33 R

5

Custody Transfer Record/Lab Work Request

WESTON

WESTON Analytics Use Only
9112L747

(WS-HANFORD)

Client: Westinghouse Hanford Company
Work Order: ~~91-019~~ ~~PE3BP~~ 6168-02-01 1-1737
Date Rec'd.: 12-13-91 Date Due: As specified in SOW
RFW Contact: Jessie Kemp
Client Contact/Phone: WS Thompson (509) 376-2153

Refrigerator#	Polycooler # SML-39								
#/Type Container	Glass								
Volume	120	950	1000 ml.		w/ BNA				
Preservative	← 4°C →								
ANALYSES REQUESTED →	1	2	3	Pest/PCB	TOC			CN	Metals

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	0624H	0625H	1548	0608H	IC Anions IOCT	See Below	ICN10	MHS270 Bi
001	B015P3	S	12/10/91	X	X	X	✓	✓	✓	✓	✓
002	B015P7	S	12/11/91	X	X	X	✓	✓	✓	✓	✓

00431 42

QC/Del = CLP
TAT = 35 days
Due Date = 1-17-92

ANALYSES REQUESTED: All analysis CLP

1) VOA (CLP)
2) Semi-VOA, Pesticides, PCB's, TOC, ICP/AA Metals, Bismuth, Cyanide; IC Anions NO2/NO3 (CLP)
3) Total alpha/beta, GEA, Tc99, Sr-90, Cs-137, Co-60, Pu-238, Pu-239/240, Ru-106, Total Uranium (CLP)

Matrix: S - Soil, SE - Sediment, SO - Solid, W - Water, O - Oil, A - Air, WI - Wipe, DS - Drum Solids, DL - Drum Liquids, F - Fish, L - EP/TCLP Leachate, X - Other

Special Instructions: Please call to confirm receipt and condition of sample

ANIONS = IC SO4, IC PO4, IC NO3. MS/MSD required for each batch of matrix

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
Emery Air See WHC C of C	[illegible]	[illegible]	12-13-91	13:20					

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES: 2509864709
2 Ambient ~~or Chilled~~
NOTES:
3 Received Broken/Leaking (Improperly Sealed) Y (N)
NOTES:
4 Properly Preserved (Y) N
NOTES:
5 Received Within Holding Times (Y) N
NOTES:

COC Tape Was:
1 Present on Outer Package (Y) N
2 Unbroken on Outer Package (Y) N
3 Present on Sample (Y) N
4 Unbroken on Sample (Y) N
NOTES:

COC Record Was:
1 Present Upon Receipt of Samples (Y) N

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

RFW 21-21-001/A-12/88

7-115

9112L747-WES-266 00000003

9612 2544

START

9613403.2545

Report To

Westinghouse Hanford Company
Richland, Washington

Data Validation Report
200-BP-1 RI/FS
Data Packages: 9111L354, 9111L389, 9111L404, 9111L514, 9112L619, 9112L661, 9112L747
Matrix: Soil
Analysis Type: Organics/Metals/Wet Chemistry

Prepared By

Golder Associates Inc.
Redmond, Washington

July 2, 1992

913-1719

9613403.2546 0000003

747

EMERY WORLDWIDE

A GF Company

SIGNATURE AND TALLY RECORD

60029-46 (8/89) Litho USA

75

DATE: 12/12/91 SHIPMENT NO.: 250986470 9

SHIPPER WESTINGHOUSE SHIPPING DEPT (509)376-6665

REFERENCE NO.: W92-0-0003 #16

SHIPPER NAME AND ADDRESS	CONSIGNEE NAME AND ADDRESS
WESTINGHOUSE SHIPPING DEPT (509) 376-6665 G206 US DEPARTMENT OF ENERGY C/O WESTINGHOUSE HANFORD COMPANY 2355 STEVENS DRIVE 1163BUILDING PO BOX 1970 RICHLAND WA 99352 W92-0-0003 #16	PEG BEATY RF WESTON INC 208 WELSH POOL ROAD LIONVILLE PA 19341-1313

Pieces	Weight	Description/Marks	Emery Authorization No.
1	51	POLY COOLER/SOIL SAMPLES #B015P3, #B015P7	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

	Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1.	[illegible]			
2.	[illegible]			
3.	Ted Vance EWN	PC	Ted Vance	1545 12/12/91
4.	K Rowden Hanford	Pasco	K Rowden	15:50 12-12-91
5.	[illegible]	[illegible]	[illegible]	0[illegible] 12/12
6.	B. FISHER	PHL	B. Fisher	1105 12/13
7.	W D SNYDER	PHL	W D Snyder	1115/13
8.	J.H. RICHARDSON	LIONVILLE, PA	Jim H. Richardson	13:20

SPECIAL HANDLING INSTRUCTIONS

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

RFW Batch Number: 9112L747 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 01/11/92 07:07 Page: 1a

	Cust ID:	BO15P3		BO15P3		BO15P3		BO15P7		BO15P7		VBLK	
Sample Information	RFW#:	001		001 MS		001 MSD		002		002		91LVW215-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 REPREP		ug/Kg	
Surrogate Recovery	Toluene-d8	105	%	103	%	110	%	112	%	94	%	105	%
	Bromofluorobenzene	117	%	93	%	101	%	96	%	107	%	112	%
	1,2-Dichloroethane-d4	113	%	106	%	99	%	94	%	106	%	112	%
Chloromethane		10	U	10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride		15	B	7	B	8	B	9	B	5	B	2	J
Acetone		20	B	95	B	160	B	43	B	15	B	6	J
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	106	%	113	%	5	U	5	U	5	U
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U	5	U	5	U
Chloroform		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
2-Butanone		10	U	10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U	5	U
Vinyl Acetate		10	U	10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Trichloroethene		5	U	100	%	111	%	5	U	5	U	5	U
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U	5	U
Benzene		5	U	108	%	122	%	5	U	5	U	5	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U	5	U
Bromoform		5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		5	U	5	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane		5	U	5	U	5	U	5	U	5	U	5	U

*= Outside of EPA CLP QC limits.

000005
9613403.2547

Cust ID:	BO15P3	BO15P3	BO15P3	BO15P7	BO15P7	VBLK
RFW#:	001	001 MS	001 MSD	002	002 REPREP	91LVW215-MB1
Toluene	5 U	107 %	124 %	5 U	5 U	5 U
Chlorobenzene	5 U	103 %	118 %	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

9613402.2548

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 12-13-91
RFW #: 9112L747, GC/MS VOLATILE
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of two (2) soil samples collected on 12-10,11-91.

The samples were analyzed according to criteria set forth in CLP SOW 2/88 (Rev. 5/89) for TCL Volatile target compounds on 12-18,19,20,21-91.

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

1. Non-target compounds were not detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

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

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

5. Internal standard areas were outside QC limits for samples B015P7 and B015P3. Sample B015P7 was re-analyzed on 12-21-91 and reported. The associated matrix spike and spike duplicate analyses of sample B015P3 fulfilled its re-analysis requirement.

1.23.92.

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

1A
VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B015P3

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9112L747-001

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

Lab File ID: W121818

Level: (low/med) LOW

Date Received: 12/13/91

% Moisture: not dec. 4

Date Analyzed: 12/18/91

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	15	B
67-64-1	Acetone	20	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

9613005.2651

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B015P3

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9112L747-001

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

Lab File ID: W121818

Level: (low/med) LOW

Date Received: 12/13/91

% Moisture: not dec. 4

Date Analyzed: 12/18/91

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

CLIENT SAMPLE NO.

B015P7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9112L747-002

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

Lab File ID: W121925

Level: (low/med) LOW

Date Received: 12/13/91

% Moisture: not dec. 4

Date Analyzed: 12/20/91

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	9	B
67-64-1	Acetone	43	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

9613403.2653

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B015P7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9112L747-002

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

Lab File ID: W121925

Level: (low/med) LOW

Date Received: 12/13/91

% Moisture: not dec. 4

Date Analyzed: 12/20/91

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.				

0000038

96 1A 3403 2554

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO15P7RE

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9112L747-002

Sample wt/vol: 5.00 (g/mL) G Lab File ID: W122015

Level: (low/med) LOW Date Received: 12/13/91

% Moisture: not dec. 4 Date Analyzed: 12/21/91

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	5	B
67-64-1	Acetone	15	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

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

RFW Batch Number: 9112L747 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 01/22/92 18:20 Page: 1a

	Cust ID:	BO15P3		BO15P3		BO15P3		BO15P7		SBLK		SBLK BS	
Sample Information	RFW#:	001		001 MS		001 MSD		002		91LE1772-MB1		91LE1772-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	42	%	47	%	54	%	61	%	47	%	42	%
	2-Fluorobiphenyl	38	%	36	%	45	%	54	%	39	%	35	%
	p-Terphenyl-d14	56	%	65	%	62	%	54	%	67	%	68	%
	Phenol-d5	54	%	57	%	70	%	57	%	60	%	54	%
	2-Fluorophenol	57	%	60	%	71	%	52	%	67	%	55	%
	2,4,6-Tribromophenol	69	%	61	%	62	%	35	%	74	%	68	%
Phenol		330	U	57	%	78	%	350	U	54	J	55	%
bis(2-Chloroethyl)ether		330	U	330	U	330	U	350	U	330	U	330	U
2-Chlorophenol		330	U	53	%	67	%	350	U	330	U	53	%
1,3-Dichlorobenzene		330	U	330	U	330	U	350	U	330	U	330	U
1,4-Dichlorobenzene		330	U	42	%	51	%	350	U	330	U	40	%
Benzyl alcohol		330	U	330	U	330	U	350	U	330	U	330	U
1,2-Dichlorobenzene		330	U	330	U	330	U	350	U	330	U	330	U
2-Methylphenol		330	U	330	U	330	U	350	U	330	U	330	U
bis(2-Chloroisopropyl)ether		330	U	330	U	330	U	350	U	330	U	330	U
4-Methylphenol		330	U	330	U	330	U	350	U	330	U	330	U
N-Nitroso-Di-n-propylamine		330	U	41	%	52	%	350	U	330	U	42	%
Hexachloroethane		330	U	330	U	330	U	350	U	330	U	330	U
Nitrobenzene		330	U	330	U	330	U	350	U	330	U	330	U
Isophorone		330	U	330	U	330	U	350	U	330	U	330	U
2-Nitrophenol		330	U	330	U	330	U	350	U	330	U	330	U
2,4-Dimethylphenol		330	U	330	U	330	U	350	U	330	U	330	U
Benzoic acid		1600	U	1600	U	1600	U	1700	U	1700	U	1700	U
bis(2-Chloroethoxy)methane		330	U	330	U	330	U	350	U	330	U	330	U
2,4-Dichlorophenol		330	U	330	U	330	U	350	U	330	U	330	U
1,2,4-Trichlorobenzene		330	U	46	%	56	%	350	U	330	U	44	%
Naphthalene		330	U	330	U	330	U	350	U	330	U	330	U
4-Chloroaniline		330	U	330	U	330	U	350	U	330	U	330	U
Hexachlorobutadiene		330	U	330	U	330	U	350	U	330	U	330	U
4-Chloro-3-methylphenol		330	U	62	%	78	%	350	U	330	U	70	%
2-Methylnaphthalene		330	U	330	U	330	U	350	U	330	U	330	U
Hexachlorocyclopentadiene		330	U	330	U	330	U	350	U	330	U	330	U

*= Outside of EPA CLP QC limits.

000005
9613401.2555

Cust ID:	BO15P3		BO15P3		BO15P3		BO15P7		SBLK		SBLK BS	
RFW#:	001		001 MS		001 MSD		002		91LE1772-MB1		91LE1772-MB1	
2,4,6-Trichlorophenol	330	U	330	U	330	U	350	U	330	U	330	U
2,4,5-Trichlorophenol	1600	U	1600	U	1600	U	1700	U	1700	U	1700	U
2-Chloronaphthalene	330	U	330	U	330	U	350	U	330	U	330	U
2-Nitroaniline	1600	U	1600	U	1600	U	1700	U	1700	U	1700	U
Dimethylphthalate	330	U	330	U	330	U	350	U	330	U	330	U
Acenaphthylene	330	U	330	U	330	U	350	U	330	U	330	U
2,6-Dinitrotoluene	330	U	330	U	330	U	350	U	330	U	330	U
3-Nitroaniline	1600	U	1600	U	1600	U	1700	U	1700	U	1700	U
Acenaphthene	330	U	42	%	53	%	350	U	330	U	45	%
2,4-Dinitrophenol	1600	U	1600	U	1600	U	1700	U	1700	U	1700	U
4-Nitrophenol	1600	U	64	%	71	%	1700	U	1700	U	62	%
Dibenzofuran	330	U	330	U	330	U	350	U	330	U	330	U
2,4-Dinitrotoluene	330	U	51	%	54	%	350	U	330	U	54	%
Diethylphthalate	330	U	330	U	330	U	350	U	330	U	330	U
4-Chlorophenyl-phenylether	330	U	330	U	330	U	350	U	330	U	330	U
Fluorene	330	U	330	U	330	U	350	U	330	U	330	U
4-Nitroaniline	1600	U	1600	U	1600	U	1700	U	1700	U	1700	U
4,6-Dinitro-2-methylphenol	1600	U	1600	U	1600	U	1700	U	1700	U	1700	U
N-Nitrosodiphenylamine (1)	330	U	330	U	330	U	350	U	330	U	330	U
4-Bromophenyl-phenylether	330	U	330	U	330	U	350	U	330	U	330	U
Hexachlorobenzene	330	U	330	U	330	U	350	U	330	U	330	U
Pentachlorophenol	1600	U	68	%	73	%	1700	U	1700	U	68	%
Phenanthrene	330	U	330	U	330	U	350	U	330	U	330	U
Anthracene	330	U	330	U	330	U	350	U	330	U	330	U
Di-n-Butylphthalate	330	U	38	J	110	J	40	J	330	U	330	U
Fluoranthene	330	U	330	U	330	U	350	U	330	U	330	U
Pyrene	330	U	68	%	67	%	350	U	330	U	74	%
Butylbenzylphthalate	330	U	330	U	330	U	350	U	330	U	330	U
3,3'-Dichlorobenzidine	660	U	660	U	660	U	690	U	670	U	670	U
Benzo(a)anthracene	330	U	330	U	330	U	350	U	330	U	330	U
Chrysene	330	U	330	U	330	U	350	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	67	J	51	J	330	U	170	J	330	U	330	U
Di-n-Octyl phthalate	330	U	330	U	330	U	350	U	330	U	330	U
Benzo(b)fluoranthene	330	U	330	U	330	U	350	U	330	U	330	U
Benzo(k)fluoranthene	330	U	330	U	330	U	350	U	330	U	330	U
Benzo(a)pyrene	330	U	330	U	330	U	350	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	330	U	330	U	330	U	350	U	330	U	330	U
Dibenzo(a,h)anthracene	330	U	330	U	330	U	350	U	330	U	330	U
Benzo(g,h,i)perylene	330	U	330	U	330	U	350	U	330	U	330	U

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

0000006
9613403.2556

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 12-13-91
RFW #: 9112L747, SEMIVOLATILE
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of two (2) soil samples collected on 12-10,11-91.

The samples were extracted on 12-13-91 and analyzed according to criteria set forth in CLP SOW 2/88 (Rev. 5/89) for TCL Semivolatiles target compounds on 01-10,21-92.

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

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

2. All surrogate recoveries were within EPA QC limits.

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

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

5. The laboratory blank 91LE1772-MB1 contained the target compound phenol at a level less than the CRQL.

6. Internal standard area and retention time criteria were met.

7. The large amount of adipate reported as a TIC in the samples and the QC sample is probable laboratory contamination.

Jack R. Tuschall, Ph.D. 2.4.92.
Date
Laboratory Manager
Lionville Analytical Laboratory

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B015P3

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9112L747-001

Sample wt/vol: 30.5 (g/mL) G

Lab File ID: J011015

Level: (low/med) LOW

Date Received: 12/13/91

% Moisture: not dec. 0 dec.

Date Extracted: 12/13/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 01/10/92

GPC Cleanup: (Y/N) Y pH: 8.3

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	1600	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	1600	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U

CLIENT SAMPLE NO.

BO15P3

SEMIVOLATILE ORGANICS ANALYSIS SHEET

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9112L747-001

Sample wt/vol: 30.5 (g/mL) G

Lab File ID: J011015

Level: (low/med) LOW

Date Received: 12/13/91

% Moisture: not dec. 0 dec.

Date Extracted: 12/13/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 01/10/92

GPC Cleanup: (Y/N) Y pH: 8.3

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	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	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	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	1600	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-Butylphthalate	330	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	67	J
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

CLIENT SAMPLE NO.

B015P3

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9112L747-001

Sample wt/vol: 30.5 (g/mL) G

Lab File ID: J011015

Level: (low/med) LOW

Date Received: 12/13/91

% Moisture: not dec. 0 dec.

Date Extracted: 12/13/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 01/10/92

GPC Cleanup: (Y/N) Y pH: 8.3

Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.21	300	JAB
2.	ADIPATE	23.18	70000	JB

9613403 2561 0000030

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO15P7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9112L747-002

Sample wt/vol: 30.2 (g/mL) G Lab File ID: J012111

Level: (low/med) LOW Date Received: 12/13/91

% Moisture: not dec. 4 dec. Date Extracted: 12/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/21/92

GPC Cleanup: (Y/N) Y pH: 8.1 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
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

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO15P7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9112L747-002

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: J012111

Level: (low/med) LOW

Date Received: 12/13/91

% Moisture: not dec. 4 dec.

Date Extracted: 12/13/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 01/21/92

GPC Cleanup: (Y/N) Y pH: 8.1

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	40	J
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	690	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	170	J
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

9615403 2563 1F 0000032

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO15P7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9112L747-002

Sample wt/vol: 30.2 (g/mL) G Lab File ID: J012111

Level: (low/med) LOW Date Received: 12/13/91

% Moisture: not dec. 4 dec. Date Extracted: 12/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/21/92

GPC Cleanup: (Y/N) Y pH: 8.1 Dilution Factor: 1.00

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.32	300	JAB
2.	ALDOL CONDENSATE	7.92	100	JA
3.	ADIPATE	23.28	60000	JB
4.	UNKNOWN	24.10	200	J

0000003

9613403.2564

Westinghouse Hanford Company	CHAIN OF CUSTODY

Custody Form Initiator WENDY S. THOMPSON

Project #: 91-019

Company Contact W. S. Thompson

Telephone (509) 376-2153

Project Designation/Sampling Locations 200-BP-1 Operable Unit

Collection Date 12/10/91, 12/11/

Boring: 216-B-46B

Time: 1350, 0944

Ice Chest No. SML-39

Field Logbook No. WHC-N-385-12

Bill of Lading/Airbill No. 2509864709

Offsite Property No. W92-0-003-

Method of Shipment Air (EMORY)

Shipped to Weston Laboratory, 208 Welsh Pool Road, Lionville, PA 19341-1313

Possible Sample Hazards/Remarks SAMPLE IS NONRADIOACTIVE. KEEP SAMPLE CHILLED. ALL ANALYSIS IS CLP - See LAB Statement of WORK.

Sample Identification

(1) B015P3

1, 120ml, amber glass, soil; CLP- VOA

1, 950ml, amber glass; soil; CLP- Semi-VOA, Pest/PCB, TOC, metals SO4, PO4, NO3; NO2/NO3, Br; Cn

1, 1000ml, glass; soil; CLP- total alpha, total beta, GEA, Tc99, Sr90, Cs137 Co60, Pu238/239/240, Ru106, TOTAL Uranium

(2) B015P7

1, 120ml. amber glass, soil; CLP-VOA

1, 950ml; amber glass; soil; CLP-Semi-VOA; Pest/PCB, TOC, metals, SO4, PO4, NO3, NO2/NO3; Br; C

1, 1000ml, glass; soil; CLP- total alpha, total beta, GEA, Tc99, Sr90 Cs137 Co60, Pu238 Pu240 Ru106, Total uranium

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

Relinquished by:	Received by:	Date/Time:
W. S. Thompson Wendy S. Thompson	M. C. Douglas Matthew C. Douglas	12-12-91 1123
Relinquished by: M. C. Douglas Matthew C. Douglas	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

Final Sample Disposition

Disposal Method:	Disposed by:	Date/Time:

Comments:

Roy F. Weston, Inc. - Lionville Laboratory
Pesticide/PCBs by GC, CLP List

RFW Batch Number: 9112L747 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 01/30/92 16:56 Page: 1

	Cust ID:	B015P3	B015P7	B015P7	B015P7	PBLK	PBLK BS
Sample Information	RFW#:	001	002	002 MS	002 MSD	91LE1730-MB1	91LE1730-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	2.50	2.50	5.00	5.00	0.500	5.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate: Di-n-butylchlorendate		115 %	144 %	137 %	I %	85 %	114 %
Alpha-BHC		21 U	21 U	41 U	42 U	4.0 U	40 U
Beta-BHC		21 U	21 U	41 U	42 U	4.0 U	40 U
Delta-BHC		21 U	21 U	41 U	42 U	4.0 U	40 U
gamma-BHC (Lindane)		21 U	21 U	75 %	84 %	4.0 U	76 %
Heptachlor		21 U	21 U	94 %	106 %	4.0 U	101 %
Aldrin		21 U	21 U	91 %	112 %	4.0 U	102 %
Heptachlor epoxide		21 U	21 U	41 U	42 U	4.0 U	40 U
Endosulfan I		21 U	21 U	41 U	42 U	4.0 U	40 U
Dieldrin		42 U	42 U	86 %	106 %	8.0 U	96 %
4,4'-DDE		42 U	42 U	82 U	84 U	8.0 U	80 U
Endrin		42 U	42 U	102 %	120 %	8.0 U	126 %
Endosulfan II		42 U	42 U	82 U	84 U	8.0 U	80 U
4,4'-DDD		42 U	42 U	82 U	84 U	8.0 U	80 U
Endosulfan sulfate		42 U	42 U	82 U	84 U	8.0 U	80 U
4,4'-DDT		42 U	42 U	94 %	114 %	8.0 U	94 %
Methoxychlor		210 U	210 U	410 U	420 U	40 U	400 U
Endrin ketone		42 U	42 U	82 U	84 U	8.0 U	80 U
alpha-Chlordane		210 U	210 U	410 U	420 U	40 U	400 U
gamma-Chlordane		210 U	210 U	410 U	420 U	40 U	400 U
Toxaphene		420 U	420 U	820 U	840 U	80 U	800 U
Aroclor-1016		210 U	210 U	410 U	420 U	40 U	400 U
Aroclor-1221		210 U	210 U	410 U	420 U	40 U	400 U
Aroclor-1232		210 U	210 U	410 U	420 U	40 U	400 U
Aroclor-1242		210 U	210 U	410 U	420 U	40 U	400 U
Aroclor-1248		210 U	210 U	410 U	420 U	40 U	400 U
Aroclor-1254		420 U	420 U	820 U	840 U	80 U	800 U
Aroclor-1260		420 U	420 U	820 U	840 U	80 U	800 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

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9613403.2565

9613403.2566 7A

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 12-13-91
RFW #: 9112L747, PEST/PCB
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of two (2) soil samples collected on 12-10,11-91.

The samples were extracted on 12-18-91 and analyzed according to criteria set forth in the Contract Laboratory Program for Pesticide and PCB target compounds on 01-27,28-92.

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

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

2. Continuing calibration criteria were met on both the primary and confirmation columns in standards analyzed prior to sample extracts.

3. Retention time criteria were met for all compounds on both the primary and confirmation columns.

4. All obtainable surrogate recoveries were within EPA QC limits.

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

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

7. Samples B015P3 and B015P7 required five-fold dilutions because they contained high levels of non-target compounds.

8. The blank spike and matrix spike samples required ten-fold dilutions to maintain the pesticide concentrations within the linear range of the instrument.

2.11.92.

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

9613903.2567

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
216-B-46B 3.0-6.0

BO15P3

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9112L747-001

Sample wt/vol: 29.9 (g/mL) G Lab File ID: 01279203.22

Level: (low/med) LOW Date Received: 12/13/91

% Moisture: not dec. 4 dec. Date Extracted: 12/18/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/27/92

GPC Cleanup: (Y/N) N pH: 7.7 Dilution Factor: 2.50

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	21	U
319-85-7	Beta-BHC	21	U
319-86-8	Delta-BHC	21	U
58-89-9	gamma-BHC (Lindane)	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	42	U
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	42	U
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	42	U
5103-71-9	alpha-Chlordane	210	U
5103-74-2	gamma-Chlordane	210	U
8001-35-2	Toxaphene	420	U
12674-11-2	Aroclor-1016	210	U
11104-28-2	Aroclor-1221	210	U
11141-16-5	Aroclor-1232	210	U
53469-21-9	Aroclor-1242	210	U
12672-29-6	Aroclor-1248	210	U
11097-69-1	Aroclor-1254	420	U
11096-82-5	Aroclor-1260	420	U

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PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

216-B-46B 8.5-11.0

BO15P7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9112L747-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 01279203.23

Level: (low/med) LOW Date Received: 12/13/91

% Moisture: not dec. 4 dec. Date Extracted: 12/18/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/27/92

GPC Cleanup: (Y/N) N pH: 7.8 Dilution Factor: 2.50

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

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	21	U
319-85-7	Beta-BHC	21	U
319-86-8	Delta-BHC	21	U
58-89-9	gamma-BHC (Lindane)	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	42	U
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	42	U
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	42	U
5103-71-9	alpha-Chlordane	210	U
5103-74-2	gamma-Chlordane	210	U
8001-35-2	Toxaphene	420	U
12674-11-2	Aroclor-1016	210	U
11104-28-2	Aroclor-1221	210	U
11141-16-5	Aroclor-1232	210	U
53469-21-9	Aroclor-1242	210	U
12672-29-6	Aroclor-1248	210	U
11097-69-1	Aroclor-1254	420	U
11096-82-5	Aroclor-1260	420	U

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2-4-92

FORM 1 PEST 12/88 Rev.

9613403.2569

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 12-13-91
RFW #: 9112L747
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.

2. All preparation blank results were below the required detection limit.

3. All laboratory control standards (blank spikes) were within the control limits of 80-120%. All %RPD were within the 20% guidance limit.

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 on the Inorganic Accuracy Report contained within this document. All applicable recoveries were within the 75-125% guidance limits with the exception of cyanide and cyanide MSD. All %RPD were within the 20% guidance limit.

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

7. 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).

1. 10. 92.

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

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ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 01/07/92

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

WESTON BATCH #: 9112L747

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	BO15P3	% Solids	96.4		%	0.10
		Nitrate by IC	60.6		MG/KG	1.3
		Cyanide, Total	1.0	u	MG/KG	1.0
		Phosphate by IC	2.8		MG/KG	1.3
		Sulfate by IC	31.5		MG/KG	1.3
		Nitrate Nitrite	19.5		MG-N/KG	5.2
		Total Organic Carbon	0.49		%	0.10
-002	BO15P7	% Solids	95.8		%	0.10
		Nitrate by IC	135		MG/KG	13.0
		Cyanide, Total	1.0	u	MG/KG	1.0
		Phosphate by IC	1.3	u	MG/KG	1.3
		Sulfate by IC	477		MG/KG	13.0
		Nitrate Nitrite	46.9		MG-N/KG	13.0
		Total Organic Carbon	0.52		%	0.10

WESTON

Roy F. Weston, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 12/13/91
RFW #: 9112L747
W.O. #: 6168-02-01

METALS NARRATIVE

The set of samples consisted of (2) soil samples collected on 12/10, 12/11/91.

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 recoveries were within the 75-125% control limits with the exception of Sb, As, and Cn. All corresponding samples were flagged with an "N" according to CLP protocol.

7. All duplicate analyses were within the 20% RPD control limit with the exception of Al, Ca, and Fe. All corresponding samples were flagged with an "*" according to CLP protocol.

8. Lead sample results were calculated by the method of standard addition (MSA). All corresponding samples were flagged with an "S" according to CLP protocol.

9. For MSA, results reported on Form 8 are calculated from absorbance values. Results reported on other forms are based on concentration. As indicated in the SOW1LJM01.0, page B-32, differences due to rounding may be found between the MSA values on Form 8 and the results reported on the other forms.

WESTON

10. The code CV is currently in use by the laboratory for both mercury instruments in operation (HG1 and HG2). HG1 is complete with autosampler and software, but still requires manual digestion; HG2 is operated by the analyst, produces a strip chart and also requires manual digestion.

11. HG1 requires less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionally scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 ml. For soils, 0.1 gram of sample is taken to a final volume of 50 ml (including all reagents).

12. Quarterly Detection Limits for IC1 are included in this package.

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

2.19.92
Date

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ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 02/18/92

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

WESTON BATCH #: 9112L747

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	BO15P3	Silver, Total	2.1	u	MG/KG	2.1
		Aluminum, Total	4240		MG/KG	41.5
		Arsenic, Total	2.2		MG/KG	2.1
		Barium, Total	70.0		MG/KG	41.5
		Beryllium, Total	1.0	u	MG/KG	1.0
		Bismuth, Total	31.1	u	MG/KG	31.1
		Calcium, Total	7750		MG/KG	1040
		Cadmium, Total	1.3		MG/KG	1.0
		Cobalt, Total	10.4	u	MG/KG	10.4
		Chromium, Total	5.7		MG/KG	2.1
		Copper, Total	12.4		MG/KG	5.2
		Iron, Total	12100		MG/KG	20.7
		Mercury, Total	0.10	u	MG/KG	0.10
		Potassium, Total	1250		MG/KG	1040
		Magnesium, Total	3170		MG/KG	1040
		Manganese, Total	266		MG/KG	3.1
		Sodium, Total	1040	u	MG/KG	1040
		Nickel, Total	8.9		MG/KG	8.3
		Lead, Total	4.9		MG/KG	0.62
		Antimony, Total	12.4	u	MG/KG	12.4
		Selenium, Total	1.0	u	MG/KG	1.0
		Thallium, Total	2.1	u	MG/KG	2.1
		Vanadium, Total	22.5		MG/KG	10.4
		Zinc, Total	20.1		MG/KG	4.1

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 02/18/92

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

WESTON BATCH #: 9112L747

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-002	BO15P7	Silver, Total	2.0	u	MG/KG	2.0
		Aluminum, Total	3270		MG/KG	40.7
		Arsenic, Total	2.1	u	MG/KG	2.1
		Barium, Total	65.8		MG/KG	40.7
		Beryllium, Total	1.0	u	MG/KG	1.0
		Bismuth, Total	30.5	u	MG/KG	30.5
		Calcium, Total	6000		MG/KG	1020
		Cadmium, Total	1.3		MG/KG	1.0
		Cobalt, Total	10.2	u	MG/KG	10.2
		Chromium, Total	4.2		MG/KG	2.0
		Copper, Total	11.0		MG/KG	5.1
		Iron, Total	9530		MG/KG	20.3
		Mercury, Total	0.10	u	MG/KG	0.10
		Potassium, Total	1020	u	MG/KG	1020
		Magnesium, Total	2530		MG/KG	1020
		Manganese, Total	218		MG/KG	3.0
		Sodium, Total	1020	u	MG/KG	1020
		Nickel, Total	8.1	u	MG/KG	8.1
		Lead, Total	4.0		MG/KG	0.59
		Antimony, Total	12.2	u	MG/KG	12.2
		Selenium, Total	1.0	u	MG/KG	1.0
		Thallium, Total	2.1	u	MG/KG	2.1
		Vanadium, Total	18.7		MG/KG	10.2
		Zinc, Total	21.9		MG/KG	4.2

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B015P3

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP747

Matrix (soil/water): SOIL Lab Sample ID: 911274701

Level (low/med): LOW Date Received: 12/13/91

% Solids: 96.4

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4240.00		*E	P
7440-36-0	Antimony	7.00	B	N	P
7440-38-2	Arsenic	2.20		N	F
7440-39-3	Barium	70.00			P
7440-41-7	Beryllium	.31	B		P
7440-43-9	Cadmium	1.30			P
7440-70-2	Calcium	7750.00		*E	P
7440-47-3	Chromium	5.70			P
7440-48-4	Cobalt	8.70	B		P
7440-50-8	Copper	12.40			P
7439-89-6	Iron	12100.00		*E	P
7439-92-1	Lead	4.90		S	F
7439-95-4	Magnesium	3170.00		E	P
7439-96-5	Manganese	266.00		E	P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	8.90			P
7440-09-7	Potassium	1250.00			P
7782-49-2	Selenium	.42	U		F
7440-22-4	Silver	.83	U		P
7440-23-5	Sodium	132.00	U		P
7440-28-0	Thallium	.42	U		F
7440-62-2	Vanadium	22.50			P
7440-66-6	Zinc	20.10			P
	Cyanide	1.04	U	N	C

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.

B015P7

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP747

Matrix (soil/water): SOIL Lab Sample ID: 911274702

Level (low/med): LOW Date Received: 12/13/91

% Solids: 95.8

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

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3270.00		*E	P
7440-36-0	Antimony	8.90	B	N	P
7440-38-2	Arsenic	2.00	B	N	F
7440-39-3	Barium	65.80			P
7440-41-7	Beryllium	.24	B		P
7440-43-9	Cadmium	1.30			P
7440-70-2	Calcium	6000.00		*E	P
7440-47-3	Chromium	4.20			P
7440-48-4	Cobalt	7.10	B		P
7440-50-8	Copper	11.00			P
7439-89-6	Iron	9530.00		*E	P
7439-92-1	Lead	4.00		S	F
7439-95-4	Magnesium	2530.00		E	P
7439-96-5	Manganese	218.00		E	P
7439-97-6	Mercury	.05	U		CV
7440-02-0	Nickel	6.70	B		P
7440-09-7	Potassium	845.00	B		P
7782-49-2	Selenium	.42	U	W	F
7440-22-4	Silver	.81	U		P
7440-23-5	Sodium	263.00	B		P
7440-28-0	Thallium	.42	U		F
7440-62-2	Vanadium	18.70			P
7440-66-6	Zinc	21.90			P
	Cyanide	1.04	U	N	C

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments: