0043128 28 9111L354-WES-240

9111L354-WES-240

0000002

START 9613403.2155

| WESTON Analytics Use Only |
|---|
| 9111L354 |

# Custody Transfer Record/Lab Work Request

WESTON MANAGERS DESIGNERS CONSULTANTS

Page 1 of 1

Client Westinghouse Hanford Co.
Est. Final Proj. Sampling Date
Work Order # 91-019 PE3BP 6168-02-01
Project Contact/Phone # WS Thompson(509)376-2153
AD Project Manager Peg Beaty
QC CLP Del CLP TAT 35 day 11/4/91
Date Rec'd 11/9/91 Date Due As specified
Account # WS Hanford in Statement of Work

Refrigerator #
#/Type Container Liquid / Solid
Volume Liquid / Solid
Preservatives

polycooler # SM1#47
← Glass →
125 950 100 milliter
← 4°C →

ANALYSES REQUESTED →

| Lab ID | Client ID/Description | Matrix QC Chosen (✓) | Matrix | Date Collected | ORGANIC VOA | ORGANIC BNA | ORGANIC Pest/PCB | ORGANIC Herb | 1 | 2 | 3 | INORG Metal | INORG CN | Anions | N3N0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 0635H | 0608H | | 0624H | IOCT | ISOB | HSL + BI | ICN70 | See Below | IN3N0 |
| 001 | B015L7 | | S | 11/7/91 | | ✓ | ✓ | | X | X | X | ✓ | ✓ | ✓ | ✓ |

MATRIX CODES:
S - Soil
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

Run ① MS/MSD

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

Anions = IC SO4, ICPO4, IC NO3

Special Instructions:

Please call to confirm receipt and condition of sample

Tc99

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

Redinfotofollow

| Relinquished by | Received by | Date | Time | Relinquished by | Received by | Date | Time |
|---|---|---|---|---|---|---|---|
| See WHC C of C | | | / | Emery | P Gerger | 11/9/91 | 1:45 pm |

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

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

RFW 21-21-001/A-8/90 ___ L372 ___ L373 ___ L375 ___ L377 ___ L378 Ref# Na Cooler# Na 381-596a

9613403.2156

0000003

Westinghouse Hanford Company

# CHAIN OF CUSTODY

QFW 9111L354

Custody Form Initiator: W. 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: 11/7/91

Boring: 216-B-43A

Time: 1405

Ice Chest No.: SML #47

Field Logbook No.: WHC-N-385-12

Bill of Lading/Airbill No.:

Offsite Property No.:

Method of Shipment: Air

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

Possible Sample Hazards/Remarks: None indicated by hand-held field instruments. Keep sample chilled. All analysis is CLP. See Statement of Work

Sample Identification

(1) B015L7

1, 125ml; amber glass; soil; CLP VOA

1, 950ml; amber glass; soil; CLP Semi-VOA; Pest/PCB; ICP/AA metals; Bi; Cn; Anions; $SO_4$, $PO_4$, $NO_3$, $NO_2$/$NO_3$,

1, 1000ml; glass; soil; CLP TOTAL ALPHA TOTAL Beta; GEA, Sr90, Cs137, Co60, Ru106, Tc99, Pu238, TOTAL URANIUM, Pu239/240

☐ Field Transfer of Custody

CHAIN OF POSSESSION (Sign and Print Names)

| Relinquished by: | Received by: | Date/Time: |
|---|---|---|
| W.S. Thompson<br>Henry S Thompson | | |
| Relinquished by: Emery | Received by: | Date/Time: 11/9/91 1:45 PM |
| 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
Volatiles by GC/MS, HSL List

RFW Batch Number: 9111L354 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 12/09/91 12:20 Page: 1a

| | Cust ID: | B015L7 | | B015L7 | | B015L7 | | VBLK | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Information | RFW#: | 001 | | 001 MS | | 001 MSD | | 91LVY198-MB1 | |
| | Matrix: | SOIL | | SOIL | | SOIL | | SOIL | |
| | D.F.: | 0.980 | | 1.00 | | 1.00 | | 1.00 | |
| | Units: | ug/Kg | | ug/Kg | | ug/Kg | | ug/Kg | |
| Surrogate Recovery | Toluene-d8 | 94 | % | 96 | % | 92 | % | 101 | % |
| | Bromofluorobenzene | 92 | % | 91 | % | 93 | % | 101 | % |
| | 1,2-Dichloroethane-d4 | 71 | % | 70 | % | 71 | % | 95 | % |
| Chloromethane | | 10 | U | 10 | U | 10 | U | 10 | U |
| Bromomethane | | 10 | U | 10 | U | 10 | U | 10 | U |
| Vinyl Chloride | | 10 | U | 10 | U | 10 | U | 10 | U |
| Chloroethane | | 10 | U | 10 | U | 10 | U | 10 | U |
| Methylene Chloride | | 16 | B | 18 | B | 14 | B | 3 | J |
| Acetone | | 23 | B | 31 | B | 21 | B | 6 | J |
| Carbon Disulfide | | 5 | U | 5 | U | 5 | U | 5 | U |
| 1,1-Dichloroethene | | 5 | U | 111 | % | 110 | % | 5 | U |
| 1,1-Dichloroethane | | 5 | U | 5 | U | 5 | U | 5 | U |
| 1,2-Dichloroethene (total) | | 5 | U | 5 | U | 5 | U | 5 | U |
| Chloroform | | 5 | U | 5 | U | 5 | U | 5 | U |
| 1,2-Dichloroethane | | 5 | U | 5 | U | 5 | U | 5 | U |
| 2-Butanone | | 10 | U | 10 | U | 10 | U | 10 | U |
| 1,1,1-Trichloroethane | | 5 | U | 5 | U | 5 | U | 5 | U |
| Carbon Tetrachloride | | 5 | U | 5 | U | 5 | U | 5 | U |
| Vinyl Acetate | | 10 | U | 10 | U | 10 | U | 10 | U |
| Bromodichloromethane | | 5 | U | 5 | U | 5 | U | 5 | U |
| 1,2-Dichloropropane | | 5 | U | 5 | U | 5 | U | 5 | U |
| cis-1,3-Dichloropropene | | 5 | U | 5 | U | 5 | U | 5 | U |
| Trichloroethene | | 5 | U | 109 | % | 108 | % | 5 | U |
| Dibromochloromethane | | 5 | U | 5 | U | 5 | U | 5 | U |
| 1,1,2-Trichloroethane | | 5 | U | 5 | U | 5 | U | 5 | U |
| Benzene | | 5 | U | 86 | % | 83 | % | 5 | U |
| Trans-1,3-Dichloropropene | | 5 | U | 5 | U | 5 | U | 5 | U |
| Bromoform | | 5 | U | 5 | U | 5 | U | 5 | U |
| 4-Methyl-2-pentanone | | 10 | U | 10 | U | 10 | U | 10 | U |
| 2-Hexanone | | 10 | U | 10 | U | 10 | U | 10 | U |
| Tetrachloroethene | | 5 | U | 5 | U | 5 | U | 5 | U |
| 1,1,2,2-Tetrachloroethane | | 5 | U | 5 | U | 5 | U | 5 | U |

*= Outside of EPA CLP QC limits.

000006
9613403.2157

| Cust ID: | BO15L7 | | BO15L7 | | BO15L7 | | VBLK | |
|---|---|---|---|---|---|---|---|---|
| RFW#: | 001 | | 001 MS | | 001 MSD | | 91LVY198-MB1 | |
| Toluene | 1 | J | 100 | % | 97 | % | 5 | U |
| Chlorobenzene | 5 | U | 111 | % | 108 | % | 5 | U |
| Ethylbenzene | 5 | U | 5 | U | 5 | U | 5 | U |
| Styrene | 5 | U | 5 | U | 5 | U | 5 | U |
| Xylene (total) | 5 | U | 5 | U | 5 | U | 5 | U |

*= Outside of EPA CLP QC limits.

0000007

9613401.2158

**ROY F. WESTON, INC.**
**Lionville Laboratory**

**CLIENT:** WESTINGHOUSE-HANFORD **SAMPLES RECEIVED:** 11-09-91
**RFW #:** 9111L354, GC/MS VOLATILE
**W.O. #:** 6168-02-01

**NARRATIVE**

One (1) soil sample was collected on 11-07-91.

The samples were analyzed according to criteria set forth in CLP SOW 2/88 (Rev. 5/89) for TCL Volatile target compounds on 11-13-91.

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

Margaret M. Beaty for 12/26/91
Jack R. Tuschall, Ph.D. Date
Laboratory Manager
Lionville Analytical Laboratory

9613403.2160 0000018

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B015L7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9111L354-001

Sample wt/vol: 5.10 (g/mL) G

Lab File ID: Y111312

Level: (low/med) LOW

Date Received: 11/09/91

% Moisture: not dec. 5

Date Analyzed: 11/13/91

Column: (pack/cap) PACK

Dilution Factor: 0.980

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 | 16 | B |
| 67-64-1 | Acetone | 23 | 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 |

9613405.2161

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BO15L7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9111L354-001

Sample wt/vol: 5.10 (g/mL) G

Lab File ID: Y111312

Level: (low/med) LOW

Date Received: 11/09/91

% Moisture: not dec. 5

Date Analyzed: 11/13/91

Column: (pack/cap) PACK

Dilution Factor: 0.980

Number TICs found: 0

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

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

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

RFW Batch Number: 9111L354 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 12/12/91 17:08 Page: 1a

| | Cust ID: | BO15L7 | | BO15L7 | | BO15L7 | | SBLK | | SBLK BS | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Information | RFW#: | 001 | | 001 MS | | 001 MSD | | 91LE1508-MB1 | | 91LE1508-MB1 | |
| | Matrix: | SOIL | | SOIL | | SOIL | | SOIL | | SOIL | |
| | D.F.: | 1.00 | | 1.00 | | 1.00 | | 1.00 | | 1.00 | |
| | Units: | ug/Kg | | ug/Kg | | ug/Kg | | ug/Kg | | ug/Kg | |
| Surrogate Recovery | Nitrobenzene-d5 | 75 | % | 73 | % | 74 | % | 75 | % | 82 | % |
| | 2-Fluorobiphenyl | 88 | % | 83 | % | 79 | % | 81 | % | 82 | % |
| | p-Terphenyl-d14 | 91 | % | 97 | % | 85 | % | 90 | % | 98 | % |
| | Phenol-d5 | 83 | % | 81 | % | 81 | % | 80 | % | 83 | % |
| | 2-Fluorophenol | 82 | % | 83 | % | 83 | % | 80 | % | 84 | % |
| | 2,4,6-Tribromophenol | 102 | % | 109 | % | 94 | % | 91 | % | 105 | % |
| Phenol | | 340 | U | 79 | % | 81 | % | 330 | U | 86 | % |
| bis(2-Chloroethyl)ether | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2-Chlorophenol | | 340 | U | 83 | % | 83 | % | 330 | U | 86 | % |
| 1,3-Dichlorobenzene | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 1,4-Dichlorobenzene | | 340 | U | 75 | % | 77 | % | 330 | U | 78 | % |
| Benzyl alcohol | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 1,2-Dichlorobenzene | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2-Methylphenol | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| bis(2-Chloroisopropyl)ether | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 4-Methylphenol | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| N-Nitroso-Di-n-propylamine | | 340 | U | 84 | % | 87 | % | 330 | U | 87 | % |
| Hexachloroethane | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Nitrobenzene | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Isophorone | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2-Nitrophenol | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2,4-Dimethylphenol | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Benzoic acid | | 1700 | U | 1700 | U | 1700 | U | 1700 | U | 1700 | U |
| bis(2-Chloroethoxy)methane | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2,4-Dichlorophenol | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 1,2,4-Trichlorobenzene | | 340 | U | 81 | % | 83 | % | 330 | U | 82 | % |
| Naphthalene | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 4-Chloroaniline | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Hexachlorobutadiene | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 4-Chloro-3-methylphenol | | 340 | U | 87 | % | 88 | % | 330 | U | 94 | % |
| 2-Methylnaphthalene | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Hexachlorocyclopentadiene | | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |

*= Outside of EPA CLP QC limits.

000066

| Cust ID: | BO15L7 | | BO15L7 | | BO15L7 | | SBLK | | SBLK BS | |
|---|---|---|---|---|---|---|---|---|---|---|
| RFW#: | 001 | | 001 MS | | 001 MSD | | 91LE1508-MB1 | | 91LE1508-MB1 | |
| 2,4,6-Trichlorophenol | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2,4,5-Trichlorophenol | 1700 | U | 1700 | U | 1700 | U | 1700 | U | 1700 | U |
| 2-Chloronaphthalene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2-Nitroaniline | 1700 | U | 1700 | U | 1700 | U | 1700 | U | 1700 | U |
| Dimethylphthalate | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Acenaphthylene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2,6-Dinitrotoluene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 3-Nitroaniline | 1700 | U | 1700 | U | 1700 | U | 1700 | U | 1700 | U |
| Acenaphthene | 340 | U | 84 | % | 82 | % | 330 | U | 87 | % |
| 2,4-Dinitrophenol | 1700 | U | 1700 | U | 1700 | U | 1700 | U | 1700 | U |
| 4-Nitrophenol | 1700 | U | 84 | % | 84 | % | 1700 | U | 99 | % |
| Dibenzofuran | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 2,4-Dinitrotoluene | 340 | U | 89 | % | 87 | % | 330 | U | 93 * | % |
| Diethylphthalate | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 4-Chlorophenyl-phenylether | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Fluorene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 4-Nitroaniline | 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 |
| N-Nitrosodiphenylamine (1) | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 4-Bromophenyl-phenylether | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Hexachlorobenzene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Pentachlorophenol | 1700 | U | 83 | % | 88 | % | 1700 | U | 94 | % |
| Phenanthrene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Anthracene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Di-n-Butylphthalate | 55 | J | 45 | J | 44 | J | 330 | U | 40 | J |
| Fluoranthene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Pyrene | 340 | U | 89 | % | 85 | % | 330 | U | 93 | % |
| Butylbenzylphthalate | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| 3,3'-Dichlorobenzidine | 690 | U | 690 | U | 690 | U | 670 | U | 670 | U |
| Benzo(a)anthracene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Chrysene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| bis(2-Ethylhexyl)phthalate | 80 | JB | 170 | JB | 110 | JB | 83 | J | 190 | JB |
| Di-n-Octyl phthalate | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Benzo(b)fluoranthene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Benzo(k)fluoranthene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Benzo(a)pyrene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Indeno(1,2,3-cd)pyrene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Dibenzo(a,h)anthracene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |
| Benzo(g,h,i)perylene | 340 | U | 350 | U | 340 | U | 330 | U | 330 | U |

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

9413012.1363 0000007

**ROY F. WESTON, INC.**
**Lionville Laboratory**

**CLIENT:** WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 11-09-91
**RFW #:** 9111L354, SEMIVOLATILE
**W.O. #:** 6168-02-01

**NARRATIVE**

One (1) soil sample was collected on 11-07-91.

The sample and its associated QC samples were extracted on 11-12-91 and analyzed according to criteria set forth in CLP SOW 02/88 (Rev. 05/89) for TCL Semivolatile target compounds on 11-22-91.

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 detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. One (1) of eleven (11) blank spike recoveries was outside EPA QC limits.

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

5. The laboratory blank contained the common contaminant bis(2-ethylhexyl)phthalate at a level less than the CRQL.

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

12.16.91.

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

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO15L7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9111L354-001

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S112205

Level: (low/med) LOW Date Received: 11/09/91

% Moisture: not dec. 5 dec. Date Extracted: 11/12/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/22/91

GPC Cleanup: (Y/N) N pH: 7.4 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 |

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO15L7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9111L354-001

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: S112205

Level: (low/med) LOW

Date Received: 11/09/91

% Moisture: not dec. 5 dec.

Date Extracted: 11/12/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 11/22/91

GPC Cleanup: (Y/N) N pH: 7.4

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 | 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 | 55 | J |
| 206-44-0 | Fluoranthene | 340 | U |
| 129-00-0 | Pyrene | 340 | U |
| 85-68-7 | Butylbenzylphthalate | 340 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 690 | U |
| 56-55-3 | Benzo(a)anthracene | 340 | U |
| 218-01-9 | Chrysene | 340 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 80 | JB |
| 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

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B015L7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9111L354-001

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S112205

Level: (low/med) LOW Date Received: 11/09/91

% Moisture: not dec. 5 dec. Date Extracted: 11/12/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 11/22/91

GPC Cleanup: (Y/N) N pH: 7.4 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 | 4.80 | 100 | JAB |
| 2. | ALDOL CONDENSATE | 6.30 | 200 | JAB |

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

Report Date: 12/16/91 12:22

RFW Batch Number: 9111L354 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Page: 1

| | Cust ID: | BO15L7 | | BO15L7 | | PBLK | | PBLK BS | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Information | RFW#: | 001 | | 001 MS | | 91LE1512-MB1 | | 91LE1512-MB1 | |
| | Matrix: | SOIL | | SOIL | | SOIL | | SOIL | |
| | D.F.: | 1.00 | | 4.00 | | 1.00 | | 4.00 | |
| | Units: | ug/Kg | | ug/Kg | | ug/Kg | | ug/Kg | |
| Surrogate: Di-n-butylchlorendate | | 84 | % | 65 | % | I | % | I | % |
| | | | fl | | fl | | fl | | fl |
| Alpha-BHC | | 8.1 | U | 34 | U | 8.0 | U | 32 | U |
| Beta-BHC | | 8.1 | U | 34 | U | 8.0 | U | 32 | U |
| Delta-BHC | | 8.1 | U | 34 | U | 8.0 | U | 32 | U |
| gamma-BHC (Lindane) | | 8.1 | U | 60 | % | 8.0 | U | 95 | % |
| Heptachlor | | 8.1 | U | 70 | % | 8.0 | U | 75 | % |
| Aldrin | | 8.1 | U | 68 | % | 8.0 | U | 75 | % |
| Heptachlor epoxide | | 8.1 | U | 34 | U | 8.0 | U | 32 | U |
| Endosulfan I | | 8.1 | U | 34 | U | 8.0 | U | 32 | U |
| Dieldrin | | 16 | U | 70 | % | 16 | U | 76 | % |
| 4,4'-DDE | | 16 | U | 68 | U | 16 | U | 64 | U |
| Endrin | | 16 | U | 77 | % | 16 | U | 86 | % |
| Endosulfan II | | 16 | U | 68 | U | 16 | U | 64 | U |
| 4,4'-DDD | | 16 | U | 68 | U | 16 | U | 64 | U |
| Endosulfan sulfate | | 16 | U | 68 | U | 16 | U | 64 | U |
| 4,4'-DDT | | 16 | U | 69 | % | 16 | U | 74 | % |
| Methoxychlor | | 81 | U | 340 | U | 80 | U | 320 | U |
| Endrin ketone | | 16 | U | 68 | U | 16 | U | 64 | U |
| alpha-Chlordane | | 81 | U | 340 | U | 80 | U | 320 | U |
| gamma-Chlordane | | 81 | U | 340 | U | 80 | U | 320 | U |
| Toxaphene | | 160 | U | 680 | U | 160 | U | 640 | U |
| Aroclor-1016 | | 81 | U | 340 | U | 80 | U | 320 | U |
| Aroclor-1221 | | 81 | U | 340 | U | 80 | U | 320 | U |
| Aroclor-1232 | | 81 | U | 340 | U | 80 | U | 320 | U |
| Aroclor-1242 | | 81 | U | 340 | U | 80 | U | 320 | U |
| Aroclor-1248 | | 81 | U | 340 | U | 80 | U | 320 | U |
| Aroclor-1254 | | 160 | U | 680 | U | 160 | U | 640 | U |
| Aroclor-1260 | | 160 | U | 680 | U | 160 | U | 640 | 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

9613401.2168 0000006

9615405.2169 7A

**ROY F. WESTON, INC.**
**Lionville Laboratory**

**CLIENT:** WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 11-09-91
**RFW #:** 9111L354, PEST/PCB
**W.O. #:** 6168-02-01

**NARRATIVE**

One (1) soil sample was collected on 11-07-91.

The sample and its associated QC samples were extracted on 11-13-91 and analyzed according to criteria set forth in the Contract Laboratory Program for Pesticide and PCB target compounds on 12-07,08-91.

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

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

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

3. Retention time criteria were met for all compounds on both the primary and confirmation columns in standards analyzed prior to the sample extracts.

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

8. It appears that the pesticide spike was inadvertently omitted during preparation of the matrix spike duplicate sample. This sample has been re-extracted and results will be sent under a separate cover upon completion of analysis.

12.30.91.

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

9615405.2170 0000015

CLIENT SAMPLE NO.

# PESTICIDE ORGANICS ANALYSIS SHEET

BO15L7

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9111L354-001

Sample wt/vol: 31.1 (g/mL) G Lab File ID: 12069127.43

Level: (low/med) LOW Date Received: 11/09/91

% Moisture: not dec. 5 dec. Date Extracted: 11/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 12/07/91

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.00

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

| CAS NO. | COMPOUND | | |
|---|---|---|---|
| 319-84-6 | Alpha-BHC | 8.1 | U |
| 319-85-7 | Beta-BHC | 8.1 | U |
| 319-86-8 | Delta-BHC | 8.1 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.1 | U |
| 76-44-8 | Heptachlor | 8.1 | U |
| 309-00-2 | Aldrin | 8.1 | U |
| 1024-57-3 | Heptachlor epoxide | 8.1 | U |
| 959-98-8 | Endosulfan I | 8.1 | U |
| 60-57-1 | Dieldrin | 16 | U |
| 72-55-9 | 4,4'-DDE | 16 | U |
| 72-20-8 | Endrin | 16 | U |
| 33213-65-9 | Endosulfan II | 16 | U |
| 72-54-8 | 4,4'-DDD | 16 | U |
| 1031-07-8 | Endosulfan sulfate | 16 | U |
| 50-29-3 | 4,4'-DDT | 16 | U |
| 72-43-5 | Methoxychlor | 81 | U |
| 53494-70-5 | Endrin ketone | 16 | U |
| 5103-71-9 | alpha-Chlordane | 81 | U |
| 5103-74-2 | gamma-Chlordane | 81 | U |
| 8001-35-2 | Toxaphene | 160 | U |
| 12674-11-2 | Aroclor-1016 | 81 | U |
| 11104-28-2 | Aroclor-1221 | 81 | U |
| 11141-16-5 | Aroclor-1232 | 81 | U |
| 53469-21-9 | Aroclor-1242 | 81 | U |
| 12672-29-6 | Aroclor-1248 | 81 | U |
| 11097-69-1 | Aroclor-1254 | 160 | U |
| 11096-82-5 | Aroclor-1260 | 160 | U |

12/16/91

9613403.2171

*FROM THE DESK OF:* **DORIS E. AYRES**
**SAMPLE & DATA MANAGEMENT**
**373-0480/H4-14**

**TO:** File 9111L354 **DATE:** August 2, 1995

**SUBJECT: MISSING PESTICIDE DATA**

While preparing package 9111L354 for transmittal to Records Holding it was discovered that the Pesticide portion of the package had been resubmitted to WHC by the Roy F. Weston Laboratory. The original resubmittal was missing from the data package. A copy of the resubmitted pesticide portion was made from the information contained in the case file purge and inserted into the record copy.

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

RFW Batch Number: 9111L354 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 01/31/92 16:41 Page: 1

| | Cust ID: | BO15L7 | BO15L7 | BO15L7 | BO15L7 | BO15L7 | PBLK |
|---|---|---|---|---|---|---|---|
| Sample Information | RFW#: | 001 | 001 | 001 MS | 001 MS | 001 MSD | 91LE1512-MB1 |
| | Matrix: | SOIL | SOIL | SOIL | SOIL | SOIL | SOIL |
| | D.F.: | 1.00 | 1.00 | 4.00 | 4.00 | 4.00 | 1.00 |
| | Units: | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg | ug/Kg |
| | | | REPREP | | REPREP | REPREP | |
| Surrogate: Di-n-butylchlorendate | | 84 % | 98 % | 65 % | 113 % | 94 % | I % |
| | | fl | fl | fl | fl | fl | fl |
| Alpha-BHC | | 8.1 U | 8.3 U | 34 U | 33 U | 34 U | 8.0 U |
| Beta-BHC | | 8.1 U | 8.3 U | 34 U | 33 U | 34 U | 8.0 U |
| Delta-BHC | | 8.1 U | 8.3 U | 34 U | 33 U | 34 U | 8.0 U |
| gamma-BHC (Lindane) | | 8.1 U | 8.3 U | 60 % | 60 % | 58 % | 8.0 U |
| Heptachlor | | 8.1 U | 8.3 U | 70 % | 72 % | 68 % | 8.0 U |
| Aldrin | | 8.1 U | 8.3 U | 68 % | 75 % | 72 % | 8.0 U |
| Heptachlor epoxide | | 8.1 U | 8.3 U | 34 U | 33 U | 34 U | 8.0 U |
| Endosulfan I | | 8.1 U | 8.3 U | 34 U | 33 U | 34 U | 8.0 U |
| Dieldrin | | 16 U | 17 U | 70 % | 75 % | 72 % | 16 U |
| 4,4'-DDE | | 16 U | 17 U | 68 U | 67 U | 67 U | 16 U |
| Endrin | | 16 U | 17 U | 77 % | 86 % | 87 % | 16 U |
| Endosulfan II | | 16 U | 17 U | 68 U | 67 U | 67 U | 16 U |
| 4,4'-DDD | | 16 U | 17 U | 68 U | 67 U | 67 U | 16 U |
| Endosulfan sulfate | | 16 U | 17 U | 68 U | 67 U | 67 U | 16 U |
| 4,4'-DDT | | 16 U | 17 U | 69 % | 78 % | 73 % | 16 U |
| Methoxychlor | | 81 U | 83 U | 340 U | 330 U | 340 U | 80 U |
| Endrin ketone | | 16 U | 17 U | 68 U | 67 U | 67 U | 16 U |
| alpha-Chlordane | | 81 U | 83 U | 340 U | 330 U | 340 U | 80 U |
| gamma-Chlordane | | 81 U | 83 U | 340 U | 330 U | 340 U | 80 U |
| Toxaphene | | 160 U | 170 U | 680 U | 670 U | 670 U | 160 U |
| Aroclor-1016 | | 81 U | 83 U | 340 U | 330 U | 340 U | 80 U |
| Aroclor-1221 | | 81 U | 83 U | 340 U | 330 U | 340 U | 80 U |
| Aroclor-1232 | | 81 U | 83 U | 340 U | 330 U | 340 U | 80 U |
| Aroclor-1242 | | 81 U | 83 U | 340 U | 330 U | 340 U | 80 U |
| Aroclor-1248 | | 81 U | 83 U | 340 U | 330 U | 340 U | 80 U |
| Aroclor-1254 | | 160 U | 170 U | 680 U | 670 U | 670 U | 160 U |
| Aroclor-1260 | | 160 U | 170 U | 680 U | 670 U | 670 U | 160 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

005

9613401.2172

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

Report Date: 01/31/92 16:41

RFW Batch Number: 9111L354 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Page: 2

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Cust ID: | PBLK BS | | PBLK | | PBLK BS | |
| Sample Information | RFW#: | 91LE1512-MB1 | | 91LE1731-MB1 | | 91LE1731-MB1 | |
| | Matrix: | SOIL | | SOIL | | SOIL | |
| | D.F.: | 4.00 | | 1.00 | | 4.00 | |
| | Units: | ug/Kg | | ug/Kg | | ug/Kg | |
| Surrogate: Di-n-butylchlorendate | | I | % | 97 | % | 56 | % |
| Alpha-BHC | | 32 | U | 8.0 | U | 32 | U |
| Beta-BHC | | 32 | U | 8.0 | U | 32 | U |
| Delta-BHC | | 32 | U | 8.0 | U | 32 | U |
| gamma-BHC (Lindane) | | 95 | % | 8.0 | U | 48 | % |
| Heptachlor | | 75 | % | 8.0 | U | 52 | % |
| Aldrin | | 75 | % | 8.0 | U | 58 | % |
| Heptachlor epoxide | | 32 | U | 8.0 | U | 32 | U |
| Endosulfan I | | 32 | U | 8.0 | U | 32 | U |
| Dieldrin | | 76 | % | 16 | U | 51 | % |
| 4,4'-DDE | | 64 | U | 16 | U | 64 | U |
| Endrin | | 86 | % | 16 | U | 66 | % |
| Endosulfan II | | 64 | U | 16 | U | 64 | U |
| 4,4'-DDD | | 64 | U | 16 | U | 64 | U |
| Endosulfan sulfate | | 64 | U | 16 | U | 64 | U |
| 4,4'-DDT | | 74 | % | 16 | U | 29 | % |
| Methoxychlor | | 320 | U | 80 | U | 320 | U |
| Endrin ketone | | 64 | U | 16 | U | 64 | U |
| alpha-Chlordane | | 320 | U | 80 | U | 320 | U |
| gamma-Chlordane | | 320 | U | 80 | U | 320 | U |
| Toxaphene | | 640 | U | 160 | U | 640 | U |
| Aroclor-1016 | | 320 | U | 80 | U | 320 | U |
| Aroclor-1221 | | 320 | U | 80 | U | 320 | U |
| Aroclor-1232 | | 320 | U | 80 | U | 320 | U |
| Aroclor-1242 | | 320 | U | 80 | U | 320 | U |
| Aroclor-1248 | | 320 | U | 80 | U | 320 | U |
| Aroclor-1254 | | 640 | U | 160 | U | 640 | U |
| Aroclor-1260 | | 640 | U | 160 | U | 640 | 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

9613403.2173 0054

9215403.2174 6A

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD SAMPLES RECEIVED: 11-09-91
RFW #: 9111L354, PEST/PCB
W.O. #: 6168-02-01

NARRATIVE

One (1) soil sample was collected on 11-07-91.

The sample and its associated QC 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 01-16-92.

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

1. Sample B015L7 and its associated matrix spike samples were re-extracted outside of holding times.

2. Linearity and breakdown criteria were met for all compounds except 4,4-DDT on the primary column (RSD of calibration factors exceeded 10%). Quantitation of target compounds was not required.

3. Continuing calibration criteria were met for all compounds on the primary column in standards analyzed prior to sample extracts.

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

5. All surrogate recoveries were within EPA QC limits.

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

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

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

9. Target compounds were not detected in the sample extracts; therefore, a confirmation analysis was not required.

2.3.92.

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

WESTON SM

# GLOSSARY OF PEST/PCB DATA

## DATA QUALIFIERS

U - Indicates that the compounds was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J - Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E - Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

I - Interference.

## ABBREVIATIONS

BS - Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD - Indicates blank spike duplicate.

MS - Indicates matrix spike.

MSD - Indicates matrix spike duplicate.

DL - Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA - Not applicable.

DF - Dilution factor.

NR - Not required.

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9613903.2176

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BO15L7RE

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9111L354-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: 01159209.21

Level: (low/med) LOW Date Received: 11/09/91

% Moisture: not dec. 5 dec. Date Extracted: 12/18/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/92

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.00

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

| CAS NO. | COMPOUND | | |
|---|---|---|---|
| 319-84-6 | Alpha-BHC | 8.3 | U |
| 319-85-7 | Beta-BHC | 8.3 | U |
| 319-86-8 | Delta-BHC | 8.3 | U |
| 58-89-9 | gamma-BHC (Lindane) | 8.3 | U |
| 76-44-8 | Heptachlor | 8.3 | U |
| 309-00-2 | Aldrin | 8.3 | U |
| 1024-57-3 | Heptachlor epoxide | 8.3 | U |
| 959-98-8 | Endosulfan I | 8.3 | U |
| 60-57-1 | Dieldrin | 17 | U |
| 72-55-9 | 4,4'-DDE | 17 | U |
| 72-20-8 | Endrin | 17 | U |
| 33213-65-9 | Endosulfan II | 17 | U |
| 72-54-8 | 4,4'-DDD | 17 | U |
| 1031-07-8 | Endosulfan sulfate | 17 | U |
| 50-29-3 | 4,4'-DDT | 17 | U |
| 72-43-5 | Methoxychlor | 83 | U |
| 53494-70-5 | Endrin ketone | 17 | U |
| 5103-71-9 | alpha-Chlordane | 83 | U |
| 5103-74-2 | gamma-Chlordane | 83 | U |
| 8001-35-2 | Toxaphene | 170 | U |
| 12674-11-2 | Aroclor-1016 | 83 | U |
| 11104-28-2 | Aroclor-1221 | 83 | U |
| 11141-16-5 | Aroclor-1232 | 83 | U |
| 53469-21-9 | Aroclor-1242 | 83 | U |
| 12672-29-6 | Aroclor-1248 | 83 | U |
| 11097-69-1 | Aroclor-1254 | 170 | U |
| 11096-82-5 | Aroclor-1260 | 170 | U |

DG 1-24-92

9615403.2177

**ROY F. WESTON, INC.**
**Lionville Laboratory**

**CLIENT:** WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 11-09-91
**RFW #:** 9111L354
**W.O. #:** 6168-02-01-0000

## 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 recoveries were within the 75-125% guidance limits. 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).

12.09.91.

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

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ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 12/05/91

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

WESTON BATCH #: 9111L354

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT |
|---|---|---|---|---|---|---|
| -001 | BO15L7 | % Solids | 95.4 | | % | 0.10 |
| | | Nitrate by IC | 73.7 | | MG/KG | 1.3 |
| | | Cyanide, Total | 1.0 | u | MG/KG | 1.0 |
| | | Phosphate by IC | 1.6 | | MG/KG | 1.3 |
| | | Sulfate by IC | 28.5 | | MG/KG | 1.3 |
| | | Nitrate Nitrite | 17.8 | | MG-N/KG | 5.2 |
| | | Total Organic Carbon | 0.57 | | % | 0.10 |

Roy F. Weston, INC.
Lionville Laboratory

**CLIENT:** WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 11/09/91
**RFW #:** 9111L354
**W.O. #:** 6168-02-01

## METALS NARRATIVE

The set of samples consisted of one (1) soil sample collected on 11/07/91.

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 Pb. 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 Ca. All corresponding samples were flagged with an "*" according to CLP protocol.

8. Pb 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 IC2 are included in this package.

13. Cyanide for RFW batch #9111L354 was analyzed out of hold.

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

1.09.92
Date

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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 #: 9111L354

| SAMPLE | SITE ID | ANALYTE | RESULT | | UNITS | REPORTING LIMIT |
|---|---|---|---|---|---|---|
| -001 | B015L7 | Silver, Total | 2.1 | u | MG/KG | 2.1 |
| | | Aluminum, Total | 5520 | | MG/KG | 41.8 |
| | | Arsenic, Total | 2.0 | | MG/KG | 2.0 |
| | | Barium, Total | 68.8 | | MG/KG | 41.8 |
| | | Beryllium, Total | 1.0 | u | MG/KG | 1.0 |
| | | Bismuth, Total | 32.0 | | MG/KG | 31.4 |
| | | Calcium, Total | 7010 | | MG/KG | 1040 |
| | | Cadmium, Total | 1.0 | u | MG/KG | 1.0 |
| | | Cobalt, Total | 10.4 | u | MG/KG | 10.4 |
| | | Chromium, Total | 6.7 | | MG/KG | 2.1 |
| | | Copper, Total | 11.9 | | MG/KG | 5.2 |
| | | Iron, Total | 15900 | | MG/KG | 20.9 |
| | | Mercury, Total | 0.10 | u | MG/KG | 0.10 |
| | | Potassium, Total | 1200 | | MG/KG | 1040 |
| | | Magnesium, Total | 3800 | | MG/KG | 1040 |
| | | Manganese, Total | 264 | | MG/KG | 3.1 |
| | | Sodium, Total | 1040 | u | MG/KG | 1040 |
| | | Nickel, Total | 8.4 | u | MG/KG | 8.4 |
| | | Lead, Total | 4.9 | | MG/KG | 0.60 |
| | | Antimony, Total | 12.5 | u | MG/KG | 12.5 |
| | | Selenium, Total | 1.0 | u | MG/KG | 1.0 |
| | | Thallium, Total | 2.0 | u | MG/KG | 2.0 |
| | | Vanadium, Total | 29.4 | | MG/KG | 10.4 |
| | | Zinc, Total | 31.9 | | MG/KG | 4.2 |

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

B015L7

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

Lab Code: WESTON Case No.: WEST SAS No.: SDG No.: CLP354

Matrix (soil/water): SOIL Lab Sample ID: 911135401

Level (low/med): LOW Date Received: 11/09/91

% Solids: 95.4

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

| CAS No. | Analyte | Concentration | C | Q | M |
|---|---|---|---|---|---|
| 7429-90-5 | Aluminum | 5520.00 | | | P |
| 7440-36-0 | Antimony | 4.18 | U | | P |
| 7440-38-2 | Arsenic | 2.00 | B | | F |
| 7440-39-3 | Barium | 68.80 | | | P |
| 7440-41-7 | Beryllium | .42 | B | | P |
| 7440-43-9 | Cadmium | .63 | U | | P |
| 7440-70-2 | Calcium | 7010.00 | | * | P |
| 7440-47-3 | Chromium | 6.70 | | | P |
| 7440-48-4 | Cobalt | 8.80 | B | | P |
| 7440-50-8 | Copper | 11.90 | | | P |
| 7439-89-6 | Iron | 15900.00 | | | P |
| 7439-92-1 | Lead | 4.90 | | SN | F |
| 7439-95-4 | Magnesium | 3800.00 | | | P |
| 7439-96-5 | Manganese | 264.00 | | | P |
| 7439-97-6 | Mercury | .05 | U | | CV |
| 7440-02-0 | Nickel | 7.30 | B | | P |
| 7440-09-7 | Potassium | 1200.00 | | | P |
| 7782-49-2 | Selenium | .40 | U | W | F |
| 7440-22-4 | Silver | 2.10 | U | | P |
| 7440-23-5 | Sodium | 215.00 | B | | P |
| 7440-28-0 | Thallium | .40 | U | W | F |
| 7440-62-2 | Vanadium | 29.40 | | | P |
| 7440-66-6 | Zinc | 31.90 | | | P |
| | Cyanide | 1.05 | U | | C |

Color Before: BROWN Clarity Before: Texture: FINE

Color After: BROWN Clarity After: Artifacts:

Comments: