	21.9	B	7.0	U			P
Lead											
Magnesium											
Manganese											
Mercury	0.2	U	0.2	U							CV
Nickel											
Potassium											
Selenium	2.8	B	2.0	U	2.0	U					F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

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BLANKS

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc	2.0	U	-3.3	B	2.2	B	-2.3	B			P
Cyanide											

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEDH33S

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Level (low/med): LOW
% Solids for Sample: 74.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	84.0785		2.1772	U	101.20	83.1		P
Arsenic	75-125	11.4155		4.2636		7.86	91.0		F
Barium	75-125	386.3230		18.0503	B	404.78	91.0		P
Beryllium	75-125	8.3723		0.1979	U	10.12	82.7		P
Cadmium	75-125	8.2965		0.3959	U	10.12	82.0		P
Calcium									NR
Chromium	75-125	47.2066		16.2161		40.48	76.6		P
Cobalt	75-125	85.3635		2.5257	B	101.20	81.9		P
Copper	75-125	62.3288		21.2125		50.60	81.3		P
Iron									NR
Lead	75-125	120.7562		41.4943		101.20	78.3		P
Magnesium									NR
Manganese	75-125	468.0111		364.7326		101.20	102.1		P
Mercury	75-125	1.3850		0.3375		0.56	187.1	N	CV
Nickel	75-125	91.9544		9.4503		101.20	81.5		P
Potassium									NR
Selenium	75-125	1.7880		0.4126	B	1.96	70.2	N	F
Silver	75-125	8.8977		0.3959	U	10.12	87.9		P
Sodium									NR
Thallium	75-125	10.5707		0.3930	U	9.82	107.6		F
Vanadium	75-125	98.3142		9.1447	B	101.20	88.1		P
Zinc	75-125	235.1716		223.8761		101.20	11.2	N	P
Cyanide	75-125	1.1327		0.6598	U	6.66	17.0	N	AS

Comments:

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

MEDH33A

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc		1960.47		1131.11		1000.0	82.9		P
Cyanide		123.00		10.00	U	100.0	123.0		AS

Comments:

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DUPLICATES

EPA SAMPLE NO.

MEDH33D

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 74.3 % Solids for Duplicate: 76.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		2316.2787		2885.0334		21.9	*	P
Antimony		2.1772	U	2.2263	U			P
Arsenic	2.0	4.2636		3.8262		10.8		F
Barium		18.0503	B	23.2725	B	25.3		P
Beryllium		0.1979	U	0.2024	U			P
Cadmium		0.3959	U	0.4048	U			P
Calcium		150983.0800		111842.2500		29.8	*	P
Chromium		16.2161		19.5041		18.4		P
Cobalt		2.5257	B	2.5492	B	0.9		P
Copper	4.9	21.2125		21.9382		3.4		P
Iron		18263.5710		25312.5790		32.4	*	P
Lead		41.4943		42.6150		2.7		P
Magnesium		81754.2280		63722.0440		24.8	*	P
Manganese		364.7326		392.5675		7.4		P
Mercury	0.1	0.3375		0.3671		8.4		CV
Nickel	7.9	9.4503		9.9655		5.3		P
Potassium		669.7045	B	804.5681	B	18.3		P
Selenium		0.4126	B	0.3845	U	200.0		F
Silver		0.3959	U	0.4048	U			P
Sodium		313.6430	B	307.9255	B	1.8		P
Thallium		0.3930	U	0.3845	U			F
Vanadium		9.1447	B	10.0341	B	9.3		P
Zinc		223.8761		232.0763		3.6		P
Cyanide	0.7	0.6598	U	0.6471	U			AS

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

ICP ID Number: ICAP61 Date: 10/15/89

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.15		200.0	9.0	P
Antimony	217.58		60.0	11.0	P
Arsenic			10.0		
Barium	493.41		200.0	1.0	P
Beryllium	313.04		5.0	1.0	P
Cadmium	228.80		5.0	2.0	P
Calcium	317.93		5000.0	7.0	P
Chromium	267.72		10.0	3.0	P
Cobalt	228.62		50.0	1.0	P
Copper	324.75		25.0	1.0	P
Iron	259.94		100.0	7.0	P
Lead	220.35		3.0	24.0	P
Magnesium	383.20		5000.0	122.0	P
Manganese	257.61		15.0	1.0	P
Mercury			0.2		
Nickel	231.60		40.0	16.0	P
Potassium	766.49		5000.0	327.0	P
Selenium			5.0		
Silver	328.07		10.0	2.0	P
Sodium	589.00		5000.0	8.0	P
Thallium			10.0		
Vanadium	292.40		50.0	2.0	P
Zinc	213.86		20.0	2.0	P

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

ICP ID Number: Date: 10/15/89

Flame AA ID Number:

Furnace AA ID Number: PE_Z/3030

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic	193.76	BZ	10.0	1.0	F
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury			0.2		
Nickel			40.0		
Potassium			5000.0		
Selenium	196.09	BZ	5.0	2.0	F
Silver			10.0		
Sodium			5000.0		
Thallium	276.79	BZ	10.0	2.0	F
Vanadium			50.0		
Zinc			20.0		

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: WEYERHAEUSER COMPANY Contract: 68-D9-0080

Lab Code: WEYER Case No.: 13005 SAS No.: SDG No.: MEDH33

ICP ID Number: Date: 10/15/89

Flame AA ID Number: PE5000

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200.0		
Antimony			60.0		
Arsenic			10.0		
Barium			200.0		
Beryllium			5.0		
Cadmium			5.0		
Calcium			5000.0		
Chromium			10.0		
Cobalt			50.0		
Copper			25.0		
Iron			100.0		
Lead			3.0		
Magnesium			5000.0		
Manganese			15.0		
Mercury	253.70		0.2	0.2	CV
Nickel			40.0		
Potassium			5000.0		
Selenium			5.0		
Silver			10.0		
Sodium			5000.0		
Thallium			10.0		
Vanadium			50.0		
Zinc			20.0		

Comments: