START 9613443.2072 0000007 148

9105L649-WES-079

0044177

WESTON

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 05-17-91
RFW #: 9105L649, GC/MS VOLATILE
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of one (1) water sample and two (2) soil samples collected on 05-15,16-91.

The samples were analyzed according to criteria set forth in CLP SOW 2/88 (rev 5/89) for TCL Volatile target compounds on 05-21,22-91.

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 not detected in these samples.

2. All surrogate recoveries were within EPA QC limits.

3. Matrix spike and spike duplicate samples are associated with RFW lots 9105L573 and 9105L597.

4. The laboratory blanks contained the common contaminants methylene chloride and acetone at levels less than 2x the CRQL.

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

7.12.91.

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

Date

Custody Transfer Record/Lab Work Request

WESTON

2 of 2

WESTON Analytics Use Only
9105L649

Project #: ~~91-019~~ WS-Hanford

Client: Westinghouse Hanford Co.

Work Order: ~~EE3E5~~ ~~W. S. Thompson~~ 6168-02-01

Date Rec'd.: 5/17/91 Date Due: ~~As specified~~ 6/21/91 in SOW

RFW Contact: Peg Beaty

Client Contact/Phone: W.S.Thompson (509)376-2153

Refrigerator#	poly cooler							
#/Type Container	GLASS							
Volume	125ml	1950 ml	1000 ml					
Preservative	← 4°C →							
ANALYSES REQUESTED	1	2	3	TOC	Metal	CN	Anions	
	0L024H	0L008H GLASS	ISOB	DCT	HSL, BI	ICIDI	See below	

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	1	2	3	TOC	Metal	CN	Anions	
002	BOOX36	Soil	5/16/91	X	X	X					
3	BOOX46	+	5/16/91	X	X	X					

Anions = ICCL, ICSO4, ICNO3, ICNO2, ICFL, ICPO4

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

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

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	Emery	PBeaty	4/17/91	438 pm					
% Sol	Jones		5/23						
		SEE WHC C OF C							

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

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:

9613443.2073

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

7-115

Custody Transfer Record/Lab Work Request

WESTON

1 of 2

WESTON Analytics Use Only
91052649

Project #: 91-019

Client: Westinghouse Hanford Co.

Work Order: EE3E5 W. S. Thompson

Date Rec'd. 5/17/91 Date Due ~~As specified~~ in SOW

RFW Contact: Peg Beaty

Client Contact/Phone: W.S.Thompson(509)376-2153

Refrigerator#	SML #80 poly							
#/Type Container								
Volume	3x40 ml	4000 ml	1000ml	1000 ml	2x250 ml. ml.	250ml	1.250 ml.	2x4 liters
Preservative			NaOH	HNO3	HNO3	H2SO4		HNO3
ANALYSES REQUESTED	1	2	3	4	5	6	7	8

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	1	2	3	4	5	6	7	8
001	BOOK 45 water	5/15/91	5/15/91	✓	✓	✓	✓	✓	✓	✓	✓

Revision #1 5/28/91 100# reflected

Anion = ICCl, ICSO4, ICPO4, ICNO3, ICNO2, ICF

ANALYSES REQUESTED

1. VOA (CLP)
2. Semi-VOA, PCB's, Pesticides (CLP)
3. Cyanide (CLP)
4. ICP Metals, AA metals, Bismuth (CLP)
5. IC Anions (300.0)
6. NO2/NO3
7. Tritium
8. Total alpha/beta, GEA, Tc-99, Sr-90, Cs-137, Co-60, Pu-238, Pu-239/240, Ru-106, Total Uranium

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.

Item/Reason	Relinquished by	Received by	Date	Time
	Emery	[illegible]	5/17/91	4:30 pm
001	Baymard	[illegible]	5/21/91	9:05
Res/AVA	[illegible]	[illegible]	5/21	
001-003	[illegible]	[illegible]	5/21/91	10:00
AVA Post (2)	[illegible]	[illegible]	5/22/91	1:30
[illegible]	[illegible]	[illegible]	5/22/91	10:30

Item/Reason	Relinquished by	Received by	Date	Time
[illegible]	[illegible]	[illegible]	5/22/91	4:00
N3N2	[illegible]	[illegible]	5/28/91	11:45
N3N2 store	[illegible]	[illegible]	5/28/91	3:30
VOA soil	[illegible]		5/30	3:30

WESTON Analytics Use Only

Samples Were:
1 Shipped or Hand-Delivered
NOTES:

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: IC NO2 NO3 ICP

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

Volatiles by GC/MS, HSL List

Report Date: 07/02/91 16:21

RFW Batch Number: 9105L649 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Page: 1a

	Cust ID:	BOOX45		BOOX36		BOOX46		VBLK		VBLK	
Sample Information	RFW#:	001		002		003		91LVQ014-MB1		91LVY102-MB1	
	Matrix:	WATER		SOIL		SOIL		WATER		SOIL	
	D.F.:	1.00		0.980		0.980		1.00		1.00	
	Units:	ug/L		ug/Kg		ug/Kg		ug/L		ug/Kg	
Surrogate Recovery	Toluene-d8	102	%	96	%	104	%	103	%	100	%
	Bromofluorobenzene	106	%	93	%	100	%	104	%	99	%
	1,2-Dichloroethane-d4	92	%	77	%	79	%	92	%	89	%
Chloromethane		10	U	10	U	10	U	10	U	10	U
Bromomethane		10	U	10	U	10	U	10	U	10	U
Vinyl Chloride		10	U	10	U	10	U	10	U	10	U
Chloroethane		10	U	10	U	10	U	10	U	10	U
Methylene Chloride		2	JB	34	B	35	B	1	J	8	
Acetone		7	JB	23	B	40	B	4	J	6	J
Carbon Disulfide		5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene		5	U	5	U	5	U	5	U	5	U
1,1-Dichloroethane		5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethene (total)		5	U	5	U	5	U	5	U	5	U
Chloroform		5	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane		5	U	5	U	5	U	5	U	5	U
2-Butanone		10	U	10	U	10	U	10	U	10	U
1,1,1-Trichloroethane		5	U	5	U	5	U	5	U	5	U
Carbon Tetrachloride		5	U	5	U	5	U	5	U	5	U
Vinyl Acetate		10	U	10	U	10	U	10	U	10	U
Bromodichloromethane		5	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane		5	U	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U
Trichloroethene		5	U	5	U	5	U	5	U	5	U
Dibromochloromethane		5	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane		5	U	5	U	5	U	5	U	5	U
Benzene		5	U	5	U	5	U	5	U	5	U
Trans-1,3-Dichloropropene		5	U	5	U	5	U	5	U	5	U
Bromoform		5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone		10	U	10	U	10	U	10	U	10	U
2-Hexanone		10	U	10	U	10	U	10	U	10	U
Tetrachloroethene		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

*= Outside of EPA CLP QC limits.

0000007

9613443.2075

Cust ID:	BOOX45	BOOX36	BOOX46	VBLK	VBLK
RFW#:	001	002	003	91LVQ014-MB1	91LVY102-MB1
Toluene	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U

*= Outside of EPA CLP QC limits.

9613943.2076

000005

VOLATILE ORGANICS ANALYSIS SHEET

000002 0 CLIENT SAMPLE NO.

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9105L649-001

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

Lab File ID: 0052111

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. _____

Date Analyzed: 05/21/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

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	2	JB
67-64-1	Acetone	7	JB
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

9614943.2028

000002

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9105L649-001

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

Lab File ID: 0052111

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. _____

Date Analyzed: 05/21/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

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

FORM 1 VOA-TIC 12/88 Rev.

1A
VOLATILE ORGANICS ANALYSIS SHEET

0000029 CLIENT SAMPLE NO.

BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-002

Sample wt/vol: 5.10 (g/mL) G Lab File ID: Y052204

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 2 Date Analyzed: 05/22/91

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	34	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	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

9613443.2080

000003

CLIENT SAMPLE NO.

BOOX36

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-002

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

Lab File ID: Y052204

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 2

Date Analyzed: 05/22/91

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.				

9613443.2081

0000037

1A
VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-003

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

Lab File ID: Y052205

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 2

Date Analyzed: 05/22/91

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	35	B
67-64-1	Acetone	40	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

9613443.2082

0000038

CLIENT SAMPLE NO.

BOOX46

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-003

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

Lab File ID: Y052205

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 2

Date Analyzed: 05/22/91

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: 9105L649 | Client: WESTINGHOUSE HANFORD | Work Order: 6168-02-01-0000 | Report Date: 07/10/91 16:50 | Page: 1a

	Cust ID:	BOOX45		BOOX36		BOOX46		SBLK		SBLK RE		SBLK BS	
Sample Information	RFW#:	001		002		003		91LE0651-MB1		91LE0651-MB1		91LE0651-MB1	
	Matrix:	WATER		SOIL		SOIL		WATER		WATER		WATER	
	D.F.:	1.00		1.11		1.11		1.00		1.00		1.00	
	Units:	ug/L		ug/Kg		ug/Kg		ug/L		ug/L		ug/L	
Surrogate Recovery	Nitrobenzene-d5	82	%	90	%	29	%	61	%	64	%	60	%
	2-Fluorobiphenyl	80	%	91	%	30	%	66	%	69	%	61	%
	p-Terphenyl-d14	86	%	92	%	31	%	87	%	100	%	73	%
	Phenol-d5	37	%	108	%	37	%	23	%	23	%	31	%
	2-Fluorophenol	58	%	104	%	38	%	33	%	35	%	48	%
	2,4,6-Tribromophenol	59	%	74	%	33	%	20	%	20	%	63	%
			fl		fl		fl		fl		fl		fl
Phenol		10	U	370	U	370	U	10	U	10	U	30	%
bis(2-Chloroethyl)ether		10	U	370	U	370	U	10	U	10	U	10	U
2-Chlorophenol		10	U	370	U	370	U	10	U	10	U	68	%
1,3-Dichlorobenzene		10	U	370	U	370	U	10	U	10	U	10	U
1,4-Dichlorobenzene		10	U	370	U	370	U	10	U	10	U	50	%
Benzyl alcohol		10	U	370	U	370	U	10	U	10	U	10	U
1,2-Dichlorobenzene		10	U	370	U	370	U	10	U	10	U	10	U
2-Methylphenol		10	U	370	U	370	U	10	U	10	U	10	U
bis(2-Chloroisopropyl)ether		10	U	370	U	370	U	10	U	10	U	10	U
4-Methylphenol		10	U	370	U	370	U	10	U	10	U	10	U
N-Nitroso-Di-n-propylamine		10	U	370	U	370	U	10	U	10	U	54	%
Hexachloroethane		10	U	370	U	370	U	10	U	10	U	10	U
Nitrobenzene		10	U	370	U	370	U	10	U	10	U	10	U
Isophorone		10	U	370	U	370	U	10	U	10	U	10	U
2-Nitrophenol		10	U	370	U	370	U	10	U	10	U	10	U
2,4-Dimethylphenol		10	U	370	U	370	U	10	U	10	U	10	U
Benzoic acid		50	U	1900	U	1900	U	50	U	50	U	50	U
bis(2-Chloroethoxy)methane		10	U	370	U	370	U	10	U	10	U	10	U
2,4-Dichlorophenol		10	U	370	U	370	U	10	U	10	U	10	U
1,2,4-Trichlorobenzene		10	U	370	U	370	U	10	U	10	U	59	%
Naphthalene		10	U	370	U	370	U	10	U	10	U	10	U
4-Chloroaniline		10	U	370	U	370	U	10	U	10	U	10	U
Hexachlorobutadiene		10	U	370	U	370	U	10	U	10	U	10	U
4-Chloro-3-methylphenol		10	U	370	U	370	U	10	U	10	U	62	%
2-Methylnaphthalene		10	U	370	U	370	U	10	U	10	U	10	U
Hexachlorocyclopentadiene		10	U	370	U	370	U	10	U	10	U	10	U

*= Outside of EPA CLP QC limits.

000004
9613443.2083

Cust ID:	BOOX45		BOOX36		BOOX46		SBLK		SBLK RE		SBLK BS	
RFW#:	001		002		003		91LE0651-MB1		91LE0651-MB1		91LE0651-MB1	
2,4,6-Trichlorophenol	10	U	370	U	370	U	10	U	10	U	10	U
2,4,5-Trichlorophenol	50	U	1900	U	1900	U	50	U	50	U	50	U
2-Chloronaphthalene	10	U	370	U	370	U	10	U	10	U	10	U
2-Nitroaniline	50	U	1900	U	1900	U	50	U	50	U	50	U
Dimethylphthalate	10	U	370	U	370	U	10	U	10	U	10	U
Acenaphthylene	10	U	370	U	370	U	10	U	10	U	10	U
2,6-Dinitrotoluene	10	U	370	U	370	U	10	U	10	U	10	U
3-Nitroaniline	50	U	1900	U	1900	U	50	U	50	U	50	U
Acenaphthene	10	U	370	U	370	U	10	U	10	U	67	%
2,4-Dinitrophenol	50	U	1900	U	1900	U	50	U	50	U	50	U
4-Nitrophenol	50	U	1900	U	1900	U	50	U	50	U	16	%
Dibenzofuran	10	U	370	U	370	U	10	U	10	U	10	U
2,4-Dinitrotoluene	10	U	370	U	370	U	10	U	10	U	66	%
Diethylphthalate	10	U	370	U	370	U	10	U	10	U	10	U
4-Chlorophenyl-phenylether	10	U	370	U	370	U	10	U	10	U	10	U
Fluorene	10	U	370	U	370	U	10	U	10	U	10	U
4-Nitroaniline	50	U	1900	U	1900	U	50	U	50	U	50	U
4,6-Dinitro-2-methylphenol	50	U	1900	U	1900	U	50	U	50	U	50	U
N-Nitrosodiphenylamine (1)	10	U	370	U	370	U	10	U	10	U	10	U
4-Bromophenyl-phenylether	10	U	370	U	370	U	10	U	10	U	10	U
Hexachlorobenzene	10	U	370	U	370	U	10	U	10	U	10	U
Pentachlorophenol	50	U	1900	U	1900	U	50	U	50	U	36	%
Phenanthrene	10	U	370	U	370	U	10	U	10	U	10	U
Anthracene	10	U	370	U	370	U	10	U	10	U	10	U
Di-n-Butylphthalate	10	U	200	JB	110	JB	10	U	1	J	10	U
Fluoranthene	10	U	370	U	370	U	10	U	10	U	10	U
Pyrene	10	U	370	U	370	U	10	U	10	U	67	%
Butylbenzylphthalate	10	U	370	U	370	U	10	U	10	U	10	U
3,3'-Dichlorobenzidine	20	U	750	U	750	U	20	U	20	U	20	U
Benzo(a)anthracene	10	U	370	U	370	U	10	U	10	U	10	U
Chrysene	10	U	370	U	370	U	10	U	10	U	10	U
bis(2-Ethylhexyl)phthalate	10	U	370	U	370	U	10	U	10	U	10	U
Di-n-Octyl phthalate	10	U	370	U	370	U	10	U	10	U	10	U
Benzo(b)fluoranthene	10	U	370	U	370	U	10	U	10	U	10	U
Benzo(k)fluoranthene	10	U	370	U	370	U	10	U	10	U	10	U
Benzo(a)pyrene	10	U	370	U	370	U	10	U	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	U	370	U	370	U	10	U	10	U	10	U
Dibenzo(a,h)anthracene	10	U	370	U	370	U	10	U	10	U	10	U
Benzo(g,h,i)perylene	10	U	370	U	370	U	10	U	10	U	10	U

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

96134343.2084

9613443.2085 8 A

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 05-17-91
RFW #: 9105L649, SEMIVOLATILE
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of one (1) water sample and two (2) soil samples collected on 05-15,16-91.

The samples were extracted on 05-21,22-91 and analyzed according to criteria set forth in CLP SOW 02/88 (Rev. 05/89) for TCL Semivolatile target compounds on 06-23,24-91.

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. Two (2) of thirty-three (33) blank spike recoveries was outside EPA QC limits.

4. The laboratory blanks contained the common contaminant di-n-butylphthalate at levels less than the CRQL.

5. Internal standard areas were outside QC limits for the blank 91LE0651-MB1. This blank was re-analyzed on 06-24-91 and reported. Also, its associated blank spike and spike duplicate analyses fulfilled its re-analysis requirement.

7.15.91.

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

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9105L649-001

Sample wt/vol: 980 (g/mL) ML

Lab File ID: S062314

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. _____ dec.

Date Extracted: 05/21/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

9613443.2087 1C

0000020

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9105L649-001

Sample wt/vol: 980 (g/mL) ML

Lab File ID: S062314

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. _____ dec.

Date Extracted: 05/21/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-Octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

9613443.2088

0000021

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9105L649-001

Sample wt/vol: 980 (g/mL) ML

Lab File ID: S062314

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. _____ dec.

Date Extracted: 05/21/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

9613443.2089 0000027

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-002

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S062307

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 3 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic acid	1900	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

9413443.2090

0000028

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-002

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

Lab File ID: S062307

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 3 dec.

Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) Y pH: 6.7

Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	200	JB
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-Octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

9613443.2091 1F

0000029

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-002

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

Lab File ID: S062307

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 3 dec.

Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) Y pH: 6.7

Dilution Factor: 1.11

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.40	600	ABJ
2.	UNKNOWN	4.70	300	J

9613443.2092 000004

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-003

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S062414

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 2 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/24/91

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic acid	1900	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

9613443.2093 0000042

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-003

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S062414

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 2 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/24/91

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 1.11

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	110	JB
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-Octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

9413443.2094

0 0 0 0 0 4 3

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-003

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

Lab File ID: S062414

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/24/91

GPC Cleanup: (Y/N) N pH: 6.8

Dilution Factor: 1.10

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	4.43	200	ABJ

RADIOACTIVE SAMPLE EVALUATION

9615445.2049

I. Sample Custodian: C. PIPER RFW Batch no.: _____ Date: 5-20-[illegible]

Package received from:

Client: [illegible] Location: [illegible]

Mode of transport: ☐ UPS ☐ Fed Ex ☒ Other [illegible]

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

Transport Index: _____ Security Seal: ☒ Yes ☐ No

II. Surveys:

Gamma instrument make, model, serial no.: LUDLUM MODEL 19 [illegible]

Date of last calibration: [illegible] Calibr. next due: [illegible]

Source response check:

Source type and i.d. no.: [illegible] 8644-2 Response: [illegible] microR/hr

Package survey: (microR/hr) max. reading: _____ Background: [illegible]

Alpha instrument make, model, serial no.: LUDLUM MODEL 43-5 [illegible]

Calibration date: [illegible] Efficiency factor: [illegible] dpm/cpm

Source response check:

Source type and i.d. no.: [illegible] Response: [illegible] cpm

III. Sample Container Measurements: Gamma Background [illegible]

Sample ID	Form (liq or sol)	RFW ID	Gamma microR/hr	Alpha cpm	Alpha eff. fact	Alpha dpm	nCi/g	Mass (g)	nCi
B00XL8	[illegible]		–	0			0		
B00XH7			"	0			0.0007		
B00XH1			"	0			0.0007		
B00XJ3			–	0			0.0021		
B00XH4			"	0			0		
B00XT0			"	0			0.0415	425.8	[illegible] *
B00X45	—		"	0			0.0007		
B00X36	SOIL		"	0			0		
B00X46	—		"	0			0		

Total Activity: _____ $\times 10^{-6}$ mCi

RFW 21-21-013/A-8/87

*RADIOACTIVE 5-20-91 10pm

BEST AVAILABLE COPY

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

RFW Batch Number: 9105L649 Client: WESTINGHOUSE HANFORD Work Order: 6168-02-01-0000 Report Date: 07/10/91 19:33 Page: 1

Cust ID:	BOOX45		BOOX36		BOOX46		PBLK		PBLK BS		PBLK	
Sample Information RFW#:	001		002		003		91LE0656-MB1		91LE0656-MB1		91LE0666-MB2	
Matrix:	WATER		SOIL		SOIL		WATER		WATER		SOIL	
D.F.:	1.00		5.00		1.00		1.00		2.00		1.00	
Units:	ug/L		ug/Kg		ug/Kg		ug/L		ug/L		ug/Kg	
Surrogate: Di-n-butylchlorendate	110	%	91	%	37	%	105	%	110	%	100	%
		fl		fl		fl		fl		fl		fl
Alpha-BHC	0.050	U	40	U	8.1	U	0.050	U	0.10	U	8.0	U
Beta-BHC	0.050	U	40	U	8.1	U	0.050	U	0.10	U	8.0	U
Delta-BHC	0.050	U	40	U	8.1	U	0.050	U	0.10	U	8.0	U
gamma-BHC (Lindane)	0.050	U	40	U	8.1	U	0.050	U	I	%	8.0	U
Heptachlor	0.050	U	40	U	8.1	U	0.050	U	55	%	8.0	U
Aldrin	0.050	U	40	U	8.1	U	0.050	U	85	%	8.0	U
Heptachlor epoxide	0.050	U	40	U	8.1	U	0.050	U	0.10	U	8.0	U
Endosulfan I	0.050	U	40	U	8.1	U	0.050	U	0.10	U	8.0	U
Dieldrin	0.10	U	81	U	16	U	0.10	U	108	%	16	U
4,4'-DDE	0.10	U	81	U	16	U	0.10	U	0.20	U	16	U
Endrin	0.10	U	81	U	16	U	0.10	U	114	%	16	U
Endosulfan II	0.10	U	81	U	16	U	0.10	U	0.20	U	16	U
4,4'-DDD	0.10	U	81	U	16	U	0.10	U	0.20	U	16	U
Endosulfan sulfate	0.10	U	81	U	16	U	0.10	U	0.20	U	16	U
4,4'-DDT	0.10	U	81	U	16	U	0.10	U	144 *	%	16	U
Methoxychlor	0.50	U	400	U	81	U	0.50	U	1.0	U	80	U
Endrin ketone	0.10	U	81	U	16	U	0.10	U	0.20	U	16	U
alpha-Chlordane	0.50	U	400	U	81	U	0.50	U	1.0	U	80	U
gamma-Chlordane	0.50	U	400	U	81	U	0.50	U	1.0	U	80	U
Toxaphene	1.0	U	810	U	160	U	1.0	U	2.0	U	160	U
Aroclor-1016	0.50	U	400	U	81	U	0.50	U	1.0	U	80	U
Aroclor-1221	0.50	U	400	U	81	U	0.50	U	1.0	U	80	U
Aroclor-1232	0.50	U	400	U	81	U	0.50	U	1.0	U	80	U
Aroclor-1242	0.50	U	400	U	81	U	0.50	U	1.0	U	80	U
Aroclor-1248	0.50	U	400	U	81	U	0.50	U	1.0	U	80	U
Aroclor-1254	1.0	U	810	U	160	U	1.0	U	2.0	U	160	U
Aroclor-1260	1.0	U	810	U	160	U	1.0	U	2.0	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

000006
9613HCF2096

9613443.2097 8A

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 05-17-91
RFW #: 9105L649, PEST/PCB
W.O. #: 6168-02-01

NARRATIVE

The set of samples consisted of two (2) soil samples and one (1) water sample collected on 05-15,16-91.

The samples were extracted on 05-21,22-91 and analyzed according to criteria set forth in the Contract Laboratory Program for Pesticide and PCB target compounds on 06-24,25-91.

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 for all compounds except aldrin on the primary column (RSD of calibration factors exceeded 10%). Quantitation of target compounds was not required.

2. For continuing calibration standards analyzed prior to the sample extracts, the 15% criteria for calibration factors was exceeded for target compounds methoxychlor and 4,4'-DDT on 06-25-91 at 13:15.

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

4. All surrogate recoveries were within EPA QC limits.

5. Two (2) of eleven (11) obtainable blank spike recoveries were outside the EPA QC limits. The blank spike recoveries for the following compounds were outside the EPA QC limits:

Sample ID	% Recovery	Limit
4,4'-DDT	144	127
Endrin	146	139

These high blank spike recoveries should not impact the data since target compounds were not identified in the accompanying sample extracts.

WESTON

6. The blank spike samples required dilutions to maintain the pesticide concentrations within the linear range of the instrument.

7. Sample B00X36 required a five-fold dilution because it contained high levels of non-target compounds.

7.29.91.

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

Date

9613HH5.2099 ID

0000018 CLIENT SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS SHEET

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9105L649-001

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 06249103.27

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. _____ dec.

Date Extracted: 05/21/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 06/25/91

GPC Cleanup: (Y/N) N pH: 7.0

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.050	U
319-85-7	Beta-BHC	0.050	U
319-86-8	Delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

JER 7/24/91

9613447 2100

0000023 CLIENT SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS SHEET

BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-002

Sample wt/vol: 30.7 (g/mL) G Lab File ID: 06249109.22

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 3 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/25/91

GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	40	U
319-85-7	Beta-BHC	40	U
319-86-8	Delta-BHC	40	U
58-89-9	gamma-BHC (Lindane)	40	U
76-44-8	Heptachlor	40	U
309-00-2	Aldrin	40	U
1024-57-3	Heptachlor epoxide	40	U
959-98-8	Endosulfan I	40	U
60-57-1	Dieldrin	81	U
72-55-9	4,4'-DDE	81	U
72-20-8	Endrin	81	U
33213-65-9	Endosulfan II	81	U
72-54-8	4,4'-DDD	81	U
1031-07-8	Endosulfan sulfate	81	U
50-29-3	4,4'-DDT	81	U
72-43-5	Methoxychlor	400	U
53494-70-5	Endrin ketone	81	U
5103-71-9	alpha-Chlordane	400	U
5103-74-2	gamma-Chlordane	400	U
8001-35-2	Toxaphene	810	U
12674-11-2	Aroclor-1016	400	U
11104-28-2	Aroclor-1221	400	U
11141-16-5	Aroclor-1232	400	U
53469-21-9	Aroclor-1242	400	U
12672-29-6	Aroclor-1248	400	U
11097-69-1	Aroclor-1254	810	U
11096-82-5	Aroclor-1260	810	U

DCR 7/24/91

9613445.2101

PESTICIDE ORGANICS ANALYSIS SHEET

0000028 CLIENT SAMPLE NO.

BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-003

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

Lab File ID: 06249109.27

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/25/91

GPC Cleanup: (Y/N) Y pH: 6.8

Dilution Factor: 1.00

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

DER 7/24/91

9613443.2102

0000001

ROY F. WESTON, INC.
Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD **SAMPLES RECEIVED:** 05-17-91
RFW #: 9105L649
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. Sample holding times as required by 40CFR136 were met for water samples with the exception of nitrite, nitrate and phosphate.

2. All preparation blanks were analyzed 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. 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 Hayford 6.20.91

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

AUG 1991
RECEIVED
DATA RECEIPT

pas.21\15-649

9613443.2103

0000003

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 06/18/91

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

WESTON BATCH #: 9105L649

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BOOX45	Chloride by IC	0.25 u	mg/L	0.25
		Fluoride by IC	0.50 u	mg/L	0.50
		Nitrite by IC	0.25 u	mg/L	0.25
		Nitrate by IC	0.25 u	mg/L	0.25
		Cyanide, Total	10.0 u	UG/L	10.0
		Phosphate by IC	0.25 u	mg/L	0.25
		Sulfate by IC	0.25 u	mg/L	0.25
		Nitrate Nitrite	0.86	MG/L	0.10
-002	BOOX36	% Solids	97.8	%	0.10
-003	BOOX46	% Solids	97.9	%	0.10

9613443.2104

9105L649-WES-077

Report To

Westinghouse Hanford Company
Richland, Washington

Data Validation Report
200-BP-1 RI/FS
Data Package: 9105L649-WES-077
SDG No.: CLP649
Analysis Type: Volatiles/Semivolatiles/Pest/PCB/Wet Chemistry

Prepared By

Golder Associates Inc.
Redmond, Washington

Validated by: _____
Susan Winter
Staff Chemist

Reviewed by: _____
Kent Angelos
Associate

April 2, 1992

913-1719

9613443.2105

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LIST OF ATTACHMENTS

1 Glossary of Data Qualifiers
2 Summary of Data Qualifications - Form B-7
3 As-Qualified Data Summary
4 Data Review Supporting Documentation

1. INTRODUCTION

This report presents the results of data validation on case WEST and SDG: CLP649 consisting of one (1) water and two (2) soil samples all for CLP/TCL volatiles, semivolatiles, pesticides and PCBs, CLP/TAL total cyanide, and wet chemistry parameters. Sample identifications, locations and sample dates are provided in the tabular data summary provided in Attachment 3. The samples were analyzed by the Weston - Lionville laboratory using the 2/88 SOW for volatiles, semivolatiles, and pesticides/PCBs. Anions (chloride, fluoride, nitrite, nitrate, phosphate and sulfate), were analyzed by ion chromatography (IC), (EPA, 1984). Nitrate+nitrite-N was analyzed using EPA methods, (EPA, 1979).

Data validation was conducted in accordance with "Westinghouse Hanford Company, Validation of 200-BP-1 Data, Statement of Work, Revision 0, November 1991," (WHC, 1991), including Revision 1, December 1991.

2. DATA QUALITY OBJECTIVES

The data package was complete for all requested analyses and met the data quality objectives of the work plan (DOE, 1989). Data quality objectives for the project specified the use of CLP methods for the TCL volatiles, semivolatiles, pesticides/PCBs and TAL cyanide. Standard methods were used for the analysis of the wet chemistry parameters.

Sample quantitation limits were less than the CRQL specified in the QAPjP (DOE, 1989), with the exception of the analyses for pesticides and PCBs on samples BOOX36 and BOOX46, see Attachment 3 for the reported detection limits. Sample BOOX46 meets the validation requirements of reporting to within five times the CRQL. However, sample BOOX36 was analyzed at a five-fold dilution which also increases the CRQL five times. Hence, this sample also meets the validation requirement.

Sample B00X45 was identified as a field blank. All results are below the detection limit with the exception of nitrate/nitrite-N at a value of 0.28 mg/L.

Samples B00X36 and B00X46 were identified as field duplicates. All results were reported below the detection limits except for tentatively identified compounds (TIC) in the semivolatile fraction. The RPDs for these TICs are 100% for aldol condensate and 200% for an unknown. The RPD for the remaining sample results were not calculated since they were all below the detection limits.

The pesticide/PCB results for all the samples are below the detection limits. However, sample B00X36 was analyzed at a five-fold dilution due to high levels of non-target compounds, whereas sample B00X46 did not require a dilution. Due to this difference in concentration, the detection limits for these two samples are different for the pesticide/PCB fraction.

With the exception of the deficiencies identified in Section 3, the precision and accuracy goals specified in the work plan and the analytical statement of work were met.

3. QUALIFIED DATA

This section presents a summary of the qualifications required based on validation of the subject data package.

3.1 Major Deficiencies

Hexachlorocyclopentadiene data was rejected due to the relative response factor (RRF) in the initial calibration. The RRF in the 20 ng interval was 0.029 which is lower than the required 0.05.

2-Butanone data in samples B00X46, BOOX45 and BOOX35 was rejected due to the response factors being less than 0.05 in the associated initial and continuing calibration standards.

Aldol condensation products were detected in the soil samples and associated method blanks and the results have been rejected in accordance with the validation requirements.

3.2 Minor Deficiencies

The following qualifications were required as a result of the validation. Attachment 2 provides a summary of the samples affected.

3.2.1 Wet Chemistry

- The reported result for nitrate+nitrite-N (0.86 mg/L) was actually the value for the spiked sample. The result for the original sample was 0.28 mg/L.

- The samples for phosphate, nitrate and nitrite were analyzed out of the required 48-hour holding time and the associated results have been qualified as estimated (UJ).

- The percent recovery for nitrate+nitrite-N in the continuing calibration was 72%. This continuing calibration check was not associated with the samples in this SDG and therefore qualification of data was not required.

3.2.2 Semivolatile Organics

- The pages ten through fourteen (10 - 14) were missing out of the semivolatiles package. It appears that these pages concerned surrogate recoveries, matrix spike/matrix spike duplicate (MS/MSD), and blank spike recoveries.

- The semivolatile MS/MSD recoveries for water were calculated by hand during data validation (see Attachment 4). The MSD percent recovery was out of the control limits for 4-nitrophenol. The relative percent difference (RPD) for both 4-nitrophenol and pentachlorophenol, 56 and 72%, respectively, were outside of the control limits.

- The semivolatile surrogate recoveries recorded on the data summary forms were used for checking the recoveries since the surrogate recovery summary form was missing from the package.

- The report forms (Form 1's) for the semivolatile blanks and blank spikes were used along with the associated quantitation report in place of the blank summary report.

- The internal standards chrysene-d12 and perylene-d12 were out of the control limits for the semivolatile soil method blank and the soil blank spike duplicate analyzed on June 23, 1991. These same compounds were out of the control limits for the soil blank rerun and the soil blank spike analyzed on June 24, 1991.

- The percent difference (%D) for the semivolatile surrogate 2,4,6-tribromophenol was out of the control limit for both continuing calibration checks analyzed on June 23 and 24, 1991.

- The soil semivolatile blank spike recovery was used for SDG637 as well as this sample group. This form was copied from data package SDG637 and used for validation in this SDG.

- The relative standard deviation (RSD) in the initial calibration for hexachlorocyclopentadiene, 2,4-dinitrophenol and 4-nitroaniline were out of the control limits with 39.3%, 34.5% and 33.6%, respectively. The data for hexachlorocyclopentadiene has already been rejected due to the low RRF value. The data for 2,4-dinitrophenol and 4-nitroaniline were qualified as estimated (UJ).

- The %D in the continuing calibration for several compounds were out of the control limits (see Attachment 4). The associated results were qualified as estimated (UJ).

- The blank and blank rerun contained di-n-butylphthalate at levels of 1 µg/L and 48 µg/Kg, respectively. The associated samples, B00X36 and B00X46 at levels of 200 µg/Kg and 110 µg/Kg, respectively were qualified as non-detects (U).

- An unknown TIC detected in sample B00X36 has been deemed valid as a result of the validation and qualified as NJ.

3.2.3 Volatile Organics

- The volatile MS/MSD summary form was included in this report, but not analyzed with this SDG and therefore the raw data was not included in this package.

- The initial calibration RSD for chloromethane was 53.4%. The associated samples, B00X36 and B00X46, were qualified as estimated (UJ) for this compound.

- The continuing calibration %D for several volatile compounds were out of the control limits. The associated samples, B00X36 and B00X46, were qualified as estimated for the compounds of concern (J for detects, UJ for non-detects).

- Methylene chloride and acetone were detected in the laboratory method blank at concentrations of 1 and 4 µg/L, respectively. Sample concentrations in the associated sample, B00X46, for these compounds were less than the quantitation limit and therefore were not qualified.

- Methylene chloride and acetone were detected in the soil laboratory method blank at concentrations of 8 and 6 µg/Kg, respectively. Sample concentrations in the associated samples, B00X35 and B00X45, for these compounds were qualified as non-detects (U).

3.2.4 Pesticide/PCB Organics

- The calculations for pesticide/PCBs were performed by using peak height, not peak area.

- A matrix spike was performed in this batch for both matrics. However, a matrix spike duplicate was not performed for either matrix.

- Some of the INDA and INDB %D values were out of the control limits for several compounds. However, the sample results were not associated with these runs and therefore were not qualified.

- The linearity check RSD values were out of the control limits for 4,4'-DDT and aldrin.

- The endrin percent breakdown was above the control limits in four of the several EVALA standard runs. No data qualification was necessary since neither endrin, endrin ketone or endrin aldehyde were detected in the samples.

- The percent recovery (%R) for the blank spike in water for gamma-BHC and 4,4'-DDT were 385 and 144%, respectively.

- The %R value for the blank spike in soil for endrin was 146%.

4. CONCLUSIONS

Sections 1 through 3 present a summary of the data quality for the subject data package. The data as qualified is acceptable for use with the exception of the hexachlorocyclopentadiene and 2-butanone data. The attachments provide supporting documentation and a tabular summary of the qualified data. The original, as-received data package is enclosed for submittal to the project QA record.

5. REFERENCES

EPA 1979, Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.

EPA 1984, Test Method: The Determination of Inorganic Anions in Water by Ion Chromatography - Method 300.0. U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio.

APHA, 1989, Standard Methods for the Examination of Water and Wastewater, 17th Edition, American Public Health Association, Washington, D.C.

DOE, 1989, Remedial Investigation/Feasibility Study Work Plan for the 200-BP-1 Operable Unit Hanford Site, Richland, Washington, DOE/RL 88-32. United States Department of Energy, Richland, Washington.

WHC, 1991, Westinghouse Hanford Company, Validation of 200-BP-1 Data, Statement of Work, Revision A, November 1991. Westinghouse Hanford Company, Richland, Washington.

ATTACHMENT 1

GLOSSARY OF DATA REPORTING QUALIFIERS

B - Indicates the compound or analyte was analyzed for and detected. The value reported is less than the contract required quantitation limit (CRQL) but greater than the instrument detection limit (IDL).

U - Indicates the compound or analyte was analyzed for and not detected. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory. The data are usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected. Due to identified quality control deficiency identified during data validation the value reported may not accurately reflect the sample quantitation limit. The data are usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. The associated value is estimated but the data are usable for decision making processes.

R - Indicates the compound or analyte was analyzed for and due to an identified quality control deficiency the data are unusable.

NJ - Indicates presumptive evidence of a compound at an estimated value.

N - Indicates presumptive evidence of a compound.

9613443.2112

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

9613443.2113

ATTACHMENT 3

AS QUALIFIED DATA SUMMARY

9613443.2114

ATTACHMENT 4

DATA REVIEW SUPPORTING DOCUMENTATION

9613443.2115

ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

9613443.2116

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 649	REVIEWER: [illegible]	DATE: 03/25/92	PAGE 1 OF 3
COMMENTS: Volatile Organics			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Chloromethane	UJ	BOOX 36 & 46	ICV RSD out of control limit
~~Ac~~ 3/25/92			
Acetone	UJ	BOOX36 & 46	CCV %D out of control limit
Carbon Disulfide	UJ		
1,2-DCA	UJ		
2-Butanone	already R		
Trans-13-Dichloropropene	UJ		
Bromoform	UJ		
4-Me-2-pentanone	UJ		
2 Hexanone	UJ		
1,2-Dichloroethane-d4	none		
2-Butanone	R	BOOX36 & 46	RF50 is .035
1,2-Dichloroethane	none	none	CCV %D out of control limit
2-Butanone	R	BOOX45	ICV RFF is .028
2-Butanone	already R		CCV RF50 is .025
$MeCl_2$	U	BOOX45,36,46	Present in blank
Acetone	U		
~~ACE~~ 3/25/92			

3/26/92

9613443.2117

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 449	REVIEWER: [illegible]	DATE: 03/25/92	PAGE 2 OF 3
COMMENTS:	Semivolatile Organics		
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Hexachlorocyclopentadiene	R	All	ICV RF20 = .029, ICV RSD out of control limit.
2,4-Dinitrophenol	UJ	All	ICV RSD out of control limits
4-Nitroaniline	UJ	All	↓
Benzoic Acid	UJ	B00X45, 46	CCV %D out of control limits
Hexachlorocyclopent.	already qual. (R)	↓	↓
3-Nitroaniline	UJ	↓	↓
2,4-Dinitrophenol	↓	↓	↓
4-Nitrophenol	↓	↓	↓
4,6-Dinitro-2-Methyl	↓	↓	↓
Benzo(k)fluoranthene	↓	↓	↓
2,4,6-Tribromophenol	none	none	↓
Benzyl alcohol	UJ	B00X46	CCV %D out of control limits
Benzoic acid	UJ	↓	↓
Hexachlorocyclopent	already qual (R)	↓	↓
3-Nitroaniline	UJ	↓	↓
2,4 Dinitrophenol	↓	↓	↓
4-Nitrophenol	↓	↓	↓
4,6 Dinitro-2-Methyl	↓	↓	↓
3-3'-Dichlorobenzidine	↓	↓	↓
2,4,6-Tribromophenol	none	none	↓
Alkyl Contaminate	R	All	lab contaminant
Di-n-butylphthalate	U	B00X36 & 46	present in blank
Unknown	NJ	B00X36	TIC - estimated

3/26/92

9613443.2118

DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 649	REVIEWER:	DATE: 03/25/92	PAGE 3 OF 3
COMMENTS:	Wet Chemistry / Pesticides / PCB's		
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Phosphate	UJ	B00X45	Analyzed out of hold time
Nitrate	↓	↓	↓
Nitite	↓	↓	↓
Delta BHC	none	none	ccv %D out of control limits
Endo. sulfate	↓	↓	↓
4-4'-DDT			
Methoxychlor			
Endrin			
Alpha-BHC.			
Endrin ketone	↓	↓	↓
Endosulfan I	none	none	RT out of RT window
Endosulfan II	↓	↓	↓
4,4'-DDT			
Methoxychlor	↓	↓	↓
~~Alpha Chlordane~~	~~R~~	~~All~~	~~lab contaminant~~
~~Heptachlor~~	~~NJ~~	~~B00X36~~	
Nitrate/Nitite	none	B00X45	Present in Field Blank

4/1/92

4/1/92

3/26/92

9613443.2119

ATTACHMENT 3

AS QUALIFIED DATA SUMMARY

VOLATILE ORGANIC ANALYSIS, WATER MATRIX, (ug/L)

Project	200-BP-1		
Laboratory	WESTON		
Case	SDG	CLP649	
Sample Number		BOOX45	
Location		FIELD BLANK	
Remarks			
Sample Date		05/15/91	
Analysis Date		05/21/91	
Volatile Organic Compound	CRQL	Result	Q
Chloromethane	10	10	U
Bromomethane	10	10	U
Vinyl Chloride	10	10	U
Chloroethane	10	10	U
Methylene Chloride	10	5	U
Acetone	10	10	U
Carbon Disulfide	10	5	U
1,1-Dichloroethene	10	5	U
1,1-Dichloroethane	10	5	U
1,2-Dichloroethene (total)	10	5	U
Chloroform	10	5	U
1,2-Dichloroethane	10	5	U
2-Butanone	10	10	R
1,1,1-Trichloroethane	10	5	U
Carbon Tetrachloride	10	5	U
Vinyl Acetate	10	10	U
Bromodichloromethane	10	5	U
1,2-Dichloropropane	10	5	U
cis-1,3-Dichloropropene	10	5	U
Trichloroethene	10	5	U
Dibromochloromethane	10	5	U
1,1,2-Trichloroethane	10	5	U
Benzene	10	5	U
trans-1,3-Dichloropropene	10	5	U
Bromoform	10	5	U
4-Methyl-2-pentanone	10	10	U
2-Hexanone	10	10	U
Tetrachloroethene	10	5	U
1,1,2,2-Tetrachloroethane	10	5	U
Toluene	10	5	U
Chlorobenzene	10	5	U
Ethylbenzene	10	5	U
Styrene	10	5	U
Xylene (total)	10	5	U

9613143.2120

VOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project		200-BP-1			
Laboratory		WESTON			
Case	SDG	CLP649			
Sample Number		B00X36		B00X46	
Location		216-B-61A		216-B-61A	
		23.0-25.3		23.0-25.3	
Remarks				DUPLICATE	
Sample Date		05/16/91		05/16/91	
Analysis Date		05/22/91		05/22/91	
Volatile Organic Compound	CRQL	Result	Q	Result	Q
Chloromethane	10	10	UJ	10	UJ
Bromomethane	10	10	U	10	U
Vinyl Chloride	10	10	U	10	U
Chloroethane	10	10	U	10	U
Methylene Chloride	10	34	U	35	U
Acetone	10	23	UJ	40	UJ
Carbon Disulfide	10	5	UJ	5	UJ
1,1-Dichloroethene	10	5	U	5	U
1,1-Dichloroethane	10	5	U	5	U
1,2-Dichloroethene (total)	10	5	U	5	U
Chloroform	10	5	U	5	U
1,2-Dichloroethane	10	5	UJ	5	UJ
2-Butanone	10	10	R	10	R
1,1,1-Trichloroethane	10	5	U	5	U
Carbon Tetrachloride	10	5	U	5	U
Vinyl Acetate	10	10	U	10	U
Bromodichloromethane	10	5	U	5	U
1,2-Dichloropropane	10	5	U	5	U
cis-1,3-Dichloropropene	10	5	U	5	U
Trichloroethene	10	5	U	5	U
Dibromochloromethane	10	5	U	5	U
1,1,2-Trichloroethane	10	5	U	5	U
Benzene	10	5	U	5	U
trans-1,3-Dichloropropene	10	5	UJ	5	UJ
Bromoform	10	5	UJ	5	UJ
4-Methyl-2-pentanone	10	10	UJ	10	UJ
2-Hexanone	10	10	UJ	10	UJ
Tetrachloroethene	10	5	U	5	U
1,1,2,2-Tetrachloroethane	10	5	U	5	U
Toluene	10	5	U	5	U
Chlorobenzene	10	5	U	5	U
Ethylbenzene	10	5	U	5	U
Styrene	10	5	U	5	U
Xylene (total)	10	5	U	5	U

9613443.2121

9613W43.2122

1A

VOLATILE ORGANICS ANALYSIS SHEET

0000020

CLIENT SAMPLE NO.
Field Blank

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9105L649-001

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

Lab File ID: 0052111

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. _____

Date Analyzed: 05/21/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

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

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	~~2~~ 5	~~JB~~ U
67-64-1	Acetone	~~7~~ 10	~~JB~~ 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~~ R
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

FORM 1 V-1 12/88 Rev.

Allinto 3/11/92

9613443.2123

000002

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
Field Blank

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9105L649-001

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

Lab File ID: 0052111

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. _____

Date Analyzed: 05/21/91

Column: (pack/cap) PACK

Dilution Factor: 1.00

Number TICs found: 0

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

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

FORM 1 VOA-TIC 12/88 Rev.

3/11/92

9613443.2124

1A

000002 9

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
216-B-61A 23.0'-25.3'
Soil
BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-002

Sample wt/vol: 5.10 (g/mL) G Lab File ID: Y052204

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 2 Date Analyzed: 05/22/91

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~~	UJ
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	34	~~U~~	U
67-64-1	Acetone	23	~~U~~	~~U~~ UJ
75-15-0	Carbon Disulfide	5	~~U~~	UJ
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~~	UJ
~~78-93-3~~	~~2-Butanone~~	~~10~~	~~U~~	R
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~~	UJ
75-25-2	Bromoform	5	~~U~~	UJ
108-10-1	4-Methyl-2-pentanone	10	~~U~~	UJ
591-78-6	2-Hexanone	10	~~U~~	UJ
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	

FORM 1 V-1 12/88 Rev.

3/11/92

9613443.2125 IE 000003

CLIENT SAMPLE NO.
216-B-61A 23.0'-25.3'
BOOX36 Soil

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-002

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

Lab File ID: Y052204

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 2

Date Analyzed: 05/22/91

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.				

FORM 1 VOA-TIC 12/88 Rev.

3/11/92

9613443.2126 1A 0000037

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
216-B-61A 23.0-25.3' Soil Duplicate
BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-003

Sample wt/vol: 5.10 (g/mL) G Lab File ID: Y052205

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 2 Date Analyzed: 05/22/91

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~~	UJ
74-83-9	Bromomethane	10	U	
75-01-4	Vinyl Chloride	10	U	
75-00-3	Chloroethane	10	U	
75-09-2	Methylene Chloride	35	~~U~~	U
67-64-1	Acetone	40	~~U~~	~~X~~ UJ 03/11/92
75-15-0	Carbon Disulfide	5	~~U~~	UJ
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~~	UJ
~~78-93-3~~	~~2-Butanone~~	~~10~~	~~U~~	~~UJ~~ R 03/23/92
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~~	UJ
75-25-2	Bromoform	5	~~U~~	UJ
108-10-1	4-Methyl-2-pentanone	10	~~U~~	UJ
591-78-6	2-Hexanone	10	~~U~~	UJ
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	

FORM 1 V-1 12/88 Rev.

3/11/92

9613443.2127 IE

0000038

CLIENT SAMPLE NO.
216-B-61A 23.0-25.3' Soil Duplicate
BOOX46

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-003

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

Lab File ID: Y052205

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 2

Date Analyzed: 05/22/91

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.				

FORM 1 VOA-TIC

12/88 Rev.

3/11/92

SEMIVOLATILE ORGANIC ANALYSIS, WATER MATRIX, (ug/L)

Project	200-BP-1		
Laboratory	WESTON		
Case	SDG	CLP649	
Sample Number		B00X45	
Location		FIELD BLANK	
Remarks			
Sample Date		05/15/91	
Extraction Date		05/21/91	
Analysis Date		06/23/91	
Semivolatile Compound	CRQL	Result	Q
Phenol	10	10	U
bis(2-Chloroethyl)ether	10	10	U
2-Chlorophenol	10	10	U
1,3-Dichlorobenzene	10	10	U
1,4-Dichlorobenzene	10	10	U
Benzyl alcohol	10	10	U
1,2-Dichlorobenzene	10	10	U
2-Methylphenol	10	10	U
bis(2-Chloroisopropyl)ether	10	10	U
4-Methylphenol	10	10	U
N-Nitroso-di-n-propylamine	10	10	U
Hexachloroethane	10	10	U
Nitrobenzene	10	10	U
Isophorone	10	10	U
2-Nitrophenol	10	10	U
2,4-Dimethylphenol	10	10	U
Benzoic acid	50	50	UJ
bis(2-Chloroethoxy)methane	10	10	U
2,4-Dichlorophenol	10	10	U
1,2,4-Trichlorobenzene	10	10	U
Naphthalene	10	10	U
4-Chloroaniline	10	10	U
Hexachlorobutadiene	10	10	U
4-Chloro-3-methylphenol	10	10	U
2-Methylnaphthalene	10	10	U
Hexachlorocyclopentadiene	10	10	R
2,4,6-Trichlorophenol	10	10	U
2,4,5-Trichlorophenol	50	50	U
2-Chloronaphthalene	10	10	U
2-Nitroaniline	50	50	U
Dimethylphthalate	10	10	U
Acenaphthylene	10	10	U
2,6-Dinitrotoluene	10	10	U
3-Nitroaniline	50	50	UJ

9613443.2128

SEMIVOLATILE ORGANIC ANALYSIS, WATER MATRIX, (ug/L)

Project	200-BP-1		
Laboratory	WESTON		
Case	SDG	CLP649	
Sample Number		B00X45	
Location		FIELD BLANK	
Remarks			
Sample Date		05/15/91	
Extraction Date		05/21/91	
Analysis Date		06/23/91	
Semivolatile Compound	CRQL	Result	Q
Acenaphthene	10	10	U
2,4-Dinitrophenol	50	50	UJ
4-Nitrophenol	50	50	UJ
Dibenzofuran	10	10	U
2,4-Dinitrotoluene	10	10	U
Diethylphthalate	10	10	U
4-Chlorophenyl-phenyl ether	10	10	U
Fluorene	10	10	U
4-Nitroaniline	50	50	UJ
4,6-Dinitro-2-methylphenol	50	50	UJ
N-Nitrosodiphenylamine	10	10	U
4-Bromophenyl-phenylether	10	10	U
Hexachlorobenzene	10	10	U
Pentachlorophenol	50	50	U
Phenanthrene	10	10	U
Anthracene	10	10	U
Di-n-butylphthalate	10	10	U
Fluoranthene	10	10	U
Pyrene	10	10	U
Butylbenzylphthalate	10	10	U
3,3'-Dichlorobenzidine	10	20	U
Benz(a)anthracene	10	10	U
Chrysene	10	10	U
bis(2-Ethylhexyl)phthalate	10	10	U
Di-n-octylphthalate	10	10	U
Benzo(b)fluoranthene	10	10	U
Benzo(k)fluoranthene	10	10	UJ
Benzo(a)pyrene	10	10	U
Indeno(1,2,3-cd)pyrene	10	10	U
Dibenz(a,g)anthracene	10	10	U
Benzo(g,h,i)perylene	10	10	U

9613443.2129

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project	200-BP-1				
Laboratory	WESTON				
Case	SDG	CLP649			
Sample Number		B00X36		B00X46	
Location		216-B-61A		216-B-61A	
		23.0-25.3		23.0-25.3	
Remarks				DUPLICATE	
Sample Date		05/16/91		05/16/91	
Extraction Date		05/22/91		05/22/91	
Analysis Date		06/23/91		06/24/91	
Semivolatile Compound	CRQL	Result	Q	Result	Q
Phenol	330	370	U	370	U
bis(2-Chloroethyl)ether	330	370	U	370	U
2-Chlorophenol	330	370	U	370	U
1,3-Dichlorobenzene	330	370	U	370	U
1,4-Dichlorobenzene	330	370	U	370	U
Benzyl alcohol	330	370	U	370	UJ
1,2-Dichlorobenzene	330	370	U	370	U
2-Methylphenol	330	370	U	370	U
bis(2-Chloroisopropyl)ether	330	370	U	370	U
4-Methylphenol	330	370	U	370	U
N-Nitroso-di-n-propylamine	330	370	U	370	U
Hexachloroethane	330	370	U	370	U
Nitrobenzene	330	370	U	370	U
Isophorone	330	370	U	370	U
2-Nitrophenol	330	370	U	370	U
2,4-Dimethylphenol	330	370	U	370	U
Benzoic acid	1700	1900	UJ	1900	UJ
bis(2-Chloroethoxy)methane	330	370	U	370	U
2,4-Dichlorophenol	330	370	U	370	U
1,2,4-Trichlorobenzene	330	370	U	370	U
Naphthalene	330	370	U	370	U
4-Chloroaniline	330	370	U	370	U
Hexachlorobutadiene	330	370	U	370	U
4-Chloro-3-methylphenol	330	370	U	370	U
2-Methylnaphthalene	330	370	U	370	U
Hexachlorocyclopentadiene	330	370	R	370	R
2,4,6-Trichlorophenol	330	370	U	370	U
2,4,5-Trichlorophenol	1700	1900	U	1900	U
2-Chloronaphthalene	330	370	U	370	U
2-Nitroaniline	1700	1900	U	1900	U
Dimethylphthalate	330	370	U	370	U
Acenaphthylene	330	370	U	370	U
2,6-Dinitrotoluene	330	370	U	370	U

0047 2HU2 1996

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project	200-BP-1				
Laboratory	WESTON				
Case	SDG	CLP649			
Sample Number		B00X36		B00X46	
Location		216-B-61A		216-B-61A	
		23.0-25.3		23.0-25.3	
Remarks				DUPLICATE	
Sample Date		05/16/91		05/16/91	
Extraction Date		05/22/91		05/22/91	
Analysis Date		06/23/91		06/24/91	
Semivolatile Compound	CRQL	Result	Q	Result	Q
3-Nitroaniline	1700	1900	UJ	1900	UJ
Acenaphthene	330	370	U	370	U
2,4-Dinitrophenol	1700	1900	UJ	1900	UJ
4-Nitrophenol	1700	1900	UJ	1900	UJ
Dibenzofuran	330	370	U	370	U
2,4-Dinitrotoluene	330	370	U	370	U
Diethylphthalate	330	370	U	370	U
4-Chlorophenyl-phenyl ether	330	370	U	370	U
Fluorene	330	370	U	370	U
4-Nitroaniline	1700	1900	UJ	1900	UJ
4,6-Dinitro-2-methylphenol	1700	1900	UJ	1900	UJ
N-Nitrosodiphenylamine	330	370	U	370	U
4-Bromophenyl-phenylether	330	370	U	370	U
Hexachlorobenzene	330	370	U	370	U
Pentachlorophenol	1700	1900	U	1900	U
Phenanthrene	330	370	U	370	U
Anthracene	330	370	U	370	U
Di-n-butylphthalate	330	200	U	110	U
Fluoranthene	330	370	U	370	U
Pyrene	330	370	U	370	U
Butylbenzylphthalate	330	370	U	370	U
3,3'-Dichlorobenzidine	330	750	U	750	UJ
Benz(a)anthracene	330	370	U	370	U
Chrysene	330	370	U	370	U
bis(2-Ethylhexyl)phthalate	330	370	U	370	U
Di-n-octylphthalate	330	370	U	370	U
Benzo(b)fluoranthene	330	370	U	370	U
Benzo(k)fluoranthene	330	370	UJ	370	U
Benzo(a)pyrene	330	370	U	370	U
Indeno(1,2,3-cd)pyrene	330	370	U	370	U
Dibenz(a,g)anthracene	330	370	U	370	U
Benzo(g,h,i)perylene	330	370	U	370	U

9613443.2131

SEMIVOLATILE ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

Project	200-BP-1			
Laboratory	WESTON			
Case	SDG	CLP649		
Sample Number		B00X36	B00X46	
Location		216-B-61A	216-B-61A	
		23.0-25.3	23.0-25.3	
Remarks			DUPLICATE	
Sample Date		05/16/91	05/16/91	
Extraction Date		05/22/91	05/22/91	
Analysis Date		06/23/91	06/24/91	
TIC Semivolatile Compound		Result Q	Result	Q
Aldol Condensate		600 R	200	R
Unknown		300 NJ		

9613443.2132

9613443.2133

0000019

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
Field Blank water

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9105L649-001

Sample wt/vol: 980 (g/mL) ML Lab File ID: S062314

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. _____ dec. Date Extracted: 05/21/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L		
108-95-2	Phenol	10	U	
111-44-4	bis(2-Chloroethyl)ether	10	U	
95-57-8	2-Chlorophenol	10	U	
541-73-1	1,3-Dichlorobenzene	10	U	
106-46-7	1,4-Dichlorobenzene	10	U	
100-51-6	Benzyl alcohol	10	U	
95-50-1	1,2-Dichlorobenzene	10	U	
95-48-7	2-Methylphenol	10	U	
108-60-1	bis(2-Chloroisopropyl)ether	10	U	
106-44-5	4-Methylphenol	10	U	
621-64-7	N-Nitroso-Di-n-propylamine	10	U	
67-72-1	Hexachloroethane	10	U	
98-95-3	Nitrobenzene	10	U	
78-59-1	Isophorone	10	U	
88-75-5	2-Nitrophenol	10	U	
105-67-9	2,4-Dimethylphenol	10	U	
65-85-0	Benzoic acid	50	~~U~~	UJ
111-91-1	bis(2-Chloroethoxy)methane	10	U	
120-83-2	2,4-Dichlorophenol	10	U	
120-82-1	1,2,4-Trichlorobenzene	10	U	
91-20-3	Naphthalene	10	U	
106-47-8	4-Chloroaniline	10	U	
87-68-3	Hexachlorobutadiene	10	U	
59-50-7	4-Chloro-3-methylphenol	10	U	
91-57-6	2-Methylnaphthalene	10	U	
~~77-47-4~~	~~Hexachlorocyclopentadiene~~	~~10~~	~~U~~	R
88-06-2	2,4,6-Trichlorophenol	10	U	
95-95-4	2,4,5-Trichlorophenol	50	U	
91-58-7	2-Chloronaphthalene	10	U	
88-74-4	2-Nitroaniline	50	U	
131-11-3	Dimethylphthalate	10	U	
208-96-8	Acenaphthylene	10	U	
606-20-2	2,6-Dinitrotoluene	10	U	

FORM 1 SV-1 12/88 Rev.

3/11/92

9613443.2134

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

0000020

CLIENT SAMPLE NO.

Field Blank water

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9105L649-001

Sample wt/vol: 980 (g/mL) ML Lab File ID: S062314

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. _____ dec. Date Extracted: 05/21/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND			
99-09-2	3-Nitroaniline	50	~~U~~	UJ
83-32-9	Acenaphthene	10	U	
51-28-5	2,4-Dinitrophenol	50	~~U~~	UJ
100-02-7	4-Nitrophenol	50	~~U~~	UJ
132-64-9	Dibenzofuran	10	U	
121-14-2	2,4-Dinitrotoluene	10	U	
84-66-2	Diethylphthalate	10	U	
7005-72-3	4-Chlorophenyl-phenylether	10	U	
86-73-7	Fluorene	10	U	
100-01-6	4-Nitroaniline	50	~~U~~	UJ
534-52-1	4,6-Dinitro-2-methylphenol	50	~~U~~	UJ
86-30-6	N-Nitrosodiphenylamine (1)	10	U	
101-55-3	4-Bromophenyl-phenylether	10	U	
118-74-1	Hexachlorobenzene	10	U	
87-86-5	Pentachlorophenol	50	U	
85-01-8	Phenanthrene	10	U	
120-12-7	Anthracene	10	U	
84-74-2	Di-n-Butylphthalate	10	U	
206-44-0	Fluoranthene	10	U	
129-00-0	Pyrene	10	U	
85-68-7	Butylbenzylphthalate	10	U	
91-94-1	3,3'-Dichlorobenzidine	20	U	
56-55-3	Benzo(a)anthracene	10	U	
218-01-9	Chrysene	10	U	
117-81-7	bis(2-Ethylhexyl)phthalate	10	U	
117-84-0	Di-n-Octyl phthalate	10	U	
205-99-2	Benzo(b)fluoranthene	10	~~U~~ *	~~UJ~~ @ 3/11/92
207-08-9	Benzo(k)fluoranthene	10	~~U~~	UJ
50-32-8	Benzo(a)pyrene	10	U	
193-39-5	Indeno(1,2,3-cd)pyrene	10	U	
53-70-3	Dibenzo(a,h)anthracene	10	U	
191-24-2	Benzo(g,h,i)perylene	10	U	

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

3/11/92

9613443.2135
1F

0000021

CLIENT SAMPLE NO.
Field Blank water
BOOX45

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9105L649-001

Sample wt/vol: 980 (g/mL) ML Lab File ID: S062314

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. _____ dec. Date Extracted: 05/21/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 0

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

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

FORM 1 SV-TIC 12/88 Rev.

3/11/92

9613443.2136

0000027

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
216-B-61A 23.0-25.3' Soil

BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-002

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S062307

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 3 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic acid	1900	~~U~~ UJ
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
~~77-47-4~~	~~Hexachlorocyclopentadiene~~	~~370~~	~~U~~ R
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

3/1/92

9613443.2137

0000028

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
216-B-61A 23.0-25.3' Soil

BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-002

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S062307

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 3 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1900	~~U~~
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	~~U~~
100-02-7	4-Nitrophenol	1900	~~U~~
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	~~U~~
534-52-1	4,6-Dinitro-2-methylphenol	1900	~~U~~
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	200	~~JB~~
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-Octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	~~U~~ OK 3/11/92
207-08-9	Benzo(k)fluoranthene	370	~~U~~
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

3/11/92

9613443.2138

0000029

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
216-B-61A 23.0-25.3'
Soil
BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-002

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S062307

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 3 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/23/91

GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.11

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~ALDOL CONDENSATE~~	~~4.40~~	~~600~~	~~ABJ~~
2.	UNKNOWN	4.70	300	J

R NJ 03/24/92

3/25/92

FORM 1 SV-TIC 12/88 Rev.

3/11/92

9613443.2139

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

0000041

CLIENT SAMPLE NO.
216-B-61A 23.0-25.3'
Soil Duplicate

BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-003

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S062414

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 2 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/24/91

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	~~U~~ UJ
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic acid	1900	~~U~~ UJ
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
~~77-47-4~~	~~Hexachlorocyclopentadiene~~	~~370~~	~~U~~ R
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

3/11/92

9613443.2140

1C

0000042

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
216-B-61A 23.0-25.3'
Soil Duplicate
BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-003

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S062414

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 2 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/24/91

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 1.11

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

CAS NO.	COMPOUND			
99-09-2	3-Nitroaniline	1900	~~U~~	UJ
83-32-9	Acenaphthene	370	U	
51-28-5	2,4-Dinitrophenol	1900	~~U~~	UJ
100-02-7	4-Nitrophenol	1900	~~U~~	UJ
132-64-9	Dibenzofuran	370	U	
121-14-2	2,4-Dinitrotoluene	370	U	
84-66-2	Diethylphthalate	370	U	
7005-72-3	4-Chlorophenyl-phenylether	370	U	
86-73-7	Fluorene	370	U	
100-01-6	4-Nitroaniline	1900	~~U~~	UJ
534-52-1	4,6-Dinitro-2-methylphenol	1900	~~U~~	UJ
86-30-6	N-Nitrosodiphenylamine (1)	370	U	
101-55-3	4-Bromophenyl-phenylether	370	U	
118-74-1	Hexachlorobenzene	370	U	
87-86-5	Pentachlorophenol	1900	U	
85-01-8	Phenanthrene	370	U	
120-12-7	Anthracene	370	U	
84-74-2	Di-n-Butylphthalate	110	~~JB~~	J
206-44-0	Fluoranthene	370	U	
129-00-0	Pyrene	370	U	
85-68-7	Butylbenzylphthalate	370	U	
91-94-1	3,3'-Dichlorobenzidine	750	~~U~~	UJ
56-55-3	Benzo(a)anthracene	370	U	
218-01-9	Chrysene	370	U	
117-81-7	bis(2-Ethylhexyl)phthalate	370	U	
117-84-0	Di-n-Octyl phthalate	370	U	
205-99-2	Benzo(b)fluoranthene	370	U	
207-08-9	Benzo(k)fluoranthene	370	U	
50-32-8	Benzo(a)pyrene	370	U	
193-39-5	Indeno(1,2,3-cd)pyrene	370	U	
53-70-3	Dibenzo(a,h)anthracene	370	U	
191-24-2	Benzo(g,h,i)perylene	370	U	

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

3/11/92

9613443.2141
1F

00000 43

CLIENT SAMPLE NO.
216-B-61A 23.0-25.3'
Soil Duplicate
BOOX46

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-003

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S062414

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 2 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/24/91

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 1.10

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
~~1.~~	~~ALDOL CONDENSATE~~	~~4.43~~	~~200~~	~~ABJ~~

R

3/25/92

FORM 1 SV-TIC 12/88 Rev.

3/11/92

PESTICIDE/PCB ORGANIC ANALYSIS, WATER MATRIX, (ug/L)

Project	200-BP-1		
Laboratory	WESTON		
Case	SDG	CLP649	
Sample Number		B00X45	
Location		FIELD BLANK	
Remarks			
Sample Date		05/15/91	
Extraction Date		05/21/91	
Analysis Date		06/25/91	
Pesticide/PCB	CRQL	Result	Q
alpha-BHC	0.05	0.05	U
beta-BHC	0.05	0.05	U
delta-BHC	0.05	0.05	U
gamma-BHC (Lindane)	0.05	0.05	U
Heptchlor	0.05	0.05	U
Aldrin	0.05	0.05	U
Heptachlor epoxide	0.05	0.05	U
Endosulfan I	0.05	0.05	U
Dieldrin	0.10	0.10	U
4,4'-DDE	0.10	0.10	U
Endrin	0.10	0.10	U
Endosulfan II	0.10	0.10	U
4,4'-DDD	0.10	0.10	U
Endosulfan sulfate	0.10	0.10	U
4,4'-DDT	0.10	0.10	U
Methoxychlor	0.50	0.50	U
Endrin Ketone	0.10	0.10	U
alpha-Chlordane	0.50	0.50	U
gamma-Chlordane	0.50	0.50	U
Toxaphene	5.00	1.00	U
Arochlor-1016	1.00	0.50	U
Arochlor-1221	1.00	0.50	U
Arochlor-1232	2.00	0.50	U
Arochlor-1242	1.00	0.50	U
Arochlor-1248	1.00	0.50	U
Arochlor-1254	1.00	1.00	U
Arochlor-1260	1.00	1.00	U

9613443.2142

PESTICIDE/PCB ORGANIC ANALYSIS, SOIL MATRIX, (ug/Kg)

	200-BP-1					
Laboratory	WESTON					
Case	SDG	CLP 649				
Sample Number		BOOX36			BOOX46	
Location		216-B-61A			216-B-61A	
		23.0-25.3			23.0-25.3	
Remarks					DUPLICATE	
Sample Date		05/16/91			05/16/91	
Extraction Date		05/22/91			05/22/91	
Analysis Date		06/25/91			06/25/91	
Pesticide/PCB	CRQL	Result	Q	CRQL	Result	Q
alpha-BHC	8.5	40	U	1.7	8.1	U
beta-BHC	8.5	40	U	1.7	8.1	U
delta-BHC	8.5	40	U	1.7	8.1	U
gamma-BHC (Lindane)	8.5	40	U	1.7	8.1	U
Heptchlor	8.5	40	U	1.7	8.1	U
Aldrin	8.5	40	U	1.7	8.1	U
Heptachlor epoxide	8.5	40	U	1.7	8.1	U
Endosulfan I	8.5	40	U	1.7	8.1	U
Dieldrin	16.5	81	U	3.3	16	U
4,4'-DDE	16.5	81	U	3.3	16	U
Endrin	16.5	81	U	3.3	16	U
Endosulfan II	16.5	81	U	3.3	16	U
4,4'-DDD	16.5	81	U	3.3	16	U
Endosulfan sulfate	16.5	81	U	3.3	16	U
4,4'-DDT	16.5	81	U	3.3	16	U
Methoxychlor	85.0	400	U	17.0	81	U
Endrin Ketone	16.5	81	U	3.3	16	U
alpha-Chlordane	8.5	400	U	1.7	81	U
gamma-Chlordane	8.5	400	U	1.7	81	U
Toxaphene	850.0	810	U	170.0	160	U
Arochlor-1016	165.0	400	U	33.0	81	U
Arochlor-1221	165.0	400	U	33.0	81	U
Arochlor-1232	335.0	400	U	67.0	81	U
Arochlor-1242	165.0	400	U	33.0	81	U
Arochlor-1248	165.0	400	U	33.0	81	U
Arochlor-1254	165.0	810	U	33.0	160	U
Arochlor-1260	165.0	810	U	33.0	160	U

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9613443.2144

ID

0000018 CLIENT SAMPLE NO.

Field Blank

PESTICIDE ORGANICS ANALYSIS SHEET

BOOX45

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9105L649-001

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 06249103.27

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. _____ dec. Date Extracted: 05/21/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 06/25/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.050	U
319-85-7	Beta-BHC	0.050	U
319-86-8	Delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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3/23/92

9613443.2145 ID

0000023 CLIENT SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS SHEET

@ 3/23/92 200-216-B-61A 23.0-25.3 Soil

BOOX36

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL Lab Sample ID: 9105L649-002

Sample wt/vol: 30.7 (g/mL) G Lab File ID: 06249109.22

Level: (low/med) LOW Date Received: 05/17/91

% Moisture: not dec. 3 dec. Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 06/25/91

GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
319-84-6	Alpha-BHC	40	U
319-85-7	Beta-BHC	40	U
319-86-8	Delta-BHC	40	U
58-89-9	gamma-BHC (Lindane)	40	U
76-44-8	Heptachlor	40	U
309-00-2	Aldrin	40	U
1024-57-3	Heptachlor epoxide	40	U
959-98-8	Endosulfan I	40	U
60-57-1	Dieldrin	81	U
72-55-9	4,4'-DDE	81	U
72-20-8	Endrin	81	U
33213-65-9	Endosulfan II	81	U
72-54-8	4,4'-DDD	81	U
1031-07-8	Endosulfan sulfate	81	U
50-29-3	4,4'-DDT	81	U
72-43-5	Methoxychlor	400	U
53494-70-5	Endrin ketone	81	U
5103-71-9	alpha-Chlordane	400	U
5103-74-2	gamma-Chlordane	400	U
8001-35-2	Toxaphene	810	U
12674-11-2	Aroclor-1016	400	U
11104-28-2	Aroclor-1221	400	U
11141-16-5	Aroclor-1232	400	U
53469-21-9	Aroclor-1242	400	U
12672-29-6	Aroclor-1248	400	U
11097-69-1	Aroclor-1254	810	U
11096-82-5	Aroclor-1260	810	U

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9613443.2146 ~~ID 43-2146~~ 0000002

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO. 216-B-61A 23.0-25.3 Duplicate Soil

BOOX46

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

Client: WESTINGHOUSE HANFORD

Matrix: SOIL

Lab Sample ID: 9105L649-003

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

Lab File ID: 06249109.27

Level: (low/med) LOW

Date Received: 05/17/91

% Moisture: not dec. 2 dec.

Date Extracted: 05/22/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 06/25/91

GPC Cleanup: (Y/N) Y pH: 6.8

Dilution Factor: 1.00

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

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Project	200-BP-1		
Laboratory	WESTON		
Case	SDG	CLP649	
Sample Number		B00X45	
Location		FIELD BLANK	
Remarks			
Sample Date		05/15/91	
Inorganic Analytes	CRQL	Result	Q
Chloride	0.25	0.25	U
Fluoride	0.5	0.5	U
Nitrite	0.25	0.25	UJ
Nitrate	0.25	0.25	UJ
Phosphate	0.25	0.25	UJ
Sulfate	0.25	0.25	U
Nitrate Nitrite	0.1	0.28	

9413112.2147

Project	200-BP-1		
Laboratory	WESTON		
Case	SDG	CLP649	
Sample Number		B00X45	
Location		FIELD BLANK	
Remarks			
Sample Date		05/15/91	
Inorganic Analytes	CRQL	Result	Q
Cyanide	10	10	U

9613143.2148

Project	200-BP-1				
Laboratory	WESTON				
Case	SDG	CLP649			
Sample Number		B00X36		B00X46	
Location		216-B-61A		216-B-61A	
		23.0-25.3		23.0-25.3	
Remarks				DUPLICATE	
Sample Date		05/16/91		05/16/91	
Inorganic Analytes	CRQL	Result	Q	Result	Q
Percent Solids	N/A	97.8		97.9	

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0000003

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 06/18/91

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

WESTON BATCH #: 9105L649

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BOOX45	Chloride by IC	0.25 u	mg/L	0.25
		Fluoride by IC	0.50 u	mg/L	0.50
	Field Blank	Nitrite by IC	0.25 u	mg/L	0.25 UJ
		Nitrate by IC	0.25 u	mg/L	0.25 UJ
		Cyanide, Total	10.0 u	UG/L	10.0
		Phosphate by IC	0.25 u	mg/L	0.25 UJ
		Sulfate by IC	0.25 u	mg/L	0.25
		Nitrate Nitrite	.28 ~~0.86~~	MG/L	0.10
-002	BOOX36 216-B-61A (23.0-25.3)	% Solids	97.8	%	0.10
-003	BOOX46 216-B-61A (23.0-25.3) Duplicate	% Solids	97.9	%	0.10

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ATTACHMENT 4

DATA REVIEW SUPPORTING DOCUMENTATION

VOLATILE ORGANIC DATA REVIEW CHECKLIST - FORM A-1

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 03/10/92
LABORATORY: Weston	CASE: 910516 49	SDG: CLP649
SAMPLES/MATRIX: B00X45- water		
B00X36, B00X46/soil		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	X		
Data Summary	X		
Chain-of-Custody	X		
QC Summary			
Surrogate report	X		
MS/MSD report	X		
Blank summary report	X		
GC/MS tuning report	X		
Internal standard summary report	X		
Sample Data			
Sample reports	X		
TIC reports for each sample	X		
RIC reports for all samples	X		
Raw and corrected spectra for all detected results	X		
Raw and corrected library search data for all reported TIC			X
Quantitation and calculation data for all TIC			X
Standards Data			
Initial calibration report	X		
RIC and quantitation reports for initial calibration	X		
Continuing calibration reports	X		
RIC and quantitation reports for cont. calibrations	X		
Internal standard summary report	X		

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Data Package Item — Present?:	Yes	No	N/A
Raw QC Data			
Tuning report, spectra and mass lists	X	—	—
Blank analysis reports	X	—	—
TIC reports for all blanks	X	—	—
RIC and quantitation reports for blanks	X	—	—
Raw and corrected spectra for all detected results in blanks	X	—	—
Raw and corrected library search data for all reported TIC	—	—	X
Quantitation and calculation data for all TIC	—	—	X
MS/MSD report forms	X	X 3-31-92	—
RIC and quantitation reports for MS/MSD	—	X	—
Additional Data			
Moisture/% solids data sheets	—	X	—
Reduction formulae	—	X	—
Instrument time logs	X	—	—
Chemist notebook pages	—	X	—
Sample preparation sheets	X	—	—

2. HOLDING TIMES

Complete the holding time summary form listing all samples and dates of collection and analysis.

Were all samples analyzed within holding time? (Yes) No N/A

ACTION: If any holding times were exceeded, qualify associated samples as estimated (J for detects or UJ for non-detects).

3. INSTRUMENT CALIBRATION AND TUNING

3.1 GC/MS TUNING

Is a BFB tune report present for each applicable 12h period? (Yes) No N/A

Do all tunes on all instruments meet the tuning criteria? (Yes) No N/A

Do all tunes on all instruments meet the expanded criteria? (Yes) No N/A

Has the laboratory made any calculation or transciption errors? Yes (No) N/A

Have the proper significant figures been reported? (Yes) No N/A

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ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects or UJ for non-detects). If all tuning criteria are missed, qualify all associated data as unusable (R).

3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments?	Yes	No	N/A
Are all RSD values ≤30%?	Yes	No	N/A
Are all RRF values ≥0.05?	Yes	No	N/A

ACTION: If any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all non-detects as unusable (R). If any RSD value is out of specification qualify all associated data as estimated (J for detects or UJ for non-detects).

3.3. CONTINUING CALIBRATION

Is a continuing calibration report present for all 12h periods in which associated samples were analyzed ?	Yes	No	N/A
Are all RRF values ≥0.05?	Yes	No	N/A
Are all %D values ≤25%?	Yes	No	N/A

ACTION: If any RRF value is out of specification qualify all associated detected results as estimated and all non-detects as unusable (R). If any %D is out of specification, qualify all associated results as estimated (J for detects or UJ for non-detects).

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory conducted a method blank analysis per matrix for every 12h period in which samples were analyzed?	Yes	No	N/A
Are TCL compounds present in the laboratory blanks?	Yes	No	N/A

ACTION: Qualify all sample results <10X the highest blank concentration for the common laboratory contaminants, as non-detects (U) or at the SQL if the result is < CRQL. Qualify all remaining sample results <5X the blank concentration in similar fashion.

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4.2. FIELD BLANKS

Are TCL compounds present in the field blanks? Yes No N/A

ACTION: Qualify all detected sample results less than or equal to five times the amount in any valid field blank as non-detects (U) and note the field blank results in the validation narrative.

5. ACCURACY

5.1 SURROGATE RECOVERY

Are any surrogate recoveries out of specification? Yes No N/A

Are any surrogate recoveries less than 10%? Yes No N/A

Are any method blank surrogate recoveries out of specification? Yes No N/A

ACTION: Qualify all associated sample results as estimated (J for detects or UJ for non-detects) for surrogates out of specification but greater than 10%. Qualify all associated positive sample results as estimated (J) and all non-detect results as unusable (R) for all surrogates below 10%. If method blank surrogates are out of specification and the associated sample surrogates are acceptable no qualification is necessary, however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group? Yes No N/A

Are MS/MSD recoveries within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: If an MS/MSD analysis has not been conducted contact the laboratory for an explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

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5.3 PERFORMANCE AUDIT SAMPLES

Are the performance audit sample results within the acceptance limits? Yes No N/A

ACTION: Note the results of the performance audit sample in the validation narrative.

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are RPD values within specification? Yes No N/A

Are there any calculation errors? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and not the results in the validation narrative. If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? Yes No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes No N/A

3/26/92

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects or UJ for non-detects). If area counts are outside the acceptance limits and the retention time criteria are not met qualify all non-detects in the associated samples as unusable (R).

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard? Yes No N/A

Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra? Yes No N/A

Do the relative intensities between the standard and sample spectra agree within 20%? Yes No N/A

Have all ions >10% in the sample spectra that are not present in the standard spectra been explained? Yes No N/A

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R). Note the results in the validation narrative.

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standard(s) for quantitation? Yes No N/A

Are results and quantitation limits calculated properly? Yes No N/A

Has the laboratory reported the sample quantitation limits within five times the CRQL values? Yes No N/A

ACTION: If the results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8.3 TENTATIVELY IDENTIFIED COMPOUNDS (TIC)

Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW? Yes No N/A

Has the laboratory properly identified and coded all TIC? Yes No N/A

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as non-detects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as non-detects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated (JN).

9. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW?	Yes	No	N/A
Were project specific data quality objectives met for this analysis?	Yes	No	N/A

ACTION: Summarize all the data qualifications recommended in the foregoing sections, and complete the data validation narrative according to the requirements of Section 10 of the data validation requirements.

3/26/92

COMMENTS (attach additional sheets as necessary):

MS/MSD summary form is included in this report but not analyzed with this SDG.

Samples B00X36 and B00X46 are field duplicates. All results are below the detection limit and therefore the RPD is not calculated.

HOLDING TIME SUMMARY - FORM B-1

91051-649

SDG: 649	REVIEWER: [signature]	DATE: 03/10/92	PAGE 1 OF 1

COMMENTS:

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	VOA	05/15/91		05/21/91	6	6	none
B00X36	↓	05/16/91		05/22/91	6	6	↓
B00X46	↓	05/16/91		↓	6	6	↓

9613443.2159

3/10/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 1 OF 5
COMMENTS:			
CALIB. TYPE: (INITIAL) CONTINUING		INSTRUMENT: 5100Y GC/MS	

CALIB. DATE	COMPOUND	RF	(RSD)/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/14/91	Chloromethane		53.42	B00X36	10 uJ
				B00X46	10 uJ

9613443.2160

3/26/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 2 OF 5		
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT: 5100Y GC/MS			
CALIB. DATE	COMPOUND	RF 50	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/22/91	Acetone		51.7	B00X36	23J
	~~Carbon-Air~~ 03/10/92			↓ 46	40J
	Carbon Disulfide		-41.9	B00X36	5 UJ
				↓ 46	5 UJ
	1,2-Dichloroethane		-35.3	B00X36	5 UJ
				↓ 46	5 UJ
	2-Butanone	.035	45.3	B00X36	10 R
				↓ 46	10 ~~UJ~~ R 03/23/92
	Trans-1,3-Dichloropropene		27.1	B00X36	5 UJ
				↓ 46	5 UJ
	Bromoform		43.0	B00X36	5 UJ
				↓ 46	5 UJ
	4-Methyl-2-pentanone		28.3	B00X36	10 UJ
				↓ 46	10 UJ
	2-Hexanone		37.9	B00X36	10 UJ
				↓ 46	10 UJ

9613443.2161

03/24/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [signature]	DATE: 03/10/92	PAGE 3 OF 5		
COMMENTS:					
CALIB. TYPE:	INITIAL	CONTINUING	INSTRUMENT: 5100Y GC/MS		
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/22/91	1,2-Dichloroethane-d4		-28.7	B00X36	none
				↓ 46	↓

2913443.2162

6/26/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/11/92	PAGE 4 OF 5		
COMMENTS:					
CALIB. TYPE:	INITIAL CONTINUING	INSTRUMENT: 1050Q			
CALIB. DATE	COMPOUND	$\overline{RF}$ F	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/21/91	2-Butanone 3/11/92	.028		B00X45	10 R

3/26/92

9613443.2163

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [signature]	DATE: 03/11/92	PAGE 5 OF 5		
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT: 1050 Q			
CALIB. DATE	COMPOUND	RF 50	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/21/91	2-Butanone	.025		B00X45	already qualified (LOR)

3/26/92

9613443.2164

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG:649	REVIEWER: [illegible]	DATE: 03/11/92	PAGE 1 OF 1

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
VBLK(5/21/91)	MeCl2	1	J	2.08	ug/L		10	B00X45	5 u
VBLK(5/21/91)	Acetone	4	J	2.18	ug/L		40	B00X45	10 u
VBLK(5/22/91)	MeCl2	8		3.06	ug/kg		80	B00X36	34 u
								B00X46	~~23 uJ~~ 35u
VBLK(5/22/91)	Acetone	6	J	3.34	ug/kg		60	B00X36	23 uJ
								B00X46	40 uJ

3/11/92

3/26/92

9613443.2165

PRECISION DATA SUMMARY - FORM B-5

SDG: 649	REVIEWER [illegible]	DATE: 03/23/92	PAGE 1 OF 1
COMMENTS: Field Duplicate			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
All Volatile compounds	B00X36	B00X46	NC		
all results are below the detection limit.					

NC= Not Calculated

9913443.2166

.9613443.2167

SEMI-VOLATILE ORGANIC DATA REVIEW CHECKLIST - FORM A-2

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 03/11/92
LABORATORY: Weston	CASE: 9105L649	SDG: CLP 649
SAMPLES/MATRIX: B00X45/water		
B00X36, B00X46/soils		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	X		
Data Summary	X		
Chain-of-Custody	X		
QC Summary			
Surrogate report		X	
MS/MSD report		X	
Blank summary report		X	
GC/MS tuning report	X		
Internal standard summary report	X		
Sample Data			
Sample reports	X		
TIC reports for each sample	X		
RIC reports for all samples	X		
Raw and corrected spectra for all detected results	X		
Raw and corrected library search data for all reported TIC			X
Quantitation and calculation data for all TIC			X
Standards Data			
Initial calibration report	X		
RIC and quantitation reports for initial calibration	X		
Continuing calibration reports	X		
RIC and quantitation reports for cont. calibrations	X		
Internal standard summary report	X		

3/26/92

Data Package Item	Present?: Yes	No	N/A
Raw QC Data			
Tuning report, spectra and mass lists	X		
Blank analysis reports	X		
TIC reports for all blanks not See comments.	X	X	
RIC and quantitation reports for blanks	X		
Raw and corrected spectra for all detected results in blanks	X		
Raw and corrected library search data for all reported TIC			X
Quantitation and calculation data for all TIC			X
MS/MSD report forms	X		
RIC and quantitation reports for MS/MSD	X		
Additional Data			
Moisture/% solids data sheets		X	
Reduction formulae		X	
Instrument time logs	X		
Chemist notebook pages		X	
Sample preparation sheets	X		

2. HOLDING TIMES

Were all samples extracted within holding time?	(Yes)	No	N/A
Were all samples analyzed within holding time?	(Yes)	No	N/A

ACTION: If any holding times have been exceeded, qualify all results for the associated samples as estimated (J for detects and UJ for non-detects).

3. INSTRUMENT CALIBRATION AND TUNING

3.1 GC/MS TUNING

Is a DFTPP tune report present for each applicable 12h period?	(Yes)	No	N/A
Do all tunes on all instruments meet the tuning criteria?	(Yes)	No	N/A
Do all tunes on all instruments meet the expanded criteria?	(Yes)	No	N/A
Has the laboratory made any calculation or transciption errors?	Yes	(No)	N/A
Have the proper significant figures been reported?	(Yes)	No	N/A

ACTION: If the mass calibration is out of specification but within the expanded criteria, qualify associated data as estimated (J for detects and UJ for non-detects). If all tuning criteria are not met, qualify all associated data as unusable (R).

3/26/92

3.2 INITIAL CALIBRATION

Is an initial calibration report provided for all instruments?	Yes	No	N/A
Are all RSD values ≤30%?	Yes	No	N/A
Are all RRF values ≥0.05?	Yes	No	N/A

ACTION: If any RRF value is out of specification qualify all detected results for the particular compound as estimated (J) and all non-detects as unusable (R). If any RSD value is out of specification qualify all associated data as estimated (J for detects and UJ for non-detects).

3.3. CONTINUING CALIBRATION

Is a continuing calibration report present for all 12h periods in which associated samples were analyzed ?	Yes	No	N/A
Are all RRF values ≥0.05?	Yes	No	N/A
Are all %D values ≤25%?	Yes	No	N/A

ACTION: If any RRF value is out of specification qualify all associated detected results as estimated (J) and all non-detects as unusable (R). If any %D is out of specification, qualify all associated results as estimated (J for detects and UJ for non-detects).

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory conducted a method blank analysis per matrix for every extraction batch?	Yes	No	N/A
Are compounds reported in the laboratory blanks?	Yes	No	N/A

ACTION: Qualify all sample results <10X the highest blank concentration for the common laboratory contaminants, as non-detects (U) or at the SQL if the result is <CRQL. Qualify all remaining sample results <5X the blank concentration in similar fashion.

4.2. FIELD BLANKS

Are compounds reported in the field blanks?	Yes	No	N/A

ACTION: Qualify all detected sample results less than or equal to five times the amount in any valid field blank as non-detects (U) and note the results of the field blanks in the validation narrative.

3/24/92

5. ACCURACY

5.1 SURROGATE RECOVERY

Are any surrogate recoveries out of specification? Yes (No) N/A

Are any surrogate recoveries less than 10%? Yes (No) N/A

Are any method blank surrogate recoveries out of specification? Yes (No) N/A

ACTION: Qualify all associated data as estimated (J for detects and UJ for non-detects) if at least two semivolatile surrogates are out of specification. If any surrogate is below 10% recovery qualify associated detected results as estimated (J) and associated non-detect results as unusable (R). If method blank surrogates are out of specification and associated sample surrogates are acceptable no qualification is required, however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has an MS/MSD analysis been conducted per matrix in the sample group? Yes (No) N/A

Are MS/MSD recoveries within specification? Yes (No) N/A

Are there any calculation errors? Reporting forms were not included in data package. Yes No (N/A)

ACTION: If MS/MSD analyses have not been conducted contact the laboratory for explanation. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

Are the results for the performance audit samples within the acceptance limits? Yes No (N/A)

ACTION: Note the results of the performance audit samples in the validation narrative.

3/24/92

6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATES

Are all RPD values within specification? Yes (No) N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and note the results in the validation narrative. If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? (Yes) No N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No (N/A)

ACTION: Note the results of the field split samples in the validation narrative.

7. SYSTEM PERFORMANCE

7.1 INTERNAL STANDARDS PERFORMANCE

Are any internal standard area counts outside the acceptance limits? (Yes) No N/A

Are retention times for any internal standard outside the ±30 second windows established by the most recent calibration check? Yes (No) N/A

ACTION: If the area counts are outside the acceptance limits qualify all associated results as estimated (J for detects and UJ for non-detects). If area counts are outside the acceptance limits and the retention time criteria are not met qualify all non-detects in the associated samples as unusable (R).

3/26/92

8. COMPOUND IDENTIFICATION AND QUANTITATION

8.1 COMPOUND IDENTIFICATION

Are detected compounds within ±0.06 relative retention time units of the associated calibration standard? Yes No N/A

Are all ions at a relative intensity of ≥10% in the standard spectra present in the sample spectra? Yes No N/A

Do the relative intensities between the standard and sample spectra agree within 20%? Yes No N/A

Have all ions >10% in the sample spectra that are not present in the standard spectra been explained? Yes No N/A

ACTION: If compound identification is in error and retention time and mass spectral criteria are exceeded qualify all affected positive results as unusable (R). If cross-contamination between analyses is suspected, qualify affected data as unusable (R).

8.2 REPORTED RESULTS AND QUANTITATION LIMITS

Has the laboratory used the correct RRF values and internal standards for quantitation? Yes No N/A

Are results and quantitation limits calculated properly? Yes No N/A

Has the laboratory reported the sample quantitation limits within five times the CRQL values? Yes No N/A

ACTION: If the quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8.3 TENTATIVELY IDENTIFIED COMPOUNDS

Has the laboratory conducted a spectral library search on all candidate TIC peaks in accordance with the analytical SOW? Yes No N/A

Has the laboratory properly identified and coded all TIC? Yes No N/A

ACTION: If the laboratory has failed to search the minimum number of TIC peaks in the chromatogram contact the laboratory for submittal of the required data. Qualify as non-detects (U) all TIC compounds present in samples and blanks using the review criteria specified in the validation requirements. If TIC identification is in error sample results should be qualified as non-detects (U) or unusable (R). If TIC identifications are judged valid, qualify the results as presumptive and estimated (JN).

3/26/92

9. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW? Yes No N/A

Were project specific data quality objectives met for this analysis? Yes No N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10 of the data validation requirements.

3/26/92

9613443.2174

COMMENTS (attach additional sheets as necessary):

The internal standards Chrysene-d12 and perylene-d12 were out of the control limits for the soil method blank and the soil blank spike duplicate analyzed on 06/23/91.

The IS Chrysene-d12 and Perylene-d12 ~~were out of the control limits~~ for the soil blank resun, and Perylene-d12 for the soil blank spike were out of the control limits - the analysis was on 6/24/91. 3/13/92 3/13/92

All retention times ~~windows~~ were within the IS windows. 3/13/92

Surrogate 2,4,6-Trichlorophenol - CCV %D is out of the control limit for both CCVs (6/23 & 6/24/91)

Pages 10,11,12,13,14 are missing from the report package. These pages most likely concern surrogate recoveries, MS/MSD and blank spike recovery.

The MS/MSD for waters were calculated by hand. ~~and is~~ (see attachment). The MSD %R was out for 4-nitrophenol. the %RPD for both 4-Nitrophenol and PCP were outside the control limits with 56 and 72%, respectively. 3/13/92

The surrogate recoveries on the data summary forms were used for checking the results.

3/26/92

COMMENTS (attach additional sheets as necessary):

The Form I's for the blanks and blank spikes were used along with the associated quant. report in place of the blank summary report.

Samples B00X36 and B00X46 are field duplicates. ~~All~~ The TCL compounds are not detected. Therefore the RPD for the TCLs ~~is~~ were not calculated. There were, however, TICs in these 2 samples. See Form 8-5 for details. The RPD ~~range in~~ for Aldol Condensate is 100% and an unknown was present in B00X36, but not in B00X46 - having an RPD of 200%.

~~A1-8~~ 3/13/92
A2-9

3/26/92

9613443.2175

3C
WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 649

Matrix Spike - EPA Sample No.: SBLKRE

	COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
15	Phenol	100	~~10~~ 0	30	30	12- 89
17	2-Chlorophenol	100	0	68	68	27-123
19	1,4-Dichlorobenzene	50.0	0	25	50	36- 97
25	N-Nitroso-di-n-prop.(1)	50.0	0	27	54	41-116
34	1,2,4-Trichlorobenzene	50.0	0	30	59	39- 98
38	4-Chloro-3-methylphenol	100	0	62	62	23- 97
49	Acenaphthene	50.0	0	34	67	46-118
51	4-Nitrophenol	100	0	16	16	10- 80
53	2,4-Dinitrotoluene	50.0	0	33	66	24- 96
63	Pentachlorophenol	100	0	36	36	9-103
69	Pyrene	50.0	0	34	67	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	100	32	32	6.4	42	12- 89
2-Chlorophenol	100	68	68	0	40	27-123
1,4-Dichlorobenzene	50.0	24	49	2	28	36- 97
N-Nitroso-di-n-prop.(1)	50.0	24	48	12	38	41-116
1,2,4-Trichlorobenzene	50.0	29	58	2	28	39- 98
4-Chloro-3-methylphenol	100	61	61	2	42	23- 97
Acenaphthene	50.0	33	66	1.5	31	46-118
4-Nitrophenol	100	9	9	56	50	10- 80
2,4-Dinitrotoluene	50.0	32	65	2	38	24- 96
Pentachlorophenol	100	17	17	72	50	9-103
Pyrene	50.0	37	75	11	31	26-127

(1) N-Nitroso-di-n-propylamine

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

RPD: 2 out of 11 outside limits
Spike Recovery: 1 out of 22 outside limits

COMMENTS: _____

3/12/92

3D

SOIL SEMIVOLATILE BLANK SPIKE RECOVERY

Lab Name: Roy F. Weston, Inc. Contract: NONE

Case No.: WESTINGHOUSE HANFORD RFW Lot No.: 9105L637

BLANK Spike - Sample No.: SBLKLE0666-MB1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	BS CONCENTRATION (ug/Kg)	BS % REC #	QC LIMITS REC
Phenol	3330	0	3240	97 *	26- 90
2-Chlorophenol	3330	0	2960	89	25-102
1,4-Dichlorobenzene	1670	0	1480	89	28-104
N-Nitroso-Di-n-propylamine	1670	0	1330	80	41-126
1,2,4-Trichlorobenzene	1670	0	1660	100	38-107
4-Chloro-3-methylphenol	3330	0	3080	92	26-103
Acenaphthene	1670	0	1690	101	31-137
4-Nitrophenol	3330	0	1990	60	11-114
2,4-Dinitrotoluene	1670	0	1480	89	28- 89
Pentachlorophenol	3330	0	2400	72	17-109
Pyrene	1670	0	1840	110	35-142

Column to be used to flag recovery value with an asterisk
* Values outside of QC limits

Spike Recovery: 1 out of 11 outside limits

COMMENTS:

3/12/92

HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [signature]	DATE: 03/11/92	PAGE 1 OF 1
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	BNA	05/15/91	05/21/91	06/23/91	6	33	none
B00X36	↓	05/16/91	05/22/91	06/23/91	6	32	↓
B00X46	↓	↓	↓	06/24/91	6	33	↓

9613443.2177

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/11/92	PAGE 1 OF 3		
COMMENTS:					
CALIB. TYPE:	(INITIAL) CONTINUING	INSTRUMENT: 5100SP			
CALIB. DATE	COMPOUND	RF 20	(RSD)/%D/%R	SAMPLES AFFECTED	QUALIFIER
06/18/91	Hexachlorocyclopentadiene	.029	39.3	B00X45	10 R
				B00X36	370 R
				B00X46	370 R
06/18/91	2,4-Dinitrophenol	~~34.~~ 3/11/92	34.5	B00X45	50 UJ
				B00X36	1900 UJ
				B00X46	1900 UJ
06/18/91	4-Nitroaniline		33.6	B00X45	50 UJ
				B00X36	1900 UJ
				B00X46	1900 UJ

8/17/3443.2178

9613443

9105L649

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/11/92	PAGE 2 OF 3
COMMENTS:			
CALIB. TYPE: INITIAL (CONTINUING)		INSTRUMENT: 5100 SP	

CALIB. DATE	COMPOUND	RF	RSD/(%D)/%R	SAMPLES AFFECTED	QUALIFIER
06/23/91	Benzoic Acid		28.8	B00X45	50 uJ
				36	1900 uJ
	Hexachlorocyclopentadiene		34.2	45	already qualified (R)
				36	↓
	3-Nitroaniline		-58.7	45	50 uJ
				36	1900 uJ
	2,4-Dinitrophenol		56.6	45	50 uJ
				36	1900 uJ
	4-Nitrophenol		-57.1	45	50 uJ
				36	1900 uJ
	4,6-Dinitro-2-methyl-phenol		38.6	45	50 uJ
				36	1900 uJ
	Benzo(k)fluoranthene		-25.5	45	10 uJ
				36	370 uJ
	2,4,6-Tribromophenol (surrogate)		-33.8	none	none

96135443.2179

3/26/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [signature]	DATE: 03/11/92	PAGE 3 OF 3		
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT: 5100SP			
CALIB. DATE	COMPOUND	RF	RSD/(%D)/%R	SAMPLES AFFECTED	QUALIFIER
06/24/91	Benzyl alcohol		40.5	800X 46	~~1900 uJ~~ 370 uJ (R) 3/11/92
	Benzoic acid		32.0		1900 uJ
	Hexachlorocyclopentadiene		-31.6		already qualified (R)
	3-Nitroaniline		-68.7		1900 uJ
	2,4-Dinitrophenol		50.8		1900 uJ
	4-Nitrophenol		-31.7		1900 uJ
	4,6-Dinitro-2-methylphenol		30.7		1900 uJ
	3,3'-Dichlorobenzidine		-37.3		750 uJ
	2,4,6-Tribromophenol (surrogate)		-33.8	none	none

9613443.2180

(R) 3/11/92

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 649	REVIEWER: [signature]	DATE: 03/11/92	PAGE 1 OF 1

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SBLKRE	Di-n-butylphthalate	1	J	18.29	ug/L	8 @ 3/10/92	10	none	none
SBLK	Di-n-butylphthalate	48	J	18.28	ug/kg		480	B00X36	200 u
								B00X46	110 u

18127443.21181

PRECISION DATA SUMMARY - FORM B-5

9105L649.

SDG: 649	REVIEWER [illegible]	DATE: 03/12/92	PAGE 1 OF 1

COMMENTS:

COMPOUND	SAMPLE ID: R00X36	SAMPLE ID: R00X46	RPD	SAMPLES AFFECTED	QUALIFIER
Aldol Condensate (TIC) ~~(TIC RT)~~ 3/12/92	(RT=4.40) 600 ABJ	(RT=4.43) 200 ABJ	100	none	none
Unknown (TIC)	(RT=4.70) 300 J	none	200	none	none

9613443.2182

3/12/92

9613443.2183

DRAFT 7/91

PESTICIDE/PCB DATA REVIEW CHECKLIST - FORM A-3

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 03/23/92
LABORATORY: Weston	CASE: 9105L649	SDG: 649
SAMPLES/MATRIX: B00X45 - water		
B00X36 & B00X46 - Soil		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for re-submittal.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	X		
Data Summary	X		
Chain-of-Custody	X		
QC Summary			
Surrogate report	X		
MS/~~MSD~~ report	X		
Blank summary report	X		
Sample Data			
Sample reports	X		
Chromatograms	X		
GC integration reports	X		
Worksheets			
UV traces from GPC		X	
GC/MS confirmation spectra		X	
Standards Data			
Pesticides Evaluation Standards Summary	X		
Pesticides/PCB Standards Summary	X		
Pesticides/PCB identification	X		
Pesticides standard chromatograms	X		
Raw QC Data			
Blank analysis report forms and chromatograms	X		
MS/MSD report forms and chromatograms	X		

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Data Package Item	Present?: Yes	No	N/A
Additional Data			
Moisture/% solids data sheets	—	X	—
Reduction formulae	—	X	—
Instrument time logs	X	—	—
Chemist notebook pages	—	X	—
Sample preparation sheets	X	—	—

2. HOLDING TIMES

Were all samples extracted within holding time?	(Yes)	No	N/A
Were all samples analyzed within holding time?	(Yes)	No	N/A

Action: If any holding times were exceeded, qualify all affected sample results as estimated (J for detects and UJ for non-detects).

3. INSTRUMENT PERFORMANCE AND CALIBRATIONS

3.1 INSTRUMENT PERFORMANCE

Are DDT retention times greater than 12 minutes?	(Yes)	No	N/A
Is resolution between DDT peaks acceptable?	(Yes)	No	N/A
Do all pesticide standards elute within the established retention time windows?	Yes	(No)	N/A
Are DDT breakdowns <20%?	(Yes)	No	N/A
Are endrin breakdowns <20%?	Yes	(No)	N/A
Are DBC retention time differences within specification?	(Yes)	No	N/A

ACTION: If DDT retention time is <12 minutes and resolution is ≤25% qualify associated data as unusable (R). If the standards do not meet the retention time criteria and peaks are not present near or within the retention time windows no sample qualification is necessary. If peaks are near or within the retention time windows and the standards and matrix spikes do not fall within the expanded retention time windows calculated according to the validation requirements, qualify all associated sample results from the last in-control point as unusable (R). If the DDT percent breakdown exceeds 20%, qualify all detected results for DDT as estimated (J) and all non-detects as unusable (R) if DDD and DDE are detected. In addition qualify all results for DDD or DDE as presumptive and estimated (NJ). If the endrin breakdown exceeds 20%, qualify all detected results for endrin as estimated (J) and all non-

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detects as unusable (R) if endrin aldehyde or endrin ketone are detected. In addition qualify all results for endrin ketone as presumptive and estimated (NJ). If DBC %D values are outside the limits and the shift is ocurring repeatedly in samples and standards, qualify affected sample results as unusable (R).

3.2 CALIBRATION

Are RSD values for aldrin, endrin, DDT and DBC ≤10%?	Yes	(No)	N/A
Have all standards been analyzed within 72 hours of any sample?	(Yes)	No	N/A
Has a 3-point calibration been conducted for DDT or toxaphene?	Yes	No	(N/A)
Have all standards been analyzed at the start of each 72h sequence?	(Yes)	No	N/A
Have evaluation standards A, B, and C been analyzed within 72h of any sample?	(Yes)	No	N/A
Has the confirmation standard mix been analyzed after every 5 samples?	(Yes)	No	N/A
Has evaluation standard B analyzed every 10 samples?	(Yes)	No	N/A
Are %D values for initial and subsequent standards ≤15% for quantitation standards and ≤20% for confirmation standards?	Yes	(No)	N/A

ACTION: If the RSD criteria were exceeded or three point calibrations not conducted qualify associated detects as estimated (J). If all standards were not analyzed at the beginning of each 72h sequence qualify associated data as unusable (R). If the confirmation standards were not analyzed properly qualify associated detects as estimated (J). If the continuing calibration criteria were not met qualify associated quantitation data as estimated (J).

4. BLANKS

4.1 LABORATORY BLANKS

Has the laboratory analyzed the method blanks for each matrix in the sample group?	(Yes)	No	N/A
Are target compounds present in the laboratory blanks?	Yes	(No)	N/A

ACTION: Qualify all associated positive results as non-detects (U) that are <5X the highest concentration in any acceptable blank.

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4.2 FIELD BLANKS

Are target compounds present in the field blanks? Yes (No) N/A

ACTION: If target compounds are present in the field blanks qualify all positive sample results <5X the highest valid field blank concentrations as non-detects (U) and note the results in the validation narrative.

5. ACCURACY

5.1 SURROGATE RECOVERY

Are any surrogate recoveries out of specification? Yes (No) N/A

Do any samples show non-detects for surrogates? Yes (No) N/A

Are any method blank surrogates out of specification? Yes (No) N/A

ACTION: Qualify all associated sample results as estimated (J for detects and UJ for non-detects) for surrogates out of specification. If the surrogate was not detected (0% recovery) in the sample qualify associated non-detects as unusable (R). If method blank surrogates are out of specification and sample surrogates are acceptable, no qualification is required however, the laboratory should be contacted for an explanation.

5.2 MATRIX SPIKE RECOVERY

Has the laboratory analyzed a MS/MSD per matrix for the the sample group? They performed an MS, but not an MSD. Yes (No) N/A

Are MS/MSD recoveries within specification? Yes (No) N/A

Are there any calculation or transcription errors? Yes (No) N/A

ACTION: If MS/MSD analyses have not been conducted contact the laboratory for clarification. Review the MS/MSD recoveries in conjunction with other QC data such as surrogate recoveries and note the results in the validation narrative. If it is determined from the review that out of specification MS/MSD recoveries are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

5.3 PERFORMANCE AUDIT SAMPLES

Are performance audit sample results within the acceptance limits? Yes No (N/A)

ACTION: Note the results of the performance audit samples in the validation narrative.

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6. PRECISION

6.1 MATRIX SPIKE/MATRIX SPIKE DUPLICATE SAMPLES

Are the RPD values within specification? Yes No N/A

ACTION: Review the MS/MSD results in conjunction with other QC data such as field duplicates and not the results in the validation narrative. If it is determined from the review that out of specification MS/MSD results are indicative of systematic problems in the laboratory such as sample preparation or sample-specific matrix interferences this must be noted in the validation narrative along with the potential affect on the sample results.

6.2 FIELD DUPLICATE SAMPLES

Are field duplicate RPD values acceptable? Yes No N/A

All results are ND.

ACTION: Note the results of the field duplicate samples in the validation narrative.

6.3 FIELD SPLIT SAMPLES

Are field split RPD values acceptable? Yes No N/A

ACTION: Note the results of the field split samples in the validation narrative.

7. COMPOUND IDENTIFICATION AND QUANTITATION

7.1 COMPOUND IDENTIFICATION

Do positive results meet the retention time window criteria? Yes No N/A

Were positive results analyzed on disimilar columns? Yes No N/A

If dieldrin and DDE were reported was a 3% OV-1 column used for confirmation? Yes No N/A

Do retention times and relative peak height ratios match the expected patterns for multipeak compounds (PCB, toxaphene or chlordane)? Yes No N/A

Has GC/MS confirmation been conducted on sample extract concentrations >10 ppm? Yes No N/A

ACTION: If positive results do not meet the retention time criteria qualify all detected results as non-detects as follows: If the misidentified peak is outside the retention time windows and no interferences are noted report the CRQL and if the misidentified peak interferes with a target peak then the report value is qualified as estimated and non-detected (UJ). If

positive results were not confirmed on disimilar columns, reject affected results (R). If a 3% OV-1 was used to confirm dieldrin and DDE, reject the affected data (R). If PCB, chlordane or toxaphene identification is questionable qualify the results as presumptive and estimated (NJ). If GC/MS confirmation was not conducted contact the laboratory for explanation and note in the validation narrative.

7.2 REPORTED RESULTS AND QUANTITATION LIMITS

Are results and quantitation limits calculated properly? (Yes) No N/A

Has the laboratory reported the sample quantitation limits within five times the CRQL values? (Yes) No N/A

ACTION: If results and quantitation limits are in error contact the laboratory for clarification and note in the validation narrative.

8. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW? (Yes) No N/A

Were project specific data quality objectives met for this analysis? (Yes) No N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10 of the data validation requirements.

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COMMENTS (attach additional sheets as necessary):

Calculations are determined by Peak Height, not peak Area.

A Matrix Spike has been performed in this batch for both matrices; however, a matrix spike duplicate has not been performed for either matrix

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HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 1 OF 1
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	Pest/PCB	05/15/91	05/21/91	06/25/91	6	35	none
B00X36	Pest/PCB	05/16/91	05/22/91	06/25/91	6	34	↓
B00X46	↓	05/16/91	↓	06/25/91	6	34	↓

9613443.2190

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CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 1 OF 8
COMMENTS:			
CALIB. TYPE: INITIAL (CONTINUING)		INSTRUMENT: SP2100	

CALIB. DATE	COMPOUND	~~RF~~ RT	RSD/(%D)/%R	SAMPLES AFFECTED	QUALIFIER
06/25/91 0914 INDB24-56	Delta-BHC	2.69	30.3	none	none
6/25/91 0914 INDB24-56	Endosulfan Sulfate	11.86	20.3	none	none

9613443.2191

3/26/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 2 OF 8
COMMENTS:			
CALIB. TYPE: INITIAL (CONTINUING)		INSTRUMENT: 2250/2401	

CALIB. DATE	COMPOUND	~~RF~~ RT	RSD/(%D)/%R	SAMPLES AFFECTED	QUALIFIER
06/25/91 1315 FNDA 24-55	4,4'-DDT	12.38	27.4	none	none
06/25/91 1315 FNDA 24-55	Methoxychlor	23.46	22.8	none	none

9.52

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2617-3443-2192

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [signature]	DATE: 03/23/92	PAGE 3 OF 8		
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT: 2250/2401			
CALIB. DATE	COMPOUND	~~RF~~ RT	RSD (%D) %R	SAMPLES AFFECTED	QUALIFIER
06/25/91 2335 INDB 24-56	Endrin	8.69	38.1	none	none
06/26/91 0711 IDNA 24-55	4,4'-DDT	12.36	28.1	none	none
06/26/91 0711 IMDA 24-55	Methoxychlor	23.42	22.2	none	none

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9613443.2193

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 4 OF 8
COMMENTS:			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT: SP2100	

CALIB. DATE	COMPOUND	RT	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
06/25/91 2337 INDB 24-56	Alpha-BHC	2.10	19.8	none	none
06/25/91 2337 INDB 24-56	Endrin	8.88	46.2	none	none
06/25/91 2337 INDB 24-56	Endrin Ketone	14.57	out of RT	window (14.52 to ~~14.57~~ 14.56)	2/3/92
				none	none

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96135443.21941

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 5 OF 8
COMMENTS:			
CALIB. TYPE: INITIAL (CONTINUING)		INSTRUMENT: SP2100	

CALIB. DATE	COMPOUND	~~RF~~ RT (03/23/92)	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
06/26/91 0714 INDA 24-55	Endosulfan I	6.84	outside of	RT window	(6.85-6.89)
↓	Endosulfan II	8.96	↓	↓	(8.98-9.02)
↓	4,4'-DDT	12.53	↓	↓	(12.54-12.64)
↓	Methoxychlor	18.10	↓	↓	(18.14-18.24)
				none	none

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9613443.2195

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 6 OF 8		
COMMENTS: Std Summary/Check for Linearity					
CALIB. TYPE: (INITIAL) CONTINUING		INSTRUMENT: SP2100			
CALIB. DATE	COMPOUND	RF	(RSD)/%D/%R	SAMPLES AFFECTED	QUALIFIER
3/23/92 06/24/~~92~~91 (06/24/91)	4,4'-DDT		12.3	none	none

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3/25/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 7 OF 8		
COMMENTS: Std. Summary / Cl. for Linearity					
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT: 2250/2401			
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
06/24/91 (06249109)	Aldrin		14.8	none	none

Pg. 36

96154345.2197

3/24/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 8 OF 8
COMMENTS: Std. Summary/Check for Linearity			
CALIB. TYPE: (INITIAL) CONTINUING		INSTRUMENT: SP2100	

CALIB. DATE	COMPOUND	RF	(RSD)/%D/%R	SAMPLES AFFECTED	QUALIFIER
pg. 35 06/24/91 (06249104)	Aldrin		16.8	none	none
pg. 35	4,4'-DDT		23.4	none	none

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(52) 3/26/92

DDT/Endrin Breakdown

~~CALIBRATION DATA SUMMARY~~ - FORM B-2

SDG:	REVIEWER:	DATE:	PAGE 1 OF 1
COMMENTS:			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT:	

	CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
pg. 147	AR1660 02-52 6/24/91 1413	Endrin Breakdown =	27.7% (height)	41.8% (Area)	None	none
		~~Endrin~~				
pg. 173	EvalA 13-60 6/24/91 1059	Endrin Breakdown =	32.3 (height)	40.0% (Area)	none	none
pg. 175	EVALB 14-60 6/24/91 1131	Endrin Breakdown =	29.7% (height)	37.6% (Area)	none	none
pg. 177	EVAL C 12-60 6/24/91 1204	Endrin Breakdown	27.2% (height)	34.2% (Area)	none	none

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9613443.2199

ACCURACY DATA SUMMARY - FORM B-4

SDG: 91C5L649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 1 OF 2	
COMMENTS: Blank Spike/Water				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
BLKLE0656-MB1 BS(Blank Spike water)	gamma-BHC	385	none	none
↓	4,4'-DDT	144	none	none
An MSD was not performed				

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ACCURACY DATA SUMMARY - FORM B-4

SDG: 910SL649	REVIEWER: [illegible]	DATE: 03/23/92	PAGE 2 OF 2	
COMMENTS: Blank Spike/Soil				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
PBLKLE0666-MB2 Blank Spike-Soil	Endrin	146	none	none
An MSD was not performed				

10022443.2201

PRECISION DATA SUMMARY - FORM B-5

SDG: 649	REVIEWER SMillinoo	DATE: 03/23/92	PAGE 1 OF 1

COMMENTS: Field Duplicate / Soils

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
All Pest/PCB compounds	800X36	800X46	NC		
	All results	are "~~non-detect~~" 3/23/92 below the			
	detection	limit.			
		SMillinoo		3/23/92	

NC= Not calculated.

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96113443.2202

WET CHEMISTRY DATA REVIEW CHECKLIST - FORM A-7

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 03/10/92
LABORATORY: Weston	CASE: 91052649	SDG: CLP649
SAMPLES/MATRIX: B00X45/ water		
B00X36, B00X46/ Soils		

1. DATA PACKAGE COMPLETENESS

Review the data package for completeness and check off the items below. If any data review elements are missing contact the laboratory for submittal of the omitted data.

Data Package Item	Present?: Yes	No	N/A
Case Narrative	X		
Cover Page	X		
Traffic Reports/Chain-of-Custody	X		
Sample Analysis Data Report Forms	X		
Standards Data	X		
QC Summary			
Blanks Summary Report Forms	X		
Spike Sample Recovery Report Forms	X		
Duplicate Sample Analysis Report Forms	X		
Laboratory Control Sample Report Forms	X		
Raw Data			
Ion Chromatograph Chromatograms	X		
TOC and TOX Instrument Printouts			X
Laboratory Bench Sheets	X		
Additional Data			
Laboratory Sample Preparation Logs	X		
Instrument Run Logs	X		
Internal Laboratory Chain-of-Custory		X	
Percent Solids Analysis Records	X		
Reduction Formulae		X	
Chemist Notebook Pages		X	

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2. HOLDING TIMES

Were all samples analyzed within holding times? Yes (No) N/A

Action: If any holding times were exceeded qualify all affected results as estimated (J for detects and UJ for non-detects).

3. INITIAL CALIBRATIONS

Were all instruments calibrated daily, each set-up time and were the proper number of standards used? (Yes) No N/A

Are the correlation coefficients ≥0.995? (Yes) No N/A

Was a balance check conducted prior to the TDS analysis? Yes No (N/A)

Was the titrant normality checked? Yes No (N/A)

ACTION: Qualify all data as unusable (R) if reported from an analysis in which the above criteria were not met.

4. INITIAL AND CONTINUING CALIBRATION VERIFICATION

Are ICV and CCV percent recoveries within control? Yes (No) N/A

Are there calculation errors? Yes (No) N/A

ACTION: Qualify all affected data in accordance with the validation requirements.

5. LABORATORY BLANKS

Are target analytes present in the ~~field~~ lab blanks? Yes (No) N/A

ACTION: Qualify all associated sample results for any analyte <5X the amount in any laboratory blank as non-detected (U) and list the affected samples and analytes below.

6. FIELD BLANKS

Are target analytes present in the field blanks? (Yes) No N/A

ACTION: Qualify all sample results for any analyte <5X the amount in any valid field blank as non-detected (U).

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7. MATRIX SPIKE SAMPLE ANALYSIS

Are spike recoveries within the acceptance limits? (Yes) No N/A

ACTION: If spike recovery is outside the control limits and the sample results are greater than the CRQL, qualify the data as estimated (J). If the spike recovery is less than 30% and the sample results are less then the IDL qualify the data as unusable (R).

8. LABORATORY CONTROL SAMPLE

Are percent recoveries within the acceptance limits? (Yes) No N/A

Are there calculation errors? Yes (No) N/A

ACTION: Qualify the affected results according to the following requirements:

AQUEOUS LCS - Qualify as estimated (J), all sample results > IDL, for which the LCS %R falls within the range 50-79% or > 120%. Qualify as estimated (UJ), all sample results < IDL, for which the LCS falls within the range of 50-79%. Qualify as unusable (R) all sample results, for which the LCS %R <50%.

SOLID LCS - Qualify as estimated (J), all sample results > IDL for which the LCS %R is outside the established control limits. Qualify as estimated (UJ), all sample results < IDL for which the LCS %R are lower than the established control limits.

9. PERFORMANCE AUDIT ANALYSES

Are the performance audit sample results within the acceptance limits? Yes No (N/A)

ACTION: Note the results of the performance audit samples in the validation narrative.

10. DUPLICATE SAMPLE ANALYSIS

Are RPD values within the acceptance limits? (Yes) No N/A

Action: Qualify the results for all associated samples of the same matrix as estimated (J) if the RPD falls outside the acceptance limits.

11. FIELD DUPLICATE SAMPLES

Do RPD values exceed the acceptance limits? Yes (No) N/A

ACTION: Note the results of the field duplicate samples in the validation narrative.

12. FIELD SPLIT SAMPLES

Do RPD values exceed the acceptance limits? Yes No (N/A)

ACTION: Note the results of the field split samples in the validation narrative.

13. ANALYTE QUANTITATION AND DETECTION LIMITS

Have results been reported and calculated correctly? (Yes) No N/A

Are instrument detection limits below the CRDL? (Yes) No N/A

Action: If analyte quantitation is in error, contact the laboratory for explanation. If errors or deficiencies can not be resolved with the laboratory, qualify associated data as unusable (R).

14. OVERALL ASSESSMENT AND SUMMARY

Has the laboratory conducted the analysis in accordance with the analytical SOW? (Yes) No N/A

Were project specific data quality objectives met for this analysis? (Yes) No N/A

ACTION: Summarize all the data qualifications and complete the data validation narrative as specified in Section 10 of the data validation requirements.

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COMMENTS (attach additional sheets as necessary):

NO_2/NO_3 - the result for the matrix spike was reported (.86) mg/L instead of the result for the original sample (.28 mg/L)

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HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 1 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	Phosphate	05/15/91		05/22/91		7	.25 UJ

9613443.2208

[illegible] 3/26/92

HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 2 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	Nitrate	05/15/91		05/22/91		7	.25 US

9613443.2209

HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 3 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	Nitrite	05/15/91		05/22/91		7	.2545

9613443.2210

HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 4 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	Chloride	05/15/91		05/22/91		7	none

96134343.2211

HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [signature]	DATE: 03/10/92	PAGE 5 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	Fluoride	05/15/91		05/22/91		7	none

2172*344319 6

HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [signature]	DATE: 03/10/92	PAGE 6 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	Sulfate	05/15/91		05/22/91		7	none

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HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 7 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	Cyanide	05/15/91	05/25/91	05/25/91	10	10	none

4127-3443-2214

HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 8 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X36	Percent Solids	05/16/91		05/24/91		8	none
B00X46	↓	↓		↓		8	↓

9613443.2215

HOLDING TIME SUMMARY - FORM B-1

SDG: 649	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 9 OF 9
COMMENTS:			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
B00X45	NO2/NO3	05/15/91		05/30/91		15	none

9113443.2216

2/26

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 649	REVIEWER: [signature]	DATE: 03/10/92	PAGE 1 OF 1		
COMMENTS:					
CALIB. TYPE:	INITIAL	CONTINUING	INSTRUMENT:		
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/30/91	Nitrate + Nitrite		72%	none	none

9613443.2217

5/26/92

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 649	REVIEWER: [illegible]	DATE: 03/31/92	PAGE 1 OF 1
COMMENTS: Field Blank			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
B00X45	Nitrate/Nitrite	.28		.	mg/L	1.40		None	none

3/31/92

9613443.2218