8A

0043634

9105L712-WES-081

WESTON

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 05-28-91
RFW #: 9105L712, GC/MS VOLATILE
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of four (4) soil samples collected on 05-22-91.

The samples were analyzed according to criteria set forth in CLP SOW 2/88 (rev 5/89) for TCL Volatile target compounds on 05-30-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Non-target compounds were detected in these samples.

2. Sample BOOY93 required a medium level analysis because it contained high levels of non-target compounds.

3. All surrogate recoveries were within EPA QC limits.

4. All matrix spike recoveries were within EPA QC limits.

5. The laboratory blanks contained the common contaminants methylene chloride and acetone at levels less than 3x the CRQL.

6. All internal standard area and retention time criteria were met.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

6.6.91
Date

FEB 1996 RECEIVED EDMC

WESTON Analytics Use Only
9105L712

Custody Transfer Record/Lab Work Request

WESTON

Page 1 of 1

Client: Westinghouse Hanford
Est. Final Proj. Sampling Date:
Work Order #: 1e1168-02-01
Project Contact/Phone #:
AD Project Manager: Q King
QC: CLP Del: CLP TAT: 10 day
Date Rec'd: 5/28/91 Date Due: 6/7/91
Account #: 115-HMIF10D

Refrigerator #		1	6	→							2		4	2			
#/Type Container	Liquid																
	Solid	3/6	1/6	→							1/6		1/6	1/6			
Volume	Liquid																
	Solid	125	250	→							250		250	250			
Preservatives																	

ANALYSES REQUESTED →

	ORGANIC							INORG						
	VOA	BNA	~~Pest~~ PCB	Herb				Metal	CN	Lab Chem	Anion			
	062344	062354	0908					See Below		Isolate See Below				
Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected										
001	B00Y88		S	5/22/91	✓	✓	✓	✓		✓	✓			
2	Y89													
3	Y91													
4	Y93													

MATRIX CODES:
SE - Sediment
SO - Solid
SL - Sludge
W - Water
O - Oil
A - Air
DS - Drum Solids
DL - Drum Liquids
L - EP/TCLP Leachate
Wi - Wipe
X - Other
F - Fish

Anion = IC01, IC002, IC003, IC004, IC005, IC006

*Radiochem - gamma per, total U, radiologic U -

Special Instructions:
Metals = Westinghouse ICP
date Rec'd 5/24/91 -
10 days begins from
5/28/91 per Q King

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

WESTON Analytics Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

COC Tape was: 1) Present on Outer Package (Y) or N
2) Unbroken on Outer Package (Y) or N
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
	Q King	5/24/91	3 pm				

Discrepancies Between Samples Labels and COC Record? Y or (N)
NOTES:

RFW 31-21-001/Rev/90 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# ___ Cooler# ___ 596a

RADIOACTIVE SAMPLE EVALUATION

I. Sample Custodian: C. Piper RFW Batch # _____ DATE: 5-27-91

Package received from:

Client: WESTINGHOUSE Location: HANFORD, WA

Mode of Transport: __ UPS __ Fed EX X Other - Emery Worldwide

DOT labels: __ Radioactive White I __ Radioactive Yellow II __ Radioactive Yellow III __ Other _____

Transport Index: N/A Security Seal: X Yes __ No

II. Package Survey:

Gamma instrument make, model, serial #: LUDLUM MODEL 19 144415 (recently calib. on 5-24-91)
Calibration date: 8-28-90

Source response check: Th-228
Source type and ID #: 8644-2 Response 130 microR/hr

Package Survey: (microR/hr) max. reading: 4 Background: 3

III. Sample Container Measurements:

Alpha instrument make, model, serial #: LUDLUM MODEL 43-558660
Calibration Date: 11-2-90 Efficiency factor: 8.69 dpm/cpm

Source Response Check: Th-230
Source type and ID #: Sn-12059 Response: 2600 cpm

Gamma instrument make, model, serial #: LUDLUM MODEL 1958099
Calibration Date: 8-11-90 Gamma Background = 4 microR/hr

Source Response Check:
Source type and ID#: Ba-133 6018500 Response: 800 microR/hr

Sample ID	Form (liq or sol)	RFW ID Batch	Gamma microR/hr	Alpha cpm	Alpha eff. fact	Alpha dpm	nCi/g	Mass (g)	nCi
800Y 94	SOL		4	0			0.0312		
95			4	0			0.0278		
96			4	0			0.0278		
87			4	0			0.0258		
88			4	0			0.0128		
86			4	0			0.0164		
85			4	0			0.0032		
80			4	0			0.0161		
81			4	0			0.0384		

RFW 31-0203

NOT RADIOACTIVE CSF 7-9-91 13:23

RADIOACTIVE SAMPLE EVALUATION

1 710 713

I. Sample Custodian: L. Piper RFW Batch # _____ DATE: 5-27-91

Package received from:

Client: WESTINGHOUSE Location: HANFORD, WA

Mode of Transport: __ UPS __ Fed EX X Other EMERY GROUNDWIDE

DOT labels: __ Radioactive White I __ Radioactive Yellow II
__ Radioactive Yellow III __ Other _____

Transport Index: N/A Security Seal: X Yes __ No

II. Package Survey:

Gamma instrument make, model, serial #: LUDLUM MODEL 19444-5
(Calibration date MAY. 5-24-91)
Calibration date: 8-28-90

Source response check: Th-228
Source type and ID #: 8644-2 Response 130 microR/hr

Package Survey: (microR/hr) max. reading: 4 Background: 3

III. Sample Container Measurements:

Alpha instrument make, model, serial #: LUDLUM MODEL 43-5 ~~58099~~ 58669 (5-27-91)
Calibration Date: ~~6-11-90~~ (5-27-91) 11-2-90 Efficiency factor: 8.69 dpm/cpm

Source Response Check: Th-230
Source type and ID #: Sn-12059 Response: 2600 cpm

Gamma instrument make, model, serial #: LUDLUM MODEL 1958099
Calibration Date: 6-11-90 Gamma Background = ~~800~~ (5-27-91) 4 microR/hr

Source Response Check:
Source type and ID#: Ba-133 6018500 Response: 800 microR/hr

Sample ID	Form (liq or sol)	RFW ID Batch	Gamma microR/hr	Alpha cpm	Alpha eff. fact	Alpha dpm	nCi/g	Mass (g)	nCi
B00Xm6	LIQ		4	0			0.0007		
L7			4				0		
M0			4				0		
Q6			4				0.0010		
B00Y B3	SOL		4				0.0222		
84			4				0.0434		
93			4				0.0433		
91			5				0.0102		
92			4				0.0234		
89			4				0.0408		
90			4				0.0096		

RFW 11-21-013/X.R.701

NOT RADIOACTIVE CSP 5-27-91 13:23

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9105L712 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 06/03/91 15:31 Page: 1a

	Cust ID:	BOOY88		BOOY89		BOOY91		BOOY91		BOOY91		BOOY93	
Sample Information	RFW#:	001		002		003		003 MS		003 MSD		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		0.980		1.00		1.25	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
	Level:	LOW		LOW		LOW		LOW		LOW		MED	
Surrogate Recovery	Toluene-d8	98	%	93	%	94	%	92	%	97	%	102	%
	Bromofluorobenzene	93	%	93	%	92	%	89	%	95	%	100	%
	1,2-Dichloroethane-d4	75	%	70	%	71	%	70	%	73	%	93	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U	10	U	1300	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	1300	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	1300	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	1300	U
Methylene Chloride		27	B	20	B	24	B	25	B	25	B	1100	
Acetone		27	B	24	B	17	B	36	B	34	B	1300	U
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	650	U
1,1-Dichloroethene		5	U	5	U	5	U	99	%	101	%	650	U
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U	650	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U	5	U	650	U
Chloroform		5	U	5	U	5	U	5	U	5	U	650	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	650	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	1300	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U	650	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	650	U
Vinyl Acetate		10	U	10	U	10	U	10	U	10	U	1300	U
Bromodichloromethane		5	U	5	U	5	U	5	U	5	U	650	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U	650	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	650	U
Trichloroethene		5	U	5	U	5	U	106	%	116	%	650	U
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U	650	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	650	U
Benzene		5	U	5	U	5	U	91	%	97	%	650	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	650	U
Bromoform		5	U	5	U	5	U	5	U	5	U	650	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	1300	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	1300	U
Tetrachloroethene		5	U	5	U	5	U	5	U	5	U	650	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U	5	U	650	U

*= Outside of EPA CLP QC limits.

BEST AVAILABLE COPY

Cust ID:	BOOY88	BOOY89	BOOY91	BOOY91	BOOY91	BOOY93
RFW#:	001	002	003	003 MS	003 MSD	004
Level:	LOW	LOW	LOW	LOW	LOW	MED
Toluene	1 J	5 U	5 U	94 %	101 %	650 U
Chlorobenzene	5 U	5 U	5 U	104 %	109 %	650 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	650 U
Styrene	5 U	5 U	5 U	5 U	5 U	650 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	650 U

*= Outside of EPA CLP QC limits.

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VOLATILE ORGANICS ANALYSIS SHEET 0000021

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-001

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053007

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 1

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

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

1E

VOLATILE ORGANICS ANALYSIS SHEET 0000022

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-001

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053007

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 1

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A

VOLATILE ORGANICS ANALYSIS SHEET 0000032

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-002

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053008

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	20	B
67-64-1	Acetone	24	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS 0000033

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-002

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053008

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A
VOLATILE ORGANICS ANALYSIS SHEET 0000041

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-003

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053009

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	24	B
67-64-1	Acetone	17	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS 0000042

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-003

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053009

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A

VOLATILE ORGANICS ANALYSIS SHEET

0000050

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-004

Sample wt/vol: 4.00 (g/mL) G

Lab File ID: AX5U11

Level: (low/med) MED

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) CAP

Dilution Factor: 1.25

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	1300	U
74-83-9	Bromomethane	1300	U
75-01-4	Vinyl Chloride	1300	U
75-00-3	Chloroethane	1300	U
75-09-2	Methylene Chloride	1100	
67-64-1	Acetone	1300	U
75-15-0	Carbon Disulfide	650	U
75-35-4	1,1-Dichloroethene	650	U
75-34-3	1,1-Dichloroethane	650	U
540-59-0	1,2-Dichloroethene (total)	650	U
67-66-3	Chloroform	650	U
107-06-2	1,2-Dichloroethane	650	U
78-93-3	2-Butanone	1300	U
71-55-6	1,1,1-Trichloroethane	650	U
56-23-5	Carbon Tetrachloride	650	U
108-05-4	Vinyl Acetate	1300	U
75-27-4	Bromodichloromethane	650	U
78-87-5	1,2-Dichloropropane	650	U
10061-01-5	cis-1,3-Dichloropropene	650	U
79-01-6	Trichloroethene	650	U
124-48-1	Dibromochloromethane	650	U
79-00-5	1,1,2-Trichloroethane	650	U
71-43-2	Benzene	650	U
10061-02-6	Trans-1,3-Dichloropropene	650	U
75-25-2	Bromoform	650	U
108-10-1	4-Methyl-2-pentanone	1300	U
591-78-6	2-Hexanone	1300	U
127-18-4	Tetrachloroethene	650	U
79-34-5	1,1,2,2-Tetrachloroethane	650	U
108-88-3	Toluene	650	U
108-90-7	Chlorobenzene	650	U
100-41-4	Ethylbenzene	650	U
100-42-5	Styrene	650	U
1330-20-7	Xylene (total)	650	U

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS 000005 1

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-004

Sample wt/vol: 4.00 (g/mL) G

Lab File ID: AX5U11

Level: (low/med) MED

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) CAP

Dilution Factor: 1.25

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	22.57	2000	J
2.	ALKANE	22.98	4000	J
3.	ALKANE	23.63	6000	J
4.	ALKANE	23.90	3000	J
5.	ALKANE	24.33	3000	J
6.	UNKNOWN	24.72	900	J

Roy F. Weston, Inc. - Lionville Laboratory
Semivolatiles by GC/MS, HSL List

RFW Batch Number: 9105L712 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 06/04/91 23:11 Page: 1a

	Cust ID:	BOOY88		BOOY89		BOOY91		BOOY93		SBLK		SBLK BS	
Sample Information	RFW#:	001		002		003		004		91LE0693-MB1		91LE0693-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	74	%	67	%	70	%	60	%	88	%	85	%
	2-Fluorobiphenyl	80	%	78	%	81	%	77	%	96	%	96	%
	p-Terphenyl-d14	78	%	74	%	79	%	89	%	106	%	100	%
	Phenol-d5	103	%	94	%	94	%	93	%	111	%	105	%
	2-Fluorophenol	107	%	101	%	103	%	98	%	103	%	110	%
	2,4,6-Tribromophenol	61	%	55	%	55	%	110	%	58	%	71	%
Phenol		350	U	330	U	330	U	340	U	330	U	111 *	%
bis(2-Chloroethyl)ether		350	U	330	U	330	U	340	U	330	U	330	U
2-Chlorophenol		350	U	330	U	330	U	340	U	330	U	89	%
1,3-Dichlorobenzene		350	U	330	U	330	U	340	U	330	U	330	U
1,4-Dichlorobenzene		350	U	330	U	330	U	340	U	330	U	80	%
Benzyl alcohol		350	U	330	U	330	U	340	U	330	U	330	U
1,2-Dichlorobenzene		350	U	330	U	330	U	340	U	330	U	330	U
2-Methylphenol		350	U	330	U	330	U	340	U	330	U	330	U
bis(2-Chloroisopropyl)ether		350	U	330	U	330	U	340	U	330	U	330	U
4-Methylphenol		350	U	330	U	330	U	340	U	330	U	330	U
N-Nitroso-Di-n-propylamine		350	U	330	U	330	U	340	U	330	U	65	%
Hexachloroethane		350	U	330	U	330	U	340	U	330	U	330	U
Nitrobenzene		350	U	330	U	330	U	340	U	330	U	330	U
Isophorone		350	U	330	U	330	U	340	U	330	U	330	U
2-Nitrophenol		350	U	330	U	330	U	340	U	330	U	330	U
2,4-Dimethylphenol		350	U	330	U	330	U	340	U	330	U	330	U
Benzoic acid		1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
bis(2-Chloroethoxy)methane		350	U	330	U	330	U	340	U	330	U	330	U
2,4-Dichlorophenol		350	U	330	U	330	U	340	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	330	U	330	U	340	U	330	U	78	%
Naphthalene		350	U	330	U	330	U	340	U	330	U	330	U
4-Chloroaniline		350	U	330	U	330	U	340	U	330	U	330	U
Hexachlorobutadiene		350	U	330	U	330	U	340	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	330	U	330	U	340	U	330	U	84	%
2-Methylnaphthalene		350	U	330	U	330	U	340	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	330	U	330	U	340	U	330	U	330	U

*= Outside of EPA CLP QC limits.

BEST AVAILABLE COPY

RFW Batch Number: 9105L712 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Page: 1b

Cust ID:	BOOY88		BOOY89		BOOY91		BOOY93		SBLK		SBLK BS	
RFW#:	001		002		003		004		91LE0693-MB1		91LE0693-MB1	
2,4,6-Trichlorophenol	350	U	330	U	330	U	340	U	330	U	330	U
2,4,5-Trichlorophenol	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
2-Chloronaphthalene	350	U	330	U	330	U	340	U	330	U	330	U
2-Nitroaniline	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
Dimethylphthalate	350	U	330	U	330	U	340	U	330	U	330	U
Acenaphthylene	350	U	330	U	330	U	340	U	330	U	330	U
2,6-Dinitrotoluene	350	U	330	U	330	U	340	U	330	U	330	U
3-Nitroaniline	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
Acenaphthene	350	U	330	U	330	U	340	U	330	U	102	%
2,4-Dinitrophenol	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
4-Nitrophenol	1700	U	1700	U	1700	U	1700	U	1700	U	125 *	%
Dibenzofuran	350	U	330	U	330	U	340	U	330	U	330	U
2,4-Dinitrotoluene	350	U	330	U	330	U	340	U	330	U	102 *	%
Diethylphthalate	350	U	330	U	330	U	340	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	330	U	330	U	340	U	330	U	330	U
Fluorene	350	U	330	U	330	U	340	U	330	U	330	U
4-Nitroaniline	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
4,6-Dinitro-2-methylphenol	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
N-Nitrosodiphenylamine (1)	350	U	330	U	330	U	340	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	330	U	330	U	340	U	330	U	330	U
Hexachlorobenzene	350	U	330	U	330	U	340	U	330	U	330	U
Pentachlorophenol	1700	U	1700	U	1700	U	1700	U	1700	U	82	%
Phenanthrene	350	U	330	U	330	U	340	U	330	U	330	U
Anthracene	350	U	330	U	330	U	340	U	330	U	330	U
Di-n-Butylphthalate	2700	B	1100	B	1200	B	1000	B	640		810	B
Fluoranthene	350	U	330	U	330	U	340	U	330	U	330	U
Pyrene	350	U	330	U	330	U	340	U	330	U	92	%
Butylbenzylphthalate	350	U	330	U	330	U	340	U	330	U	330	U
3,3'-Dichlorobenzidine	700	U	660	U	660	U	670	U	670	U	670	U
Benzo(a)anthracene	350	U	330	U	330	U	340	U	330	U	330	U
Chrysene	350	U	330	U	330	U	340	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	350	U	330	U	330	U	340	U	330	U	330	U
Di-n-Octyl phthalate	350	U	330	U	330	U	340	U	330	U	330	U
Benzo(b)fluoranthene	350	U	330	U	330	U	340	U	330	U	330	U
Benzo(k)fluoranthene	350	U	330	U	330	U	340	U	330	U	330	U
Benzo(a)pyrene	350	U	330	U	330	U	340	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	350	U	330	U	330	U	340	U	330	U	330	U
Dibenzo(a,h)anthracene	350	U	330	U	330	U	340	U	330	U	330	U
Benzo(g,h,i)perylene	350	U	330	U	330	U	340	U	330	U	330	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

BEST AVAILABLE COPY

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE **SAMPLES RECEIVED:** 05-28-91
RFW #: 9105L712, SEMIVOLATILE
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of four (4) soil samples collected on 05-22-91.

The samples were extracted on 05-29-91 and analyzed according to criteria set forth in CLP SOW 02/88 (Rev. 05/89) for TCL Semivolatile target compounds on 06-03-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Non-target compounds were detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. Three (3) of eleven (11) blank spike recoveries were outside EPA QC limits.

4. Matrix spike and spike duplicate samples are associated with RFW lot 9106L749.

5. The laboratory blank contained the common contaminant di-n-butylphthalate at a level less than 2x the CRQL.

6. Internal standard area and retention time criteria were met for all samples and blanks.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

6.12.91
Date

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000017

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: L060306

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 5 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl alcohol	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	bis(2-Chloroisopropyl)ether	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000018

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: L060306

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 5 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
84-74-2	Di-n-Butylphthalate	2700	B
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	700	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-Octyl phthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000019

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-001

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: L060306

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 5 dec.

Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	22.63	200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

0000030

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-002

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L060308

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	bis(2-Chloroisopropyl)ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000031

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-002

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L060308

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	1100	B
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-Octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000032

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-002

Sample wt/vol: 30.8 (g/mL) G

Lab File ID: L060308

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000040

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-003

Sample wt/vol: 30.7 (g/mL) G

Lab File ID: L060309

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.9

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	bis(2-Chloroisopropyl)ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000041

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-003

Sample wt/vol: 30.7 (g/mL) G Lab File ID: L060309

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	1200	B
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-Octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000042

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-003

Sample wt/vol: 30.7 (g/mL) G Lab File ID: L060309

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.9 Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1B
SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000051

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-004

Sample wt/vol: 31.1 (g/mL) G Lab File ID: L060310

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 4 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl alcohol	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	bis(2-Chloroisopropyl)ether	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000052

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-004

Sample wt/vol: 31.1 (g/mL) G Lab File ID: L060310

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 4 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-Butylphthalate	1000	B
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	670	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	340	U
117-84-0	Di-n-Octyl phthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000053

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-004

Sample wt/vol: 31.1 (g/mL) G

Lab File ID: L060310

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 4 dec.

Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7

Dilution Factor: 1.00

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	6.68	1000	J
2.	ALKANE	6.92	2000	J
3.	ALKANE	7.25	3000	J
4.	ALKANE	7.35	2000	J
5.	ALKANE	7.58	2000	J
6.	ALKANE	8.32	600	J
7.	ALKANE	9.03	3000	J
8.	ALKANE	9.72	500	J
9.	ALKANE	10.60	2000	J
10.	ALKANE	11.27	400	J
11.	ALKANE	12.12	2000	J
12.	ALKANE	13.28	1000	J
13.	TRIBUTYLPHOSPHATE	15.77	30000	J

Roy F. Weston, Inc. - Lionville Laboratory

PCBs by GC

Report Date: 06/07/91 10:04

RFW Batch Number: 9105L712 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Page: 1

	Cust ID:	BOOY88	BOOY89	BOOY89	BOOY89	BOOY91	BOOY93
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.500	0.500	0.500	0.500	0.500	0.500
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate: Di-n-butylchlorendate		113 %	119 %	112 %	112 %	116 %	112 %
Aroclor-1016		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1221		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1232		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1242		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1248		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1254		84 U	80 U	96 %	100 %	78 U	80 U
Aroclor-1260		84 U	80 U	80 U	81 U	78 U	80 U

	Cust ID:	PBLK	PBLK BS
Sample Information	RFW#:	91LE0698-MB1	91LE0698-MB1
	Matrix:	SOIL	SOIL
	D.F.:	0.500	0.500
	Units:	ug/Kg	ug/Kg
Surrogate: Di-n-butylchlorendate		98 %	86 %
Aroclor-1016		40 U	40 U
Aroclor-1221		40 U	40 U
Aroclor-1232		40 U	40 U
Aroclor-1242		40 U	40 U
Aroclor-1248		40 U	40 U
Aroclor-1254		80 U	90 %
Aroclor-1260		80 U	80 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

5A

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 05-28-91
RFW #: 9105L712, PCB
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of four (4) soil samples collected on 05-22-91.

The samples were extracted on 05-30-91 and analyzed according to criteria set forth in the Contract Laboratory Program for PCB target compounds on 06-06-91.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. Linearity and breakdown criteria were met on the primary column.

2. Continuing calibration criteria were exceeded for beta-BHC and endrin on 06-07-91 at 08:27. This occurred in a standard analyzed after the sample extracts, so re-analysis was not required.

3. Retention time criteria were met for all compounds on the primary column.

4. All surrogate recoveries were within EPA QC limits.

5. All matrix spike recoveries were within EPA QC limits.

6. The blank spike recovery was within EPA QC limits.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

6.11.91
Date

1D

PESTICIDE ORGANICS ANALYSIS SHEET 0000013

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-001

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: 06069103.13

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 5 dec.

Date Extracted: 05/30/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	42	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	84	U
11096-82-5	Aroclor-1260	84	U

FORM 1 PEST 12/88 Rev.

6/4/91

1D
PESTICIDE ORGANICS ANALYSIS SHEET 0000016

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-002

Sample wt/vol: 30.6 (g/mL) G

Lab File ID: 06069103.14

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/30/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/91

GPC Cleanup: (Y/N) N pH: 5.7

Dilution Factor: 0.500

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

CAS NO.	COMPOUND		
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	40	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	80	U
11096-82-5	Aroclor-1260	80	U

6/7/91

FORM 1 PEST 12/88 Rev.

1D

PESTICIDE ORGANICS ANALYSIS SHEET 0000019

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-003

Sample wt/vol: 31.3 (g/mL) G

Lab File ID: 06069103.15

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/30/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/91

GPC Cleanup: (Y/N) N pH: 5.9

Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	78	U
11096-82-5	Aroclor-1260	78	U

6/7/91

FORM 1 PEST 12/88 Rev.

1D
PESTICIDE ORGANICS ANALYSIS SHEET 0000022

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-004

Sample wt/vol: 31.5 (g/mL) G

Lab File ID: 06069103.16

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 4 dec.

Date Extracted: 05/30/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/91

GPC Cleanup: (Y/N) N pH: 5.7

Dilution Factor: 0.500

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

CAS NO.	COMPOUND		
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	40	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	80	U
11096-82-5	Aroclor-1260	80	U

FORM 1 PEST 12/88 Rev.

001

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 05-28-91
RFW #: 9105L712
W.O. #: 6168-02-01

INORGANIC NARRATIVE

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

1. All sample holding times as required by 40CFR136 were met for water samples.

2. Preparation blanks were analyzed below the required detection limit with the exception of chloride.

3. Laboratory control standards (blank spikes) were within the control limits of 80-120% with the exception of sulfate.

4. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.

5. Matrix spike recoveries are summarized in the Inorganics Accuracy Report contained within this document. Recoveries for nitrate and sulfate were outside the 75-125% guidance limit. This may be due to an interference present in the sample matrix.

5. Replicate results are summarized on the Inorganic Precision report contained within this document. All results were within the 20% RPD guidance limit.

6. The analytical methods applied by the laboratory, unless otherwise requested, for all inorganic analyses are derived from the USEPA Method for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and Standard Methods for the Examination of Water and Wastewater 16 ed. Methods for the analysis of solid samples are derived from Test Methods for Evaluating Solid Waste (USEPA SW846).

Linda A. Slaybaugh 6.17.91
Jack R. Tuschall, Ph.D. Date
Laboratory Manager
Lionville Analytical Laboratory

JUN 1991 RECEIVED DATA RECEIPT

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JKB 8-30-94

008

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 06/17/91

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9105L712

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	BOOY88	% Solids	98.7		%	0.10
		Chloride by IC	24.9		mg/kg	1.4
		Fluoride by IC	2.7	u	mg/kg	2.7
		Nitrite by IC	1.4	u	mg/kg	1.4
		Nitrate by IC	89.4		mg/kg	1.4
		Phosphate by IC	1.4	u	mg/kg	1.4
		Sulfate by IC	5.2		mg/kg	1.4
-002	BOOY89	% Solids	97.2		%	0.10
		Chloride by IC	16.6		mg/kg	1.4
		Fluoride by IC	2.8	u	mg/kg	2.8
		Nitrite by IC	1.4	u	mg/kg	1.4
		Nitrate by IC	8.9		mg/kg	1.4
		Phosphate by IC	1.4	u	mg/kg	1.4
		Sulfate by IC	1.4	u	mg/kg	1.4
-003	BOOY91	% Solids	96.7		%	0.10
		Chloride by IC	17.3		mg/kg	1.3
		Fluoride by IC	2.5	u	mg/kg	2.5
		Nitrite by IC	1.3	u	mg/kg	1.3
		Nitrate by IC	6.8		mg/kg	1.3
		Phosphate by IC	1.3	u	mg/kg	1.3
		Sulfate by IC	1.3	u	mg/kg	1.3
-004	BOOY93	% Solids	96.7		%	0.10
		Chloride by IC	24.8		mg/kg	1.3
		Fluoride by IC	2.6	u	mg/kg	2.6
		Nitrite by IC	1.3	u	mg/kg	1.3
		Nitrate by IC	1.3	u	mg/kg	1.3
		Phosphate by IC	5.2		mg/kg	1.3
		Sulfate by IC	1.3	u	mg/kg	1.3

011

ROY F. WESTON INC.

INORGANICS PRECISION REPORT 06/17/91

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9105L712

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-001REP	BOOY88	Chloride by IC	24.9	23.7	4.9
		Fluoride by IC	2.7 u	2.7 u	NC
		Nitrite by IC	1.4 u	1.3 u	NC
		Nitrate by IC	89.4	89.4	0.034
		Phosphate by IC	1.4 u	1.3 u	NC
		Sulfate by IC	5.2	6.1	17.4

WESTON

Roy F. Weston, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:5/28/91**
RFW #:9105L712
W.O.#:6168-02-01

METALS NARRATIVE

The set of samples consisted of (4) soil samples collected on 5/22/91.

The samples were analyzed according to criteria set forth in CLP SOW 7/87.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.

2. All ICV and CCV values were within control limits.

3. All ICB and CCB values were within control limits.

4. All preparation blank values were within control limits.

5. All LCS results were within the 80-120% control limits.

   Note: The USEPA has dropped control limits for antimony and silver due to documented difficulties in obtaining reliable results. WESTON Analytics has adopted the same policy.

Linda A. Hayford

Jack R. Tuschall, Ph.D.
Laboratory Manager
WESTON Analytical Laboratories

6/11/91

Date

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY88

Lab Name:Roy F. Weston, Inc. Contract:6168-02-01

Lab Code:WESTON Case No:WEST SAS No.: SDG No.:CLP712

Matrix (soil/water):SOIL Lab Sample ID:9105712001

Level (low/med): LOW Date Received:05/28/91

% Solids: 98.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4480			P
7440-36-0	Antimony	2.92	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	88.1			P
7440-41-7	Beryllium	0.450	B		P
7440-43-9	Cadmium	0.616	U		P
7440-70-2	Calcium	5710			P
7440-47-3	Chromium	0.462	U		P
7440-48-4	Cobalt	12.3			P
7440-50-8	Copper	14.1			P
7439-89-6	Iron	20400			P
7439-92-1	Lead				
7439-95-4	Magnesium	4210			P
7439-96-5	Manganese	313			P
7439-97-6	Mercury				
7440-02-0	Nickel	9.10			P
7440-09-7	Potassium	804			P
7782-49-2	Selenium				
7440-22-4	Silver	0.616	U		P
7440-23-5	Sodium	201	B		P
7440-28-0	Thallium				
7440-62-2	Vanadium	29.8			P
7440-66-6	Zinc	33.9			P
	Cyanide				

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

0000009

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY89

Lab Name:Roy F. Weston, Inc. Contract:6168-02-01

Lab Code:WESTON Case No:WEST SAS No.: SDG No.:CLP712

Matrix (soil/water):SOIL Lab Sample ID:9105712002

Level (low/med): LOW Date Received:05/28/91

% Solids: 97.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2240			P
7440-36-0	Antimony	2.72	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	43.8			P
7440-41-7	Beryllium	0.240	B		P
7440-43-9	Cadmium	0.572	U		P
7440-70-2	Calcium	3860			P
7440-47-3	Chromium	0.429	U		P
7440-48-4	Cobalt	7.20			P
7440-50-8	Copper	9.50			P
7439-89-6	Iron	12000			P
7439-92-1	Lead				
7439-95-4	Magnesium	2280			P
7439-96-5	Manganese	170			P
7439-97-6	Mercury				
7440-02-0	Nickel	4.20	B		P
7440-09-7	Potassium	357	B		P
7782-49-2	Selenium				
7440-22-4	Silver	0.572	U		P
7440-23-5	Sodium	118	B		P
7440-28-0	Thallium				
7440-62-2	Vanadium	12.9			P
7440-66-6	Zinc	19.4			P
	Cyanide				

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY91

Lab Name:Roy F. Weston, Inc. Contract:6168-02-01

Lab Code:WESTON Case No:WEST SAS No.: SDG No.:CLP712

Matrix (soil/water):SOIL Lab Sample ID:9105712003

Level (low/med): LOW Date Received:05/28/91

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2130			P
7440-36-0	Antimony	2.69	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	43.1			P
7440-41-7	Beryllium	0.230	B		P
7440-43-9	Cadmium	0.566	U		P
7440-70-2	Calcium	4170			P
7440-47-3	Chromium	0.424	U		P
7440-48-4	Cobalt	6.60	B		P
7440-50-8	Copper	10.2			P
7439-89-6	Iron	11600			P
7439-92-1	Lead				
7439-95-4	Magnesium	2210			P
7439-96-5	Manganese	153			P
7439-97-6	Mercury				
7440-02-0	Nickel	3.70	B		P
7440-09-7	Potassium	312	B		P
7782-49-2	Selenium				
7440-22-4	Silver	0.566	U		P
7440-23-5	Sodium	131	B		P
7440-28-0	Thallium				
7440-62-2	Vanadium	11.2			P
7440-66-6	Zinc	19.0			P
	Cyanide				

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.

BOOY93

Lab Name:Roy F. Weston, Inc. Contract:6168-02-01

Lab Code:WESTON Case No:WEST SAS No.: SDG No.:CLP712

Matrix (soil/water):SOIL Lab Sample ID:9105712004

Level (low/med): LOW Date Received:05/28/91

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3110			P
7440-36-0	Antimony	2.83	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	58.1			P
7440-41-7	Beryllium	0.300	B		P
7440-43-9	Cadmium	0.596	U		P
7440-70-2	Calcium	4720			P
7440-47-3	Chromium	0.447	U		P
7440-48-4	Cobalt	9.80			P
7440-50-8	Copper	12.3			P
7439-89-6	Iron	16800			P
7439-92-1	Lead				
7439-95-4	Magnesium	3390			P
7439-96-5	Manganese	231			P
7439-97-6	Mercury				
7440-02-0	Nickel	6.90			P
7440-09-7	Potassium	400	B		P
7782-49-2	Selenium				
7440-22-4	Silver	0.596	U		P
7440-23-5	Sodium	149	B		P
7440-28-0	Thallium				
7440-62-2	Vanadium	24.4			P
7440-66-6	Zinc	27.5			P
	Cyanide				

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN

5

Roy F. Weston, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 5/28/91
RFW #: 9105L712
W.O. #: 6168-02-01

METALS NARRATIVE

The set of samples consisted of four (4) soil samples collected on 5/22/91.

The samples were analyzed according to criteria set forth in CLP SOW 3/90.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

1. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.

2. All ICV and CCV values were within control limits.

3. All ICB and CCB values were within control limits.

4. All preparation blank values were within control limits.

5. All LCS results were within the 80-120% control limits.

6. All matrix spike and duplicate analyses were performed on a different RFW# within the same digestion batch, as a result there are no corresponding Forms 5, 6 or 9. The associated forms have been reported with RFW lot 9105L510.

Jack R. Tuschall, Ph.D.
Laboratory Manager
Lionville Analytical Laboratories

10-15-91.
Date

pas\ clp-met.nar

7

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY88

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: 618-9 SAS No.: SDG No.: CLP712

Matrix (soil/water): SOIL Lab Sample ID: 910571201

Level (low/med): LOW Date Received: 5/28/91

% Solids: 98.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4480.00			P
7440-36-0	Antimony	2.92	U		P
7440-38-2	Arsenic				NR
7440-39-3	Barium	88.10			P
7440-41-7	Beryllium	.45	B		P
7440-43-9	Cadmium	.62	U		P
7440-70-2	Calcium	5710.00			P
7440-47-3	Chromium	.46	U		P
7440-48-4	Cobalt	12.30			P
7440-50-8	Copper	14.10			P
7439-89-6	Iron	20400.00			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	4210.00			P
7439-96-5	Manganese	313.00			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	9.10			P
7440-09-7	Potassium	804.00			P
7782-49-2	Selenium				NR
7440-22-4	Silver	.62	U		P
7440-23-5	Sodium	201.00	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	29.80			P
7440-66-6	Zinc	33.90			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

8

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY89

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: 618-9 SAS No.: SDG No.: CLP712

Matrix (soil/water): SOIL Lab Sample ID: 910571202

Level (low/med): LOW Date Received: 5/28/91

% Solids: 97.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2240.00			P
7440-36-0	Antimony	2.72	U		P
7440-38-2	Arsenic				NR
7440-39-3	Barium	43.80			P
7440-41-7	Beryllium	.24	B		P
7440-43-9	Cadmium	.57	U		P
7440-70-2	Calcium	3860.00			P
7440-47-3	Chromium	.43	U		P
7440-48-4	Cobalt	7.20			P
7440-50-8	Copper	9.50			P
7439-89-6	Iron	12000.00			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	2280.00			P
7439-96-5	Manganese	170.00			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	4.20	B		P
7440-09-7	Potassium	357.00	B		P
7782-49-2	Selenium				NR
7440-22-4	Silver	.57	U		P
7440-23-5	Sodium	118.00	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	12.90			P
7440-66-6	Zinc	19.40			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

9

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY91 -

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: 618-9 SAS No.: SDG No.: CLP712

Matrix (soil/water): SOIL Lab Sample ID: 910571203

Level (low/med): LOW Date Received: 5/28/91

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2130.00			P
7440-36-0	Antimony	2.69	U		P
7440-38-2	Arsenic				NR
7440-39-3	Barium	43.10			P
7440-41-7	Beryllium	.23	B		P
7440-43-9	Cadmium	.57	U		P
7440-70-2	Calcium	4170.00			P
7440-47-3	Chromium	.42	U		P
7440-48-4	Cobalt	6.60	B		P
7440-50-8	Copper	10.20			P
7439-89-6	Iron	11600.00			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	2210.00			P
7439-96-5	Manganese	153.00			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	3.70	B		P
7440-09-7	Potassium	312.00	B		P
7782-49-2	Selenium				NR
7440-22-4	Silver	.57	U		P
7440-23-5	Sodium	131.00	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	11.20			P
7440-66-6	Zinc	19.00			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY93 -

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

Lab Code: WESTON Case No.: 618-9 SAS No.: SDG No.: CLP712

Matrix (soil/water): SOIL Lab Sample ID: 910571204

Level (low/med): LOW Date Received: 5/28/91

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3110.00			P
7440-36-0	Antimony	2.83	U		P
7440-38-2	Arsenic				NR
7440-39-3	Barium	58.10			P
7440-41-7	Beryllium	.30	B		P
7440-43-9	Cadmium	.60	U		P
7440-70-2	Calcium	4720.00			P
7440-47-3	Chromium	.45	U		P
7440-48-4	Cobalt	9.80			P
7440-50-8	Copper	12.30			P
7439-89-6	Iron	16800.00			P
7439-92-1	Lead				NR
7439-95-4	Magnesium	3390.00			P
7439-96-5	Manganese	231.00			P
7439-97-6	Mercury				NR
7440-02-0	Nickel	6.90			P
7440-09-7	Potassium	400.00	B		P
7782-49-2	Selenium				NR
7440-22-4	Silver	.60	U		P
7440-23-5	Sodium	149.00	B		P
7440-28-0	Thallium				NR
7440-62-2	Vanadium	24.40			P
7440-66-6	Zinc	27.50			P
	Cyanide				NR

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

91 05L 712-WES-081

Westinghouse
Hanford Company

OSM RCRA LEVEL C DATA ASSESSMENT

DATE 7-1-91

REVIEWED BY C.J. Sumpolo

LABORATORY Roy F. Weston

CASE #

SDG # 9105L712

SAMPLES/MATRIX B00Y88-Soil

B00Y89

B00Y91

B00Y93

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	IC	N/A	N/A
1. Requested vs Reported		O		
2. Holding Time		O		
3. Matrix Spike		X		
4. Duplicate		O		
5. Analytical Blank		O		
6. Calibration		M		
7. LCS		X		
8.				
9.				
10.				

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT: All QC analysis points to data being technically sound, but be aware that no calibration data was provided with data package.

NOTES:

o Refer to the corresponding attachments for explanation of any problems.

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 06/17/91

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9105L712

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	BOOY88	% Solids	98.7		%	0.10
		Chloride by IC	24.9		mg/kg	1.4
		Fluoride by IC	2.7	u	mg/kg	2.7
		Nitrite by IC	1.4	u	mg/kg	1.4
		Nitrate by IC	89.4	J	mg/kg	1.4
		Phosphate by IC	1.4	u	mg/kg	1.4
		Sulfate by IC	5.2	J	mg/kg	1.4
-002	BOOY89	% Solids	97.2		%	0.10
		Chloride by IC	16.6		mg/kg	1.4
		Fluoride by IC	2.8	u	mg/kg	2.8
		Nitrite by IC	1.4	u	mg/kg	1.4
		Nitrate by IC	8.9	J	mg/kg	1.4
		Phosphate by IC	1.4	u	mg/kg	1.4
		Sulfate by IC	1.4	uJ	mg/kg	1.4
-003	BOOY91	% Solids	96.7		%	0.10
		Chloride by IC	17.3		mg/kg	1.3
		Fluoride by IC	2.5	u	mg/kg	2.5
		Nitrite by IC	1.3	u	mg/kg	1.3
		Nitrate by IC	6.8	J	mg/kg	1.3
		Phosphate by IC	1.3	u	mg/kg	1.3
		Sulfate by IC	1.3	uJ	mg/kg	1.3
-004	BOOY93	% Solids	96.7		%	0.10
		Chloride by IC	24.8		mg/kg	1.3
		Fluoride by IC	2.6	u	mg/kg	2.6
		Nitrite by IC	1.3	u	mg/kg	1.3
		Nitrate by IC	1.3	uJ	mg/kg	1.3
		Phosphate by IC	5.2		mg/kg	1.3
		Sulfate by IC	1.3	uJ	mg/kg	1.3

ROY F. WESTON INC.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/17/91

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9105L712

WORK ORDER: 6168-02-01-0000

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK1	91LIC89-MB1	Chloride by IC	2.2		mg/kg	1.2
		Fluoride by IC	2.5	u	mg/kg	2.5
		Nitrite by IC	1.2	u	mg/kg	1.2
		Nitrate by IC	1.2	u	mg/kg	1.2
		Phosphate by IC	1.2	u	mg/kg	1.2
		Sulfate by IC	1.2	u	mg/kg	1.2

ROY F. WESTON INC.

INORGANICS ACCURACY REPORT 06/17/91

CLIENT: WESTINGHOUSE HANFORD
WORK ORDER: 6168-02-01-0000

WESTON BATCH #: 9105L712

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-001	BOOY88	Chloride by IC	71.6	24.9	53.6	87.2
		Fluoride by IC	165	2.7 u	189	87.3
		Nitrite by IC	45.0	1.4 u	53.6	84.0
		Nitrate by IC	126	89.4	53.6	69.0
		Phosphate by IC	44.2	1.4 u	53.6	82.5
		Sulfate by IC	45.0	5.2	53.6	74.2
BLANK1	91LIC89-MB1	Chloride by IC	61.2	2.2	50.0	118
		Fluoride by IC	163	2.5 u	176	92.2
		Nitrite by IC	42.7	1.2 u	50.0	85.3
		Nitrate by IC	40.6	1.2 u	50.0	81.2
		Phosphate by IC	46.4	1.2 u	50.0	92.9
		Sulfate by IC	25.3	1.2 u	50.0	50.6

ROY F. WESTON INC.

INORGANICS PRECISION REPORT 06/17/91

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9105L712

WORK ORDER: 6168-02-01-0000

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-001REP	BOOY88	Chloride by IC	24.9	23.7	4.9
		Fluoride by IC	2.7 u	2.7 u	NC
		Nitrite by IC	1.4 u	1.3 u	NC
		Nitrate by IC	89.4	89.4	0.034
		Phosphate by IC	1.4 u	1.3 u	NC
		Sulfate by IC	5.2	6.1	17.4

RCRA LEVEL C QC

Name C.J. Simiele Date 7-1-91

QC Check: Requested vs. Reported Analysis

COMMENTS: Orion analysis requested and performed

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 7-1-91

QC Check: Holding Time

COMMENTS: Samples were analyzed 14 days after being sampled.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 7-1-91

QC Check: Matrix Spike

COMMENTS: Matrix spike % recoveries are out of ± 25% Control limits for NO3 (169%) and SO4 (~~50.1%~~ 74.0%) 7-1-91

ACTION: Qualify all associated samples as per OSM guidelines.

sample #	constituent	value/qual
B00Y88	NO3	89.4 J
↓	SO4	5.2 J
B00Y89	NO3	8.9 J
↓	SO4	1.4 UJ
B00Y91	NO3	26.8 J
↓	SO4	1.3 UJ
B00Y93	NO3	1.3 UJ
↓	SO4	1.3 UJ

sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 7-1-91

QC Check: Duplicate

COMMENTS: All duplicate results RPD's are within ±20% control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 7-1-91

QC Check: Analytical Blanks

COMMENTS: Potential contaminants detected in preparation blank for Cl (2.2mg/kg), above IDL.

ACTION: Note all sample results for Cl are greater than 5x the contaminants detected in the preparation blank.

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C.J. Simiele Date 7-1-91

QC Check: Calibration

COMMENTS: Summary notes that all initial and continuing calibration results are in required control limits, but no calibration data is provided with data package.

ACTION: No data will be qualified, but user should be aware that no calibration data was provided

sample #	constituent	value/qual	sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 7-1-91

QC Check: Laboratory Control Samples (LCS)

COMMENTS: LCS % recoveries are with in ±20% control limits with the exception of SO4 (50.6%).

ACTION: Qualify all associated samples as per OSM guidelines.

sample #	constituent	value/qual
B00Y88	SO4	5.2 J
B00Y89	SO4	1.4 UJ
B00Y91	SO4	1.3 UJ
B00Y93	SO4	1.3 UJ

sample #	constituent	value/qual

___ of ___

RCRA LEVEL C QC

Name C. J. Simiele Date 7-1-91

QC Check: Laboratory Control Samples (LCS)

COMMENTS: All anion % recoveries are with in ± 20% control limits with the exception of SO4 (50.10%)

ACTION: Qualify all associated samples as per OSM guidelines.

sample #	constituent	value/qual
B00YB8	SO4	25.3 J
B00YC0	SO4	94.7 J
B00YC1	SO4	1.3 UJ
B00YC2	SO4	1.3 UJ
B00YC4	SO4	1.7 J
B00YC5	SO4	1.3 UJ

sample #	constituent	value/qual

___ of ___

Westinghouse
Hanford Company

OSM INORGANIC DATA ASSESSMENT

DATE 7-1-91

REVIEWED BY C.J. Simiele

LABORATORY Roy F Weston

CASE #

SDG # 9105L712

SAMPLES/MATRIX B00Y88-SOIL
B00Y89
B00Y91
B00Y93

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CN
1. Calibrations (Form II)	X			
2. Blanks (III)	X			
3. ICS (IV)	X			
4. Matrix Spike (V)	O			
5. Duplicate Analysis (VI)	M			
6. LCS (VII)	O			
7. Serial Dilution (IX)	M			
8. GFAA				
9. Holding Times (XIV)	O			
10. Other QC	N/A			

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSSMENT: poor - significant amount of QC paperwork missing from data package (ie: duplicate analysis, serial dilution, 1 ICS run)

NOTES: Data should be used for information only, due to missing QC results.

o Refer to the corresponding attachments for explanation of any problems.

54 7900 046

0000008

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY88

Lab Name:Roy F. Weston, Inc. Contract:6168-02-01

Lab Code:WESTON Case No:WEST SAS No.: SDG No.:CLP712

Matrix (soil/water):SOIL Lab Sample ID:9105712001

Level (low/med): LOW Date Received:05/28/91

% Solids: 98.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4480			P
7440-36-0	Antimony	2.92	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	88.1			P
7440-41-7	Beryllium	0.450	B		P
7440-43-9	Cadmium	0.616	U		P
7440-70-2	Calcium	5710			P
7440-47-3	Chromium	0.462	U		P
7440-48-4	Cobalt	12.3			P
7440-50-8	Copper	14.1			P
7439-89-6	Iron	20400			P
7439-92-1	Lead				
7439-95-4	Magnesium	4210			P
7439-96-5	Manganese	313		J	P
7439-97-6	Mercury				
7440-02-0	Nickel	9.10			P
7440-09-7	Potassium	804			P
7782-49-2	Selenium				
7440-22-4	Silver	0.616	U		P
7440-23-5	Sodium	201	B	u	P
7440-28-0	Thallium				
7440-62-2	Vanadium	29.8			P
7440-66-6	Zinc	33.9			P
	Cyanide				

7-1-91
CS Simpson

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN

0000009

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY89

Lab Name:Roy F. Weston, Inc. Contract:6168-02-01

Lab Code:WESTON Case No:WEST SAS No.: SDG No.:CLP712

Matrix (soil/water):SOIL Lab Sample ID:9105712002

Level (low/med): LOW Date Received:05/28/91

% Solids: 97.2

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2240			P
7440-36-0	Antimony	2.72	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	43.8			P
7440-41-7	Beryllium	0.240	B		P
7440-43-9	Cadmium	0.572	U		P
7440-70-2	Calcium	3860			P
7440-47-3	Chromium	0.429	U		P
7440-48-4	Cobalt	7.20			P
7440-50-8	Copper	9.50			P
7439-89-6	Iron	12000			P
7439-92-1	Lead				
7439-95-4	Magnesium	2280			P
7439-96-5	Manganese	170		J	P
7439-97-6	Mercury				
7440-02-0	Nickel	4.20	B		P
7440-09-7	Potassium	357	B		P
7782-49-2	Selenium				
7440-22-4	Silver	0.572	U		P
7440-23-5	Sodium	118	B	U	P
7440-28-0	Thallium				
7440-62-2	Vanadium	12.9			P
7440-66-6	Zinc	19.4			P
	Cyanide				

7-1-91 LS Surrogate

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN

0000010

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B00Y91

Lab Name:Roy F. Weston, Inc. Contract:6168-02-01

Lab Code:WESTON Case No:WEST SAS No.: SDG No.:CLP712

Matrix (soil/water):SOIL Lab Sample ID:9105712003

Level (low/med): LOW Date Received:05/28/91

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2130			P
7440-36-0	Antimony	2.69	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	43.1			P
7440-41-7	Beryllium	0.230	B		P
7440-43-9	Cadmium	0.566	U		P
7440-70-2	Calcium	4170			P
7440-47-3	Chromium	0.424	U		P
7440-48-4	Cobalt	6.60	B		P
7440-50-8	Copper	10.2			P
7439-89-6	Iron	11600			P
7439-92-1	Lead				
7439-95-4	Magnesium	2210			P
7439-96-5	Manganese	153		J	P
7439-97-6	Mercury				
7440-02-0	Nickel	3.70	B		P
7440-09-7	Potassium	312	B		P
7782-49-2	Selenium				
7440-22-4	Silver	0.566	U		P
7440-23-5	Sodium	131	B	U	P
7440-28-0	Thallium				
7440-62-2	Vanadium	11.2			P
7440-66-6	Zinc	19.0			P
	Cyanide				

7-1-91 CS Surgeli

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN

0000011

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

BOOY93

Lab Name:Roy F. Weston, Inc. Contract:6168-02-01

Lab Code:WESTON Case No:WEST SAS No.: SDG No.:CLP712

Matrix (soil/water):SOIL Lab Sample ID:9105712004

Level (low/med): LOW Date Received:05/28/91

% Solids: 96.7

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3110			P
7440-36-0	Antimony	2.83	U		P
7440-38-2	Arsenic				
7440-39-3	Barium	58.1			P
7440-41-7	Beryllium	0.300	B		P
7440-43-9	Cadmium	0.596	U		P
7440-70-2	Calcium	4720			P
7440-47-3	Chromium	0.447	U		P
7440-48-4	Cobalt	9.80			P
7440-50-8	Copper	12.3			P
7439-89-6	Iron	16800			P
7439-92-1	Lead				
7439-95-4	Magnesium	3390			P
7439-96-5	Manganese	231		J	P
7439-97-6	Mercury				
7440-02-0	Nickel	6.90			P
7440-09-7	Potassium	400	B		P
7782-49-2	Selenium				
7440-22-4	Silver	0.596	U		P
7440-23-5	Sodium	149	B	U	P
7440-28-0	Thallium				
7440-62-2	Vanadium	24.4			P
7440-66-6	Zinc	27.5			P
	Cyanide				

7-1-91
[illegible]

Color Before:BROWN Clarity Before: Texture:FINE

Color After: BROWN Clarity After: Artifacts:

Comments:

FORM I - IN

INORGANIC QC - Calibrations

Name C.J. Simiele Date 7-1-91

COMMENTS: All initial & continuing calibration results are within required control limits. Instrument run log was not provided with data package

ACTION: None-note. without ~~analysis~~ instrument run log sequence of analysis run can not be determined.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Blanks

Name C.J. Simiele Date 7-1-91

COMMENTS: Contaminants detected in blank for Na (117.4) above IDL

ACTION: Qualify associated samples as per OSM guidelines.

sample #	constituent	value/qual
B00Y88	Na	201 u
B00Y89	Na	118 u
B00Y91	Na	131 u
B00Y93	Na	149 u

sample #	constituent	value/qual

INORGANIC QC - ICS

Name C.J. Simiele Date 7-1-91

COMMENTS: Only one ICS was provided, at least two ICS should be provided to bracket data. All ICS % recoveries are within required control limits. False positive may exist for Mn (IDL = 20 ppm, conc. in @ ICS = 30 & 31 ppm).

ACTION: Qualify (false positive) associated samples as per OSM guidelines.

sample #	constituent	value/qual
B00Y88	Mn	313 J
B00Y89	Mn	170 J
B00Y91	Mn	153 J
B00Y93	Mn	231 J

sample #	constituent	value/qual

INORGANIC QC - Matrix Spike

Name C.J. Simuela Date 7-1-91

COMMENTS: Blank spike run for matrix spikes, all % recoveries are with in ±25% control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Duplicate Analysis

Name C.J. Simiele Date 7-1-91

COMMENTS: No duplicate analysis results provided with data package.

ACTION: None - note missing duplicate QC analysis.

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - LCS

Name C.J. Simiele Date 7-1-91

COMMENTS: All LCS results are with in required control limits

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Serial Dilution

Name C.J. Simiele Date 7-1-91

COMMENTS: No ICP serial dilution data provided with data package.

ACTION: None - note missing serial dilution analysis

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - Holding Times

Name C. J. Simiele Date 7-1-91

COMMENTS: ICP holding time = 6 months, analysis was performed 19 days after sampling

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - GFAA

Name C.J. Simiele Date 7-1-91

COMMENTS: None

ACTION: N/A

sample #	constituent	value/qual	sample #	constituent	value/qual

INORGANIC QC - other

Name C.J. Simiele Date 7-1-91

COMMENTS: None

ACTION: N/A

sample #	constituent	value/qual	sample #	constituent	value/qual

Westinghouse
Hanford Company

OSM ORGANIC DATA ASSESSMENT

DATE 7-1-91

REVIEWED BY C.J. Simiele Compile Surquile

LABORATORY B04 F. Weston

CASE #

SDG # 91054712

SAMPLES/MATRIX B00Y88 / B00Y89 / B00Y90 / B00Y93 / /

DATA ASSESSMENT SUMMARY

	VOA	ABN	~~PEST~~ PCB
1. Holding Times (Form I)	O	O	O
2. Surrogate Recovery (II)	O	O	O
3. Matrix Spike/ MSD (III)	O	O	O
4. Blanks (IV)	X	X	O
5. GC/MS Tune (V)	O	O	
6. Calibration (VI-VII; VIII pest)	X	O	X
7. Internal Standards (VIII)	O	O	
8. Instr. Perform. (IX pest)			O
9. Other ( )	N/A	N/A	N/A

O = data had no problems
X = data qualified due to minor problems
M = data qualified due to major problems, some data may be unusable

OVERALL ASSESSMENT: Good- minor problems exist with the QC data

NOTES :

Refer to the corresponding attachments for explanation of any problems.

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9105L712 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 06/03/91 15:31 Page: 1a

	Cust ID:	BOOY88		BOOY89		BOOY91		BOOY91		BOOY91		BOOY93	
Sample Information	RFW#:	001		002		003		003 MS		003 MSD		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		0.980		1.00		1.25	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
	Level:	LOW		LOW		LOW		LOW		LOW		MED	
Surrogate Recovery	Toluene-d8	98	%	93	%	94	%	92	%	97	%	102	%
	Bromofluorobenzene	93	%	93	%	92	%	89	%	95	%	100	%
	1,2-Dichloroethane-d4	75	%	70	%	71	%	70	%	73	%	93	%
			fl		fl		fl		fl		fl		fl
Chloromethane		10	U	10	U	10	U	10	U	10	U	1300	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	1300	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	1300	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	1300	U
Methylene Chloride		27	B	20	B u	24	B	25	B	25	B	1100	u
Acetone		27	B u	24	B u	17	B u	36	B	34	B u	1300	U
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	650	U
1,1-Dichloroethene		5	U	5	U	5	U	99	%	101	%	650	U
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U	650	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U	5	U	650	U
Chloroform		5	U	5	U	5	U	5	U	5	U	650	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	650	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	1300	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U	650	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	650	U
Vinyl Acetate		10	U	10	U	10	U	10	U	10	U	1300	U
Bromodichloromethane		5	U	5	U	5	U	5	U	5	U	650	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U	650	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	650	U
Trichloroethene		5	U	5	U	5	U	106	%	116	%	650	U
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U	650	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	650	U
Benzene		5	U	5	U	5	U	91	%	97	%	650	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	650	U
Bromoform		5	U	5	U	5	U	5	U	5	U	650	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	1300	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	1300	U
Tetrachloroethene		5	U	5	U	5	U	5	U	5	U	650	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U	5	U	650	U

*= Outside of EPA CLP QC limits.

7-1-91

Cust ID:	BOOY88	BOOY89	BOOY91	BOOY91	BOOY91	BOOY93
RFW#:	001	002	003	003 MS	003 MSD	004
Level:	LOW	LOW	LOW	LOW	LOW	MED
Toluene	1 J	5 U	5 U	94 %	101 %	650 U
Chlorobenzene	5 U	5 U	5 U	104 %	109 %	650 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	650 U
Styrene	5 U	5 U	5 U	5 U	5 U	650 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	650 U

*= Outside of EPA CLP QC limits.

000005

Roy F. Weston, Inc. - Lionville Laboratory
Volatiles by GC/MS, HSL List

RFW Batch Number: 9105L712 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 06/03/91 15:31 Page: 2a

	Cust ID:	VBLK	VBLK
Sample Information	RFW#:	91LVY108-MB1	91LVX093-MB1
	Matrix:	SOIL	SOIL
	D.F.:	1.00	1.25
	Units:	ug/Kg	ug/Kg
	Level:	LOW	MED

	Toluene-d8	97	%	102	%
Surrogate	Bromofluorobenzene	94	%	97	%
Recovery	1,2-Dichloroethane-d4	73	%	98	%

Chloromethane	10	U	1200	U
Bromomethane	10	U	1200	U
Vinyl Chloride	10	U	1200	U
Chloroethane	10	U	1200	U
Methylene Chloride	2	J	1400	
Acetone	5	J	380	J
Carbon Disulfide	5	U	620	U
1,1-Dichloroethene	5	U	620	U
1,1-Dichloroethane	5	U	620	U
1,2-Dichloroethene (total)	5	U	620	U
Chloroform	5	U	620	U
1,2-Dichloroethane	5	U	620	U
2-Butanone	10	U	1200	U
1,1,1-Trichloroethane	5	U	620	U
Carbon Tetrachloride	5	U	620	U
Vinyl Acetate	10	U	1200	U
Bromodichloromethane	5	U	620	U
1,2-Dichloropropane	5	U	620	U
cis-1,3-Dichloropropene	5	U	620	U
Trichloroethene	5	U	620	U
Dibromochloromethane	5	U	620	U
1,1,2-Trichloroethane	5	U	620	U
Benzene	5	U	620	U
Trans-1,3-Dichloropropene	5	U	620	U
Bromoform	5	U	620	U
4-Methyl-2-pentanone	10	U	1200	U
2-Hexanone	10	U	1200	U
Tetrachloroethene	5	U	620	U
1,1,2,2-Tetrachloroethane	5	U	620	U

*= Outside of EPA CLP QC limits.

Cust ID:	VBLK		VBLK	
RFW#:	91LVY108-MB1		91LVX093-MB1	
Level:	LOW		MED	
Toluene	5	U	620	U
Chlorobenzene	5	U	620	U
Ethylbenzene	5	U	620	U
Styrene	5	U	620	U
Xylene (total)	5	U	620	U

*= Outside of EPA CLP QC limits.

0000007

1A
VOLATILE ORGANICS ANALYSIS SHEET 0000021

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-001

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053007

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 1

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

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

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000022

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-001

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053007

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 1

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A
VOLATILE ORGANICS ANALYSIS SHEET

0000032

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-002

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053008

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	20	B U
67-64-1	Acetone	24	B U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

7-1-91
CJSurgick

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS 0000033

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-002

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053008

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A

VOLATILE ORGANICS ANALYSIS SHEET 0000041

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-003

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053009

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	24	B
67-64-1	Acetone	17	B
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS 0000042

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-003

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: Y053009

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1A
VOLATILE ORGANICS ANALYSIS SHEET

0000050

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-004

Sample wt/vol: 4.00 (g/mL) G

Lab File ID: AX5U11

Level: (low/med) MED

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) CAP

Dilution Factor: 1.25

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

CAS NO.	COMPOUND		
74-87-3	Chloromethane	1300	U
74-83-9	Bromomethane	1300	U
75-01-4	Vinyl Chloride	1300	U
75-00-3	Chloroethane	1300	U
75-09-2	Methylene Chloride	1100	U
67-64-1	Acetone	1300	U
75-15-0	Carbon Disulfide	650	U
75-35-4	1,1-Dichloroethene	650	U
75-34-3	1,1-Dichloroethane	650	U
540-59-0	1,2-Dichloroethene (total)	650	U
67-66-3	Chloroform	650	U
107-06-2	1,2-Dichloroethane	650	U
78-93-3	2-Butanone	1300	U
71-55-6	1,1,1-Trichloroethane	650	U
56-23-5	Carbon Tetrachloride	650	U
108-05-4	Vinyl Acetate	1300	U
75-27-4	Bromodichloromethane	650	U
78-87-5	1,2-Dichloropropane	650	U
10061-01-5	cis-1,3-Dichloropropene	650	U
79-01-6	Trichloroethene	650	U
124-48-1	Dibromochloromethane	650	U
79-00-5	1,1,2-Trichloroethane	650	U
71-43-2	Benzene	650	U
10061-02-6	Trans-1,3-Dichloropropene	650	U
75-25-2	Bromoform	650	U
108-10-1	4-Methyl-2-pentanone	1300	U
591-78-6	2-Hexanone	1300	U
127-18-4	Tetrachloroethene	650	U
79-34-5	1,1,2,2-Tetrachloroethane	650	U
108-88-3	Toluene	650	U
108-90-7	Chlorobenzene	650	U
100-41-4	Ethylbenzene	650	U
100-42-5	Styrene	650	U
1330-20-7	Xylene (total)	650	U

7-1-91
LS Surgeels

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS 0000051

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-004

Sample wt/vol: 4.00 (g/mL) G

Lab File ID: AX5U11

Level: (low/med) MED

Date Received: 05/28/91

% Moisture: not dec. 3

Date Analyzed: 05/30/91

Column: (pack/cap) CAP

Dilution Factor: 1.25

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	22.57	2000	J
2.	ALKANE	22.98	4000	J
3.	ALKANE	23.63	6000	J
4.	ALKANE	23.90	3000	J
5.	ALKANE	24.33	3000	J
6.	UNKNOWN	24.72	900	J

Roy F. Weston, Inc. - Lionville Laboratory
Semivolatiles by GC/MS, HSL List

Report Date: 06/04/91 23:11

RFW Batch Number: 9105L712 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Page: 1a

	Cust ID:	BOOY88		BOOY89		BOOY91		BOOY93		SBLK		SBLK BS	
Sample Information	RFW#:	001		002		003		004		91LE0693-MB1		91LE0693-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	74	%	67	%	70	%	60	%	88	%	85	%
	2-Fluorobiphenyl	80	%	78	%	81	%	77	%	96	%	96	%
	p-Terphenyl-d14	78	%	74	%	79	%	89	%	106	%	100	%
	Phenol-d5	103	%	94	%	94	%	93	%	111	%	105	%
	2-Fluorophenol	107	%	101	%	103	%	98	%	103	%	110	%
	2,4,6-Tribromophenol	61	%	55	%	55	%	110	%	58	%	71	%
			fl		fl		fl		fl		fl		fl
Phenol		350	U	330	U	330	U	340	U	330	U	111 *	%
bis(2-Chloroethyl)ether		350	U	330	U	330	U	340	U	330	U	330	U
2-Chlorophenol		350	U	330	U	330	U	340	U	330	U	89	%
1,3-Dichlorobenzene		350	U	330	U	330	U	340	U	330	U	330	U
1,4-Dichlorobenzene		350	U	330	U	330	U	340	U	330	U	80	%
Benzyl alcohol		350	U	330	U	330	U	340	U	330	U	330	U
1,2-Dichlorobenzene		350	U	330	U	330	U	340	U	330	U	330	U
2-Methylphenol		350	U	330	U	330	U	340	U	330	U	330	U
bis(2-Chloroisopropyl)ether		350	U	330	U	330	U	340	U	330	U	330	U
4-Methylphenol		350	U	330	U	330	U	340	U	330	U	330	U
N-Nitroso-Di-n-propylamine		350	U	330	U	330	U	340	U	330	U	65	%
Hexachloroethane		350	U	330	U	330	U	340	U	330	U	330	U
Nitrobenzene		350	U	330	U	330	U	340	U	330	U	330	U
Isophorone		350	U	330	U	330	U	340	U	330	U	330	U
2-Nitrophenol		350	U	330	U	330	U	340	U	330	U	330	U
2,4-Dimethylphenol		350	U	330	U	330	U	340	U	330	U	330	U
Benzoic acid		1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
bis(2-Chloroethoxy)methane		350	U	330	U	330	U	340	U	330	U	330	U
2,4-Dichlorophenol		350	U	330	U	330	U	340	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	330	U	330	U	340	U	330	U	78	%
Naphthalene		350	U	330	U	330	U	340	U	330	U	330	U
4-Chloroaniline		350	U	330	U	330	U	340	U	330	U	330	U
Hexachlorobutadiene		350	U	330	U	330	U	340	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	330	U	330	U	340	U	330	U	84	%
2-Methylnaphthalene		350	U	330	U	330	U	340	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	330	U	330	U	340	U	330	U	330	U

*= Outside of EPA CLP QC limits.

000047

Cust ID:	BOOY88		BOOY89		BOOY91		BOOY93		SBLK		SBLK BS	
RFW#:	001		002		003		004		91LE0693-MB1		91LE0693-MB1	
2,4,6-Trichlorophenol	350	U	330	U	330	U	340	U	330	U	330	U
2,4,5-Trichlorophenol	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
2-Chloronaphthalene	350	U	330	U	330	U	340	U	330	U	330	U
2-Nitroaniline	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
Dimethylphthalate	350	U	330	U	330	U	340	U	330	U	330	U
Acenaphthylene	350	U	330	U	330	U	340	U	330	U	330	U
2,6-Dinitrotoluene	350	U	330	U	330	U	340	U	330	U	330	U
3-Nitroaniline	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
Acenaphthene	350	U	330	U	330	U	340	U	330	U	102	%
2,4-Dinitrophenol	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
4-Nitrophenol	1700	U	1700	U	1700	U	1700	U	1700	U	125 *	%
Dibenzofuran	350	U	330	U	330	U	340	U	330	U	330	U
2,4-Dinitrotoluene	350	U	330	U	330	U	340	U	330	U	102 *	%
Diethylphthalate	350	U	330	U	330	U	340	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	330	U	330	U	340	U	330	U	330	U
Fluorene	350	U	330	U	330	U	340	U	330	U	330	U
4-Nitroaniline	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
4,6-Dinitro-2-methylphenol	1700	U	1700	U	1700	U	1700	U	1700	U	1700	U
N-Nitrosodiphenylamine (1)	350	U	330	U	330	U	340	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	330	U	330	U	340	U	330	U	330	U
Hexachlorobenzene	350	U	330	U	330	U	340	U	330	U	330	U
Pentachlorophenol	1700	U	1700	U	1700	U	1700	U	1700	U	82	%
Phenanthrene	350	U	330	U	330	U	340	U	330	U	330	U
Anthracene	350	U	330	U	330	U	340	U	330	U	330	U
Di-n-Butylphthalate	2700	B U	1100	B U	1200	B U	1000	B U	640		810	B
Fluoranthene	350	U	330	U	330	U	340	U	330	U	330	U
Pyrene	350	U	330	U	330	U	340	U	330	U	92	%
Butylbenzylphthalate	350	U	330	U	330	U	340	U	330	U	330	U
3,3'-Dichlorobenzidine	700	U	660	U	660	U	670	U	670	U	670	U
Benzo(a)anthracene	350	U	330	U	330	U	340	U	330	U	330	U
Chrysene	350	U	330	U	330	U	340	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	350	U	330	U	330	U	340	U	330	U	330	U
Di-n-Octyl phthalate	350	U	330	U	330	U	340	U	330	U	330	U
Benzo(b)fluoranthene	350	U	330	U	330	U	340	U	330	U	330	U
Benzo(k)fluoranthene	350	U	330	U	330	U	340	U	330	U	330	U
Benzo(a)pyrene	350	U	330	U	330	U	340	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	350	U	330	U	330	U	340	U	330	U	330	U
Dibenzo(a,h)anthracene	350	U	330	U	330	U	340	U	330	U	330	U
Benzo(g,h,i)perylene	350	U	330	U	330	U	340	U	330	U	330	U

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

7-1-91
CS Surgeley

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000017

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: L060306

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 5 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl alcohol	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	bis(2-Chloroisopropyl)ether	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000018

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: L060306

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 5 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
84-74-2	Di-n-Butylphthalate	2700	B U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	700	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-Octyl phthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

7-1-91 CdSmith

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000019

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-001

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: L060306

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 5 dec.

Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	22.63	200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000030

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-002

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L060308

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	bis(2-Chloroisopropyl)ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000031

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-002

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L060308

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	1100	B U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-Octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

7-1-91
Ls Surgeels

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000032

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-002

Sample wt/vol: 30.8 (g/mL) G

Lab File ID: L060308

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7

Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000040

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-003

Sample wt/vol: 30.7 (g/mL) G Lab File ID: L060309

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.9 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
100-51-6	Benzyl alcohol	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	bis(2-Chloroisopropyl)ether	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-Di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000041

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-003

Sample wt/vol: 30.7 (g/mL) G Lab File ID: L060309

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.9 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	1200	B U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	660	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-Octyl phthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

7-1-91 CS Surrogate

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000042

TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-003

Sample wt/vol: 30.7 (g/mL) G Lab File ID: L060309

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.9 Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000051

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-004

Sample wt/vol: 31.1 (g/mL) G Lab File ID: L060310

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 4 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
100-51-6	Benzyl alcohol	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	bis(2-Chloroisopropyl)ether	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-Di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
65-85-0	Benzoic acid	1700	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U

1C
SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000052

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-004

Sample wt/vol: 31.1 (g/mL) G Lab File ID: L060310

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 4 dec. Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
84-74-2	Di-n-Butylphthalate	1000	B U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	670	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	340	U
117-84-0	Di-n-Octyl phthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

7-1-91
LS Simpkins

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000053

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-004

Sample wt/vol: 31.1 (g/mL) G

Lab File ID: L060310

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 4 dec.

Date Extracted: 05/29/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/03/91

GPC Cleanup: (Y/N) N pH: 5.7

Dilution Factor: 1.00

Number TICs found: 13

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	6.68	1000	J
2.	ALKANE	6.92	2000	J
3.	ALKANE	7.25	3000	J
4.	ALKANE	7.35	2000	J
5.	ALKANE	7.58	2000	J
6.	ALKANE	8.32	600	J
7.	ALKANE	9.03	3000	J
8.	ALKANE	9.72	500	J
9.	ALKANE	10.60	2000	J
10.	ALKANE	11.27	400	J
11.	ALKANE	12.12	2000	J
12.	ALKANE	13.28	1000	J
13.	TRIBUTYLPHOSPHATE	15.77	30000	J

Roy F. Weston, Inc. - Lionville Laboratory
PCBs by GC

Report Date: 06/07/91 10:04

RFW Batch Number: 9105L712 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000

	Cust ID:	BOOY88	BOOY89	BOOY89	BOOY89	BOOY91	BOOY93
Sample Information	RFW#:	001	002	002 MS	002 MSD	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.500	0.500	0.500	0.500	0.500	0.500
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate: Di-n-butylchlorendate		113 %	119 %	112 %	112 %	116 %	112 %
Aroclor-1016		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1221		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1232		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1242		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1248		42 U	40 U	40 U	40 U	39 U	40 U
Aroclor-1254		84 U	80 U	96 %	100 %	78 U	80 U
Aroclor-1260		84 U	80 U	80 U	81 U	78 U	80 U

	Cust ID:	PBLK	PBLK BS
Sample Information	RFW#:	91LE0698-MB1	91LE0698-MB1
	Matrix:	SOIL	SOIL
	D.F.:	0.500	0.500
	Units:	ug/Kg	ug/Kg
Surrogate: Di-n-butylchlorendate		98 %	86 %
Aroclor-1016		40 U	40 U
Aroclor-1221		40 U	40 U
Aroclor-1232		40 U	40 U
Aroclor-1242		40 U	40 U
Aroclor-1248		40 U	40 U
Aroclor-1254		80 U	90 %
Aroclor-1260		80 U	80 U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

1D

PESTICIDE ORGANICS ANALYSIS SHEET 0000022

CLIENT SAMPLE NO.

BOOY93

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-004

Sample wt/vol: 31.5 (g/mL) G

Lab File ID: 06069103.16

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 4 dec.

Date Extracted: 05/30/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/91

GPC Cleanup: (Y/N) N pH: 5.7

Dilution Factor: 0.500

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

CAS NO.	COMPOUND		
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	40	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	80	U
11096-82-5	Aroclor-1260	80	U

FORM 1 PEST 12/88 Rev.

1D

PESTICIDE ORGANICS ANALYSIS SHEET 0000019

CLIENT SAMPLE NO.

BOOY91

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L712-003

Sample wt/vol: 31.3 (g/mL) G

Lab File ID: 06069103.15

Level: (low/med) LOW

Date Received: 05/28/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/30/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/06/91

GPC Cleanup: (Y/N) N pH: 5.9

Dilution Factor: 0.500

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

CAS NO.	COMPOUND		
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	78	U
11096-82-5	Aroclor-1260	78	U

6/7/91

FORM 1 PEST 12/88 Rev.

1D

PESTICIDE ORGANICS ANALYSIS SHEET 0000016

CLIENT SAMPLE NO.

BOOY89

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-002

Sample wt/vol: 30.6 (g/mL) G Lab File ID: 06069103.14

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 2 dec. Date Extracted: 05/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/91

GPC Cleanup: (Y/N) N pH: 5.7 Dilution Factor: 0.500

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

CAS NO.	COMPOUND		
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	40	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	80	U
11096-82-5	Aroclor-1260	80	U

FORM 1 PEST 12/88 Rev.

6/7/91

1D

PESTICIDE ORGANICS ANALYSIS SHEET 0000013

CLIENT SAMPLE NO.

BOOY88

Lab Name: Roy F. Weston, Inc. Work Order: 6168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L712-001

Sample wt/vol: 30.1 (g/mL) G Lab File ID: 06069103.13

Level: (low/med) LOW Date Received: 05/28/91

% Moisture: not dec. 5 dec. Date Extracted: 05/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 0.500

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	42	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	84	U
11096-82-5	Aroclor-1260	84	U

FORM 1 PEST 12/88 Rev.

6/4/91

ORGANIC QC - Holding Times

Name C.J. Simiele Date 7-1-91

COMMENTS: VOA-(H.T=14days) analysis 8days after sampling
BNA-(HT-extract-7days, analysis-40days after extract)
extraction within 7days of sampling, analysis 5days
after extraction.
PCB'S-(HT-ext. 7days; analysis-40days after extraction)
extraction with in 7 days, analysis 7 days after extraction

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Surrogate Recovery

Name C.J. Simiele Date 7-1-91

COMMENTS: VOA & BNA's- all surrogate % recoveries are with in required control limits.
PCB's- all surrogate recoveries are with in required control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - MS/MSD

Name C. J. Simiele Date 7-1-91

COMMENTS: VOA- all % recoveries & % RPD's are with in required control limits.

BNA-all % Recoveries & % RPD's are with in required control limits, 3 % recoveries are out of control limits for Blank Spike.

PCB's-All % recoveries & % RPD's are with in required control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Blanks

Name C J. Simiele Date 7-1-91

COMMENTS: VOA-common contaminants (acetone & methylene glycol) detected in blank above IDL, frequency met. BNA-common lab contaminants (Di-n-butylphthalate) detected in method blank above IDL, frequency met. PCB-no contaminants detected in method blank above IDL

ACTION: Qualify associated samples as per OSM guidelines

sample #	constituent	value/qual
VOA:		
B00Y89	acetone	24 u
	methylene Cl	20 u
B00Y93	methylene Cl	1100 u
B00Y91	acetone	19 u
BNA:		
B00Y88	Di-n-butylphthalate	2700 u
B00Y89	" "	1100 u
B00Y91	" "	1200 u
B00Y93	" "	1000 u

sample #	constituent	value/qual
VOA:		
B00Y88	acetone	27 u

ORGANIC QC - GC/MS Tune

Name C.J. Simiele Date 7-1-91

COMMENTS: VOA & BNA- all GC/MS tune % relative abundance and frequency met.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Calibrations

Name C.J. Simiele Date 7-11-91

COMMENTS: VOA- no initial calib. data provided for med. level sample, continuing calibration for same sample within control limits, low level calib. data all within CRI limits
BNA- all initial & continuing calib. data is within required control limits
PCB- initial calib. & analytical sequence criteria met, continuing calibr. Beta-BHC & Endrin are out of req. control limits.

ACTION: VOA-(med level) no qualification as instrument performing within required limits on day of analysis
PCB- Qualify associated samples as per OSM guidelines - non target compounds, therefore no qualification

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Internal Standards

Name C.J. Simiele Date 7-11-91

COMMENTS: VOA & BNA- both area counts and retention times are within required control limits.

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Instrument Performance (pest)

Name C.J. Simiele Date 7-11-91

COMMENTS: PCB- all instrument performance criteria met

ACTION: None

sample #	constituent	value/qual	sample #	constituent	value/qual

ORGANIC QC - Other

Name C. J. Simiele Date 7-11-91

COMMENTS: None

ACTION:

sample #	constituent	value/qual	sample #	constituent	value/qual