140

91032117-WES-017

WESTON Analytics Use Only

91032117

WS-HANFORD

Custody Transfer Record/Lab Work Request

WESTON

Client: Westinghouse Hanford
Work Order: 61168-02-01
Date Rec'd: 3/29/91 Date Due: 5/3/91
RFW Contact: King
Client Contact/Phone: 4222

Refrigerator#	1	6	6	3	4	1	3	3	3
#/Type Container	3/G	1/G	→	1/P	1/P	1/G	1/P	1/P	1/P
Volume	40	gal	→	LTR	4 gal	125ml	LTR	LTR	LTR
Preservative	none	none	→	HNO3		H2SO4	HNO3 to pH<2	None	NaOH
ANALYSES REQUESTED	VOA	P/PCB	BNA	metal	RAD WORK	TOC	Anions	Anions	CN-

WA Use Only Lab ID	Client ID/Description	Matrix	Date Collected	VOA	P/PCB	BNA	metal	RAD WORK	TOC	Anions	Anions	CN-
001	B00 EB1	W	3/27/91	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	EB2						✓					
3	FH8			✓								
4	F38			✓								
5	FC8			✓	✓	✓	✓	✓	✓	✓	✓	✓
6	FC9						✓					

Inorg (1) = PH, Spc, ALKL, TDS, SO4
Inorg (2) = HARD, NH3N, NO2N3
Anion = ICCL, ICFL, ICSO4, ICPO4, ICNO3, ICNO2
RAD WORK = Gross Alpha, Gross Beta, Radium, SR-90, TC-90,

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

Special Instructions: CS-137, CO-60, PU-239, PU-239/240
QC/Dal = CLP
TAT = 35 day

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
Emery	[signature]	[signature]	3/29/91	[illegible]					
PH SPCOND	[signature]	[signature]	3/29/91	4:20					
Anions	[signature]	[signature]	3/29/91	4:20					

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: pH, Spc & rest of [illegible]

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

START 0046092 000000 2

VOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-001

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

Lab File ID: 0040112

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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	1	JB
67-64-1	Acetone	6	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	11	B
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

9215512.0991

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000017

CLIENT SAMPLE NO.

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-001

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

Lab File ID: 0040112

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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.				

9216512.0992

1A

VOLATILE ORGANICS ANALYSIS SHEET

0000027

CLIENT SAMPLE NO.

B00FH8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-003

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

Lab File ID: 0040113

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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	3	JB
67-64-1	Acetone	5	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	4	J
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Xylene (total)	5	U

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000028

CLIENT SAMPLE NO.

B00FH8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-003

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

Lab File ID: 0040113

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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.				

91A3512.0004

VOLATILE ORGANICS ANALYSIS SHEET 0000039

CLIENT SAMPLE NO.

BOOF38

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-004

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

Lab File ID: 0040114

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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	6	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	3	J
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	17	B
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

9103512.0995

VOLATILE ORGANICS ANALYSIS SHEET 0000040
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

B00F38

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-004

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

Lab File ID: 0040114

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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.				

9143512.0996

VOLATILE ORGANICS ANALYSIS SHEET 0000052

CLIENT SAMPLE NO.

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005

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

Lab File ID: 0040115

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/02/91

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	4	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	B
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

07 FEB 2 0997

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000053

CLIENT SAMPLE NO.

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005

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

Lab File ID: 0040115

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/02/91

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.				

9204512.0998

VOLATILE ORGANICS ANALYSIS SHEET 0000096

CLIENT SAMPLE NO.

VBLK

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 91LV0005-MB1

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

Lab File ID: 0040103

Level: (low/med) LOW

Date Received: 04/01/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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	4	J
67-64-1	Acetone	15	
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	3	J
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	3	J
591-78-6	2-Hexanone	7	J
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

9713512.0999

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000097

CLIENT SAMPLE NO.

VBLK

Lab Name: Roy F. Weston, Inc. Work Order: 6158-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 91LV0005-MB1

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

Lab File ID: 0040103

Level: (low/med) LOW

Date Received: 04/01/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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.				

9243512.1000

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000019

CLIENT SAMPLE NO.

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: L042508

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/25/91

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

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
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

9213512.1001

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

0000020

CLIENT SAMPLE NO.

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042508

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/25/91

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

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

CAS NO.	COMPOUND		
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	3	JB
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

9213512.1002

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS 0000021

CLIENT SAMPLE NO.

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: L042508

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/25/91

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

Dilution Factor: 1.00

Number TICs found: 11

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.00	10	J
2.	UNKNOWN	10.33	4	J
3.	HYDROCARBON	18.55	7	J
4.	UNKNOWN	19.53	4	J
5.	HYDROCARBON	20.02	1000	JB
6.	UNKNOWN	20.35	40	J
7.	UNKNOWN	20.45	40	J
8.	UNKNOWN	20.62	30	J
9.	HYDROCARBON	20.83	20	J
10.	HYDROCARBON	21.43	40	J
11.	UNKNOWN	21.98	20	J

9713512.1003

1º

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000042

CLIENT SAMPLE NO.

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-005

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042605

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/26/91

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

9213512.1004

1c

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000043

CLIENT SAMPLE NO.

B00FC8

Lab Name: Roy F. Weston, Inc. Work Order: 5168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: L042605

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/26/91

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

9713512.1005

17

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

000044

CLIENT SAMPLE NO.

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: L042605

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/26/91

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

Dilution Factor: 1.00

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	TRICHLOROPROPENE	5.88	20	JB
2.	UNKNOWN	9.17	4	JB
3.	HYDROCARBON	20.00	200	JB
4.	HYDROCARBON	21.97	7	J

9113512.1006

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000179

CLIENT SAMPLE NO.

SBLK

Lab Name: Roy F. Weston, Inc. Work Order: 5168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 91LE0430-MB1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V042405

Level: (low/med) LOW Date Received: 04/01/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/24/91

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

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000180

CLIENT SAMPLE NO.

SBLK

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 91LE0430-MB1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V042405

Level: (low/med) LOW Date Received: 04/01/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/24/91

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	2	J
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	1	J
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

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000181

CLIENT SAMPLE NO.

SBLK

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 91LE0430-MB1

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

Lab File ID: V042405

Level: (low/med) LOW

Date Received: 04/01/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/24/91

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

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	CYCLOHEXENONE	7.63	4	J
2.	TRICHLOROPROPENE	7.95	10	J
3.	UNKNOWN	8.15	10	J
4.	UNKNOWN	12.05	6	J
5.	HYDROCARBON	24.80	5	J

97 APR 12 1009

SEMIVOLATILE ORGANICS ANALYSIS SHEET

0000198

CLIENT SAMPLE NO.

SBLKMS

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 91LE0430-MB1 BS

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

Lab File ID: V042406

Level: (low/med) LOW

Date Received: 04/01/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/24/91

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		S
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol		S
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene		S
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		S
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		S
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		S
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

S: SPIKE COMPOUND

FORM 1 SV-1

12/88 Rev.

9143512.1010

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000199

CLIENT SAMPLE NO.

SBLKMS

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 91LE0430-MB1 BS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: V042406

Level: (low/med) LOW Date Received: 04/01/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/24/91

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		S
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol		S
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene		S
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		S
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	2	JB
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene		S
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

S: SPIKE COMPOUND

9113512.1011

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000206

CLIENT SAMPLE NO.

B00FC8MS

Lab Name: Roy F. Weston, Inc. Work Order: G168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-005 MS

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042606

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/26/91

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		S
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol		S
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene		S
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		S
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		S
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		S
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

S: SPIKE COMPOUND

9113512.1012

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000207

CLIENT SAMPLE NO.

B00FC8MS

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-005 MS

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042606

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/26/91

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		S
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol		S
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene		S
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		S
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		S
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	1	JB
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

S: SPIKE COMPOUND

9143512.1013

SEMIVOLATILE ORGANICS ANALYSIS SHEET

0000214

CLIENT SAMPLE NO.

B00FC8MSD

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-005 MSD

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042511

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/25/91

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

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

CAS NO.	COMPOUND		
108-95-2	Phenol		S
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol		S
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene		S
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		S
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		S
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		S
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

S: SPIKE COMPOUND

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000215

CLIENT SAMPLE NO.

B00FC8MSD

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005 MSD

Sample wt/vol: 990 (g/mL) ML

Lab File ID: L042511

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/25/91

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

Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene		S
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol		S
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene		S
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		S
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
84-74-2	Di-n-Butylphthalate	2	JB
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene		S
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	2	JB
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

S: SPIKE COMPOUND

9713512.1015 0000014

1D

CLIENT SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS SHEET

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-001

Sample wt/vol: 960 (g/mL) ML Lab File ID: 05089103.31

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/08/91

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	0.052	U
319-85-7	Beta-BHC	0.052	U
319-86-8	Delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	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	0.52	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.52	U
5103-74-2	gamma-Chlordane	0.52	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

LB 1/12/91

9713512.1016

0000019

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: 05089103.34

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 05/08/91

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

JKB 6/26/91

9713512.1017 0000147

1D

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

PBLK

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 91LE0429-MB1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 05089103.56

Level: (low/med) LOW Date Received: 04/01/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/09/91

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

JEB 6/26/91

9713512.1018

1D

0000152 CLIENT SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS SHEET

PBLKMS

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 91LE0429-MB1 BS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BLK0608H.01

Level: (low/med) LOW Date Received: 04/01/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/09/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.00

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

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.10	B
319-85-7	Beta-BHC	0.040	JB
319-86-8	Delta-BHC	0.10	U
58-89-9	gamma-BHC (Lindane)		S
76-44-8	Heptachlor		S
309-00-2	Aldrin		S
1024-57-3	Heptachlor epoxide	0.10	U
959-98-8	Endosulfan I	0.10	U
60-57-1	Dieldrin		S
72-55-9	4,4'-DDE	0.20	U
72-20-8	Endrin		S
33213-65-9	Endosulfan II	0.20	U
72-54-8	4,4'-DDD	0.20	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT		S
72-43-5	Methoxychlor	1.0	U
53494-70-5	Endrin ketone	0.20	U
5103-71-9	alpha-Chlordane	1.0	U
5103-74-2	gamma-Chlordane	1.0	U
8001-35-2	Toxaphene	2.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	2.0	U
11096-82-5	Aroclor-1260	2.0	U

JB 6/27/91

S: SPIKE COMPOUND FORM 1 PEST 12/88 Rev.

9713512.1019

0000157 CLIENT SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS SHEET

PBLKMSD

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 91LE0429-MB1 BSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: BLK0608H.01

Level: (low/med) LOW Date Received: 04/01/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/09/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.00

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

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.090	JB
319-85-7	Beta-BHC	0.10	U
319-86-8	Delta-BHC	0.10	U
58-89-9	gamma-BHC (Lindane)		S
76-44-8	Heptachlor		S
309-00-2	Aldrin		S
1024-57-3	Heptachlor epoxide	0.10	U
959-98-8	Endosulfan I	0.10	U
60-57-1	Dieldrin		S
72-55-9	4,4'-DDE	0.20	U
72-20-8	Endrin		S
33213-65-9	Endosulfan II	0.20	U
72-54-8	4,4'-DDD	0.20	U
1031-07-8	Endosulfan sulfate	0.20	U
50-29-3	4,4'-DDT		S
72-43-5	Methoxychlor	1.0	U
53494-70-5	Endrin ketone	0.20	U
5103-71-9	alpha-Chlordane	1.0	U
5103-74-2	gamma-Chlordane	1.0	U
8001-35-2	Toxaphene	2.0	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	2.0	U
11096-82-5	Aroclor-1260	2.0	U

JEB 6/27/91

S: SPIKE COMPOUND FORM 1 PEST 12/88 Rev.

0000163 CLIENT SAMPLE NO.

1D 9T3512 1020

PESTICIDE ORGANICS ANALYSIS SHEET

BOOFB1MS

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-001 MS

Sample wt/vol: 960 (g/mL) ML Lab File ID: 05089103.54

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/09/91

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.00

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

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.094	JB
319-85-7	Beta-BHC	0.052	JB
319-86-8	Delta-BHC	0.10	U
58-89-9	gamma-BHC (Lindane)		S
76-44-8	Heptachlor		S
309-00-2	Aldrin		S
1024-57-3	Heptachlor epoxide	0.10	U
959-98-8	Endosulfan I	0.10	U
60-57-1	Dieldrin		S
72-55-9	4,4'-DDE	0.21	U
72-20-8	Endrin		S
33213-65-9	Endosulfan II	0.21	U
72-54-8	4,4'-DDD	0.21	U
1031-07-8	Endosulfan sulfate	0.21	U
50-29-3	4,4'-DDT		S
72-43-5	Methoxychlor	1.0	U
53494-70-5	Endrin ketone	0.21	U
5103-71-9	alpha-Chlordane	1.0	U
5103-74-2	gamma-Chlordane	1.0	U
8001-35-2	Toxaphene	2.1	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	2.1	U
11096-82-5	Aroclor-1260	2.1	U

JEB 6/27/91

S: SPIKE COMPOUND FORM 1 PEST 12/88 Rev.

9713512.1021 0000168

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

BOOFB1MSD

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-001 MSD

Sample wt/vol: 960 (g/mL) ML

Lab File ID: 05089103.55

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 05/09/91

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

Dilution Factor: 2.00

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

CAS NO.	COMPOUND		
319-84-6	Alpha-BHC	0.094	JB
319-85-7	Beta-BHC	0.062	JB
319-86-8	Delta-BHC	0.10	U
58-89-9	gamma-BHC (Lindane)		S
76-44-8	Heptachlor		S
309-00-2	Aldrin		S
1024-57-3	Heptachlor epoxide	0.10	U
959-98-8	Endosulfan I	0.10	U
60-57-1	Dieldrin		S
72-55-9	4,4'-DDE	0.21	U
72-20-8	Endrin		S
33213-65-9	Endosulfan II	0.21	U
72-54-8	4,4'-DDD	0.21	U
1031-07-8	Endosulfan sulfate	0.21	U
50-29-3	4,4'-DDT		S
72-43-5	Methoxychlor	1.0	U
53494-70-5	Endrin ketone	0.21	U
5103-71-9	alpha-Chlordane	1.0	U
5103-74-2	gamma-Chlordane	1.0	U
8001-35-2	Toxaphene	2.1	U
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	2.1	U
11096-82-5	Aroclor-1260	2.1	U

JCB 4/27/91

S: SPIKE COMPOUND

FORM 1 PEST

12/88 Rev.

9713512.1022

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 04/26/91

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9103L117

WORK ORDER: 6168-02-01-0000

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	BOOFB1	Alkalinity	104	MG/L	2.0
		Chloride by IC	7.5	mg/L	0.25
		Fluoride by IC	0.63	mg/L	0.25
		Nitrite by IC	0.25 u	mg/L	0.25
		Nitrate by IC	36.7	mg/L	5.0
		Cyanide, Total	12.8	UG/L	10.0
		Phosphate by IC	0.25 u	mg/L	0.25
		Sulfate by IC	41.8	mg/L	2.5
		Hardness	135	MG/L	2.0
		Nitrate Nitrite	8.8	MG/L	5.0
		Ammonia, as N	0.10 u	MG/L	0.10
		Total Organic Carbon	1.6	MG/L	0.50
		pH	8.0	PH UNITS	0.010
		Sulfate	19.7	MG/L	5.0
		Specific Conductance	324	UMHOS/CM	1.0
		Total Dissolved Solids	251	MG/L	5.0
-005	BOOFC8	Alkalinity	104	MG/L	2.0
		Chloride by IC	7.3	mg/L	0.25
		Fluoride by IC	0.62	mg/L	0.25
		Nitrite by IC	0.25 u	mg/L	0.25
		Nitrate by IC	73.5	mg/L	5.0
		Cyanide, Total	13.9	UG/L	10.0
		Phosphate by IC	0.25 u	mg/L	0.25
		Sulfate by IC	40.2	mg/L	2.5
		Hardness	150	MG/L	2.0
		Nitrate Nitrite	88.8	MG/L	10.0
		Ammonia, as N	0.10 u	MG/L	0.10
		Total Organic Carbon	4.3	MG/L	0.50
		pH	7.7	PH UNITS	0.010
		Sulfate	37.5	MG/L	5.0
		Specific Conductance	371	UMHOS/CM	1.0
		Total Dissolved Solids	287	MG/L	5.0

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ROY F. WESTON INC.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/26/91

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

WESTON BATCH #: 9103L117

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK10	91LAL010-MB1	Alkalinity	0.50 u	MG/L	0.50
BLANK20	91LAL010-MB2	Alkalinity	0.50 u	MG/L	0.50
BLANK30	91LAL010-MB3	Alkalinity	0.50 u	MG/L	0.50
BLANK40	91LAL010-MB4	Alkalinity	0.50 u	MG/L	0.50
BLANK50	91LAL010-MB5	Alkalinity	0.50 u	MG/L	0.50
BLANK1	91LIC26-MB1	Chloride by IC	0.25 u	mg/L	0.25
		Fluoride by IC	0.25 u	mg/L	0.25
		Nitrite by IC	0.25 u	mg/L	0.25
		Nitrate by IC	0.25 u	mg/L	0.25
		Phosphate by IC	0.25 u	mg/L	0.25
		Sulfate by IC	0.25 u	mg/L	0.25
BLANK1	91LC123-MB1	Cyanide, Total	10.0 u	UG/L	10.0
BLANK10	91LHD006-MB1	Hardness	1.0 u	MG/L	1.0
BLANK20	91LHD006-MB2	Hardness	1.0 u	MG/L	1.0
BLANK10	91LNO129-MB1	Nitrate Nitrite	0.10 u	MG/L	0.10

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ROY F. WESTON INC.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/26/91

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9103L117

WORK ORDER: 6168-02-01-0000

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
BLANK10	91LAM042-MB1	Ammonia, as N	0.10 u	MG/L	0.10
BLANK20	91LAM042-MB2	Ammonia, as N	0.10 u	MG/L	0.10
BLANK30	91LAM042-MB3	Ammonia, as N	0.10 u	MG/L	0.10
BLANK10	91LTC065-MB1	Total Organic Carbon	0.50 u	MG/L	0.50
BLANK20	91LTC065-MB2	Total Organic Carbon	0.50 u	MG/L	0.50
BLANK30	91LTC065-MB3	Total Organic Carbon	0.50 u	MG/L	0.50
BLANK10	91LS4025-MB1	Sulfate	5.0 u	MG/L	5.0
BLANK20	91LS4025-MB2	Sulfate	5.0 u	MG/L	5.0
BLANK30	91LS4025-MB3	Sulfate	5.0 u	MG/L	5.0
BLANK40	91LS4025-MB4	Sulfate	5.0 u	MG/L	5.0

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ROY F. WESTON INC.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/26/91

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

WESTON BATCH #: 9103L117

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
BLANK10	91LSP030-MB1	Specific Conductance	1.0	u	UMHOS/CM	1.0
BLANK20	91LSP030-MB2	Specific Conductance	1.0	u	UMHOS/CM	1.0
BLANK10	91LSS032-MB1	Total Dissolved Solids	5.0	u	MG/L	5.0

9713512.1026 ROY F. WESTON INC.

INORGANICS ACCURACY REPORT 04/26/91

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

WESTON BATCH #: 9103L117

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
-005	B00FC8	Ammonia, as N	0.97	0.10u	1.0	96.6
BLANK10	91LAL010-MB1	Alkalinity	98.0	0.50u	100	98.0
BLANK20	91LAL010-MB2	Alkalinity	96.0	0.50u	100	96.0
BLANK30	91LAL010-MB3	Alkalinity	100	0.50u	100	100
BLANK40	91LAL010-MB4	Alkalinity	98.0	0.50u	100	98.0
BLANK50	91LAL010-MB5	Alkalinity	102	0.50u	100	102
BLANK1	91LIC26-MB1	Chloride by IC	5.6	0.25u	5.0	112
		Fluoride by IC	11.7	0.25u	10.0	117
		Nitrite by IC	5.8	0.25u	5.0	115
		Nitrate by IC	5.5	0.25u	5.0	110
		Phosphate by IC	5.6	0.25u	5.0	113
		Sulfate by IC	5.6	0.25u	5.0	111
BLANK10	91LHD006-MB1	Hardness	100	1.0 u	100	100
		Hardness MSD	110	1.0 u	109	101
BLANK20	91LHD006-MB2	Hardness	100	1.0 u	100	100
BLANK10	91LNO129-MB1	Nitrate Nitrite	0.44	0.10u	0.40	110
		Nitrate Nitrite MSD	0.42	0.10u	0.40	105

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ROY F. WESTON INC.

INORGANICS ACCURACY REPORT 04/26/91

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9103L117

WORK ORDER: 6168-02-01-0000

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV
BLANK10	91LAM042-MB1	Ammonia, as N	10.7	0.10u	10.0	107
		Ammonia, as N MSD	0.20	0.10u	0.20	99.0
BLANK20	91LAM042-MB2	Ammonia, as N	1.1	0.10u	1.0	110
BLANK30	91LAM042-MB3	Ammonia, as N	0.20	0.10u	0.20	101
BLANK10	91LTC065-MB1	Total Organic Carbon	4.8	0.50u	5.0	96.9
		Total Organic Carbon	4.8	0.50u	5.0	96.9
BLANK20	91LTC065-MB2	Total Organic Carbon	9.6	0.50u	10.0	95.7
BLANK30	91LTC065-MB3	Total Organic Carbon	2.5	0.50u	2.5	101
BLANK10	91LS4025-MB1	Sulfate	20.8	5.0 u	20.0	104
		Sulfate	21.1	5.0 u	20.0	106
BLANK20	91LS4025-MB2	Sulfate	21.1	5.0 u	20.0	106
BLANK30	91LS4025-MB3	Sulfate	31.1	5.0 u	30.0	104
BLANK40	91LS4025-MB4	Sulfate	42.4	5.0 u	40.0	106

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ROY F. WESTON INC.

INORGANICS ACCURACY REPORT 04/26/91

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9103L117

WORK ORDER: 6168-02-01-0000

SAMPLE	SITE ID	ANALYTE		SPIKED SAMPLE	INITIAL RESULT		SPIKED AMOUNT	%RECOV
BLANK10	91LSP030-MB1	Specific Conductance		143	1.0	u	147	97.3
		Specific Conductance	M	140	1.0	u	147	95.2
BLANK20	91LSP030-MB2	Specific Conductance		697	1.0	u	718	97.1

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ROY F. WESTON INC.

INORGANICS DUPLICATE SPIKE REPORT 04/26/91

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

WESTON BATCH #: 9103L117

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
LCS2	91LC123-LC2	Cyanide, Total LCS	97.5	97.8	0.31
BLANK10	91LHD006-MB1	Hardness	100	101	0.90
BLANK10	91LNO129-MB1	Nitrate Nitrite	110	105	5.1
BLANK10	91LAM042-MB1	Ammonia, as N	107	99.0	7.8
BLANK10	91LTC065-MB1	Total Organic Carbon	96.9	96.9	0.00
BLANK10	91LS4025-MB1	Sulfate	104	106	1.6
BLANK10	91LSP030-MB1	Specific Conductance	97.3	95.2	2.1

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ROY F. WESTON INC.

INORGANICS PRECISION REPORT 04/26/91

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

WESTON BATCH #: 91031117

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	% DIFF
-001REP	B00FB1	pH	8.0	8.0	0.12
		Specific Conductance	324	324	0.00
-005REP	B00FC8	Ammonia, as N	0.10u	0.10u	NC

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ROY F. WESTON INC.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/26/91

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	91LC123-LC1	Cyanide, Total LCS	97.5	100	UG/L	97.5
LCS2	91LC123-LC2	Cyanide, Total LCS	97.8	100	UG/L	97.8

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Report To

Westinghouse Hanford Company
Richland, Washington

Data Validation Report
200-BP-1 RI/FS
Data Package: 9103L117-WES-017
SDG No.: CLP117
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 6, 1992

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TABLE OF CONTENTS

	Page No.
1. INTRODUCTION	1
2. DATA QUALITY OBJECTIVES	1
3. QUALIFIED DATA	1
3.1 Major Deficiencies	2
3.2 Minor Deficiencies	2
3.2.1 Volatile Organics	2
3.2.2 Semivolatile Organics	3
3.2.3 Pesticide/PCB Organics	3
3.2.4 Wet Chemistry	4
4. CONCLUSIONS	4
5. REFERENCES	5

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: CLP117 consisting of four (4) water samples all for contract laboratory program/target compound list (CLP/TCL) volatiles, and two (2) samples for CLP/TCL semivolatiles, pesticides and PCBs, CLP target analyte list (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). Total organic carbon (TOC) was analyzed by method 505.B (APHA, 1985). Hardness, specific conductance, ammonia, sulfate, pH, total dissolved solids (TDS), alkalinity and nitrate+nitrite were analyzed using EPA methods (EPA, 1979).

Sample B00FC8 was identified as a trip blank; the associated results are non-detects with the exception of four tentatively identified compounds in the semivolatile fraction and several compounds present in the wet chemistry parameters. The samples B00FB1 and B00FC8 appear to be field duplicates for the wet chemistry fraction. A blank precision form, reporting the relative percent difference, was generated for the wet chemistry results (see Attachment 4).

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 metals and cyanide. Standard methods were specified for the analysis of wet chemistry parameters.

Sample quantitation limits were less than the CRQL specified in the QAPjP (DOE, 1989), and 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

2-Butanone results in all four samples, (B00FB1, B00FH8, B00F38, and B00FC8) was rejected due to the response factors being less than 0.05 in the associated initial calibration.

Hardness data in samples B00FB1 and B00FC8 was rejected since the raw data submitted for hardness is difficult to read due to the poor quality of the copy. Also, it appears that neither an ICV, CCV or standards were analyzed before or during the sample runs.

Nitrate+nitrite results determined by the hydrazine reduction method 353.1 (EPA 1979) are rejected since they do not compare favorably with the IC data. Results for nitrate+nitrite are typically five times lower than the same results determined by IC. This may be due to acid preservation of the nitrate+nitrite samples which causes oxidation of any nitrite present to nitrate. If the samples are not pH adjusted to between 5 and 9 prior to analysis, reduction of nitrate to nitrite during application of the hydrazine reagent may be inhibited, though sodium hydroxide reagent is applied during analysis.

Ammonia data in all samples is rejected since no method reference was provided in the data package. In addition, based on the raw data supplied, we are unable to confirm or recalculate any of the results. The raw data for ammonia is included in Attachment 4 of this report for reference purposes.

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 Volatile Organics

- The volatile matrix spike/matrix spike duplicate (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 MS/MSD relative percent difference (RPD) for chlorobenzene was 14%; the control limit for this compound is 13%.

- The initial calibration percent relative standard deviation (RSD) for 1-hexanone was 46.9%. The associated samples, B00FB1, B00FH8, BooF38, and B00FC8 were qualified as estimated (UJ) for this compound.

- The continuing calibrating percent difference (%D) for acetone, 1,1-dichloroethane, and 2-butanone were out of the control limits. The associated samples were qualified as estimated (UJ) for acetone and 1,1-dichloroethane. The 2-butanone results were not qualified since they were already rejected due to the internal calibration response factor.

- Several volatile compounds were detected in the laboratory method blank (see Attachment 4). Sample concentrations in the associated samples for these compounds were qualified as non-detect (U).

3.2.2 Semivolatile Organics

- The semivolatile MS/MSD percent recoveries (%R) for phenol were out of the control limits at 94% and 92%, respectively. The relative percent difference (RPD) for pentachlorophenol was 60% which also is outside of the RPD control limits.

- The internal standard naphthalene-d8 was out of the control limits for the matrix spike sample (B00FC8MS) and perylene-d12 was out of the control limits for sample B00FC8.

- The RSD in the initial calibration for hexachlorocyclopentadiene and 2,4-dinitrophenol were out of the control limits with 35.9% and 33.5%, respectively. The data for the associated samples, B00FB1 and B00FC8, was qualified as estimated (UJ).

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

- The preparation blank contained several semivolatile TCL compounds as well as tentatively identified compounds (TIC). The associated sample results were qualified as non-detects (U), in accordance with the data validation requirements.

- Several valid TIC compounds remained in the trip blank sample (B00FC8) following review of the laboratory blanks and similar compounds detected in the sample (B00FB1) were qualified as undetected (U) in accordance with the validation requirements.

3.2.3 Pesticide/PCB Organics

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

- 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 DBC and aldrin. Associated sample results were undetected (U) so no qualification was required.

- The 4,4'-DDT percent breakdown was above the control limits in two of several EVALB standard runs. No data qualification was necessary since neither 4,4'-DDT, 4,4'-DDE or 4,4'-DDD were detected in the samples.

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- The EVALB standard analyzed on 05/09/91, 0507 hour, has a 4,4'-DDT breakdown of 30.6%; however, the evaluation standard summary form reports 8.4%.

- The %R for the matrix spike for endrin was 124%. Also, the matrix spike duplicate %R values for gamma-BHC and aldrin were 50% and 35%, respectively.

- The MS/MSD RPD were out of the control limits for all six compounds in the spiking solution. However, since all of the surrogate recoveries were within control limits, it is likely that the out of specification RPD results were due to an error during extractions instead of an actual matrix effect.

3.2.4 Wet Chemistry

- The samples for phosphate, nitrate and nitrite were analyzed out of the required 48-hour holding time and the associated samples, B00FB1 and B00FC8, have been qualified as estimated (J for detects, UJ for non-detects).

- The percent recoveries in several continuing calibration checks for the IC analyses were out of the control limits (see Attachment 4). The associated samples were qualified as estimated (J for detects, UJ for non-detects).

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 2-butanone, hardness, and ammonia data for all samples and nitrate+nitrate data for sample B00FB1 only. 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.

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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 1985, Standard Methods for the Examination of Water and Wastewater, 16th Edition. American Public Health Association, Washington, D.C.

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.

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ATTACHMENT 2

SUMMARY OF DATA QUALIFICATIONS

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DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 117	REVIEWER: [illegible]	DATE: 03/12/92	PAGE 1 OF 3
COMMENTS: Wet Chem / Volatiles / Pest / PCB			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
~~Ammonia~~	~~none~~ R	~~none~~ All	~~ccv %R out of control limits~~
~~Ammonia~~	R	All	~~initial standards are absent~~
Fluoride	UJ/J	All	CCV %R out of control limits
Nitrite	↓	↓	↓
Sulfate by IC	↓	↓	↓
Acetone	UJ	All	CCV %R out of control limits
1,1-Dichloroethane	UJ	All	↓
2-Butanone	already qualified (R)	All ~~after~~ 9/14/91 already qualified	↓
2-Butanone	R	All 9/14/91	ICV - RRF (avg) out below .05
2-Hexanone	UJ	↓	ICV RSD out of control limits
$MeCl_2$	U	All	present in blank
Acetone	already qualified (UJ)	All	↓
2-Butanone	already qualified (R)	↓	↓
2-Hexanone	already qualified (UJ)	↓	↓
9/14/91 4-methyl-2-pentanone	U	B00FB1/ B00FC8 B00F38	present in blank
Nitrate+Nitrite	R	4/1/92 ~~All~~ B00FB1	Result disparity with IC data
Hardness	R	All	No ICV, CCV, or standards included in data.
Delta-BHC	none	none	%D in CCV out of control limits
Endosulfan Sulfate	↓	↓	↓
Alpha-BHC	↓	↓	↓
Ammonia	R	All	No method reference Unable to verify calculations

4/6/92

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DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 117	REVIEWER: [illegible]	DATE: 03/12/91	PAGE 2 OF 3
COMMENTS: Pest/PCB/Semivolatiles			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Endrin	none	none	%D in CCV out of control limits
4,4'-DDD	↓	↓	↓
DBC	none	none	RSD in Linearity out of control limit.
Endrin	none	none	%R in MS out of control limit
gamma-BHC	none	none	%R in MSD out of control limit
Aldrin	↓	↓	↓
gamma-BHC	none	none	MS/MSD RPD out of control limit
Heptachlor	↓	↓	↓
Aldrin			
Dieldrin			
Endrin			
4,4'-DDT	↓	↓	↓
Hexachlorocyclopentadiene	UJ	All	ICV RSD out of control limit
2,4-Dinitrophenol	UJ	All	↓
3,3'-Dichlorobenzidine	none	none	CCV %D out of control limit
Benzoic acid	↓	↓	↓
Hexachlorocyclopentadiene			
2-Nitroaniline			
2,4-Dinitrophenol	↓	↓	↓

4/2/91

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DATA QUALIFICATION SUMMARY - FORM B-7

SDG: 117	REVIEWER: [illegible]	DATE: 03/12/92	PAGE 3 OF 3
COMMENTS: Semivolatiles			
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
4-Nitroaniline	none	none	ccv %D out of control limit
4,6-Dinitro-2-methyl	↓	↓	↓
3,3'-Dichlorobenzidine	↓	↓	↓
Di-n-butylphthalate	none	none	↓
4-Chloroaniline	UJ	800FC8	ccv %D out of control limit
3-Nitroaniline	↓	↓	↓
4-Nitroaniline	↓	↓	↓
Di-n-butylphthalate	↓	↓	↓
Pyrene	↓	↓	↓
Butylbenzylphthalate	↓	↓	↓
3,3'-Dichlorobenzidine	↓	↓	↓
bis(2-ethylhexyl)phthalate	↓	↓	↓
2,4,6-Tribromophenol	none	↓	↓
bis(2-ethylhexyl)phthalate	U ~~800FB1~~	800FB1	present in blank
Trichloropropene	U	800FC8	↓
Semivolatile TICs	NJ	All	est. method qualitative
TIC @ 6.00	U	800FB1	Present in 800FC8
TIC @ 20.02	U	800FB1	↓
TIC @ 21.98	U	800FB1	↓

[illegible] 4/6/92

[illegible] 4/7/92

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ATTACHMENT 3

AS QUALIFIED DATA SUMMARY

VOLATILE ORGANIC ANALYSIS,WATER MATRIX (ug/L)

Project	200-BP-1							
Laboratory	WESTON							
Case	SDG	CLP117						
Sample Number		B00FB1		B00FH8		B00F38		B00FC8
Location		2-33-5		TRIP BLANK		299-E33-05		299-E33-13
Remarks								
Sample Date		03/27/91		03/27/91		03/27/91		03/27/91
Analysis Date		04/01/91		04/01/91		04/01/91		04/02/91
Volatile Organic Compound	CRQL	Result	Q	Result	Q	Result	Q	Result	Q
Chloromethane	10	10	U	10	U	10	U	10	U
Bromomethane	10	10	U	10	U	10	U	10	U
Vinyl Chloride	10	10	U	10	U	10	U	10	U
Chloroethane	10	10	U	10	U	10	U	10	U
Methylene Chloride	5	5	U	5	U	5	U	5	U
Acetone	10	10	UJ	10	UJ	10	UJ	10	UJ
Carbon Disulfide	5	5	U	5	U	5	U	5	U
1,1-Dichloroethene	5	5	U	5	U	5	U	5	U
1,1-Dichloroethane	5	5	UJ	5	UJ	5	UJ	5	UJ
1,2-Dichloroethene (total)	5	5	U	5	U	5	U	5	U
Chloroform	5	5	U	4	J	3	J	5	U
1,2-Dichloroethane	5	5	U	5	U	5	U	5	U
2-Butanone	10	10	R	10	R	10	R	10	R
1,1,1-Trichloroethane	5	5	U	5	U	5	U	5	U
Carbon Tetrachloride	5	5	U	5	U	5	U	5	U
Vinyl Acetate	10	10	U	10	U	10	U	10	U
Bromodichloromethane	5	5	U	5	U	5	U	5	U
1,2-Dichloropropane	5	5	U	5	U	5	U	5	U
cis-1,3-Dichloropropene	5	5	U	5	U	5	U	5	U
Trichloroethene	5	5	U	5	U	5	U	5	U
Dibromochloromethane	5	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane	5	5	U	5	U	5	U	5	U
Benzene	5	5	U	5	U	5	U	5	U
trans-1,3-Dichloropropene	5	5	U	5	U	5	U	5	U
Bromoform	5	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	10	11	U	10	U	17	U	10	U
2-Hexanone	10	10	UJ	10	UJ	10	UJ	10	UJ
Tetrachloroethene	5	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane	5	5	U	5	U	5	U	5	U
Toluene	5	5	U	5	U	5	U	5	U
Chlorobenzene	5	5	U	5	U	5	U	5	U
Ethylbenzene	5	5	U	5	U	5	U	5	U
Styrene	5	5	U	5	U	5	U	5	U
Xylene (total)	5	5	U	5	U	5	U	5	U

9159127 10P

9213512.1046

1A

VOLATILE ORGANICS ANALYSIS SHEET 0000016

CLIENT SAMPLE NO.
2-33-5

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-001

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

Lab File ID: 0040112

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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	~~15~~	~~JB~~ U
67-64-1	Acetone	~~6~~ 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~~ 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	11	~~B~~ U
591-78-6	2-Hexanone	10	~~U~~ 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

sent 4/6/92

FORM 1 V-1 12/88 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000017

CLIENT SAMPLE NO.
2-33-5

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-001

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

Lab File ID: 0040112

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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.

3-27-92

9123512.1048

IA

VOLATILE ORGANICS ANALYSIS SHEET 0000027

CLIENT SAMPLE NO.
Trip Blank
B00FH8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-003

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

Lab File ID: Q040113

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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	~~3~~ 5	~~18~~ U
67-64-1	Acetone	~~5~~ 10	~~18~~ U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	~~U~~ U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	4	J
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~~ 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.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000028

CLIENT SAMPLE NO.
Trip Blank
B00FH8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-003

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

Lab File ID: 0040113

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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.

9213512.1050

1A

VOLATILE ORGANICS ANALYSIS SHEET 0000039

CLIENT SAMPLE NO.
299-E33-05

B00F38

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-004

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

Lab File ID: 0040114

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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	~~25~~	~~18~~	U
67-64-1	Acetone	~~610~~	~~18~~	U
75-15-0	Carbon Disulfide	5	U	
75-35-4	1,1-Dichloroethene	5	U	
75-34-3	1,1-Dichloroethane	5	~~U~~	U
540-59-0	1,2-Dichloroethene (total)	5	U	
67-66-3	Chloroform	3	J	
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	17	~~8~~	U
591-78-6	2-Hexanone	10	~~U~~	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	

4/6/92

4/6/92

FORM 1 V-1 12/88 Rev.

3/27/92

9105512.1051

1E

VOLATILE ORGANICS ANALYSIS SHEET 0000040
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
299-E33-05

B00F38

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-004

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

Lab File ID: 0040114

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/01/91

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.

9715512.1052

VOLATILE ORGANICS ANALYSIS SHEET 0000052

CLIENT SAMPLE NO. 299-E33-13

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005

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

Lab File ID: 0040115

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/02/91

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	~~4~~ 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~~ 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~~ U
591-78-6	2-Hexanone	10	~~U~~ 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

Sent 4/4/92

FORM 1 V-1 12/88 Rev.

30 7/92

9163512.1053

1E

VOLATILE ORGANICS ANALYSIS SHEET 0000053
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.
299-E33-13

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005

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

Lab File ID: Q040115

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____

Date Analyzed: 04/02/91

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.

3/27/92

SEMIVOLATILE ORGANIC ANALYSIS, WATER MATRIX (ug/L)

Project		200-BP-1			
Laboratory		WESTON			
Case	SDG	CLP117			
Sample Number		B00FB1		B00FC8	
Location		2-33-5		TRIP BLANK	
Remarks					
Sample Date		03/27/91		03/27/91	
Extraction Date		04/01/91		04/01/91	
Analysis Date		04/25/91		04/26/91	
Semivolatile Compound	CRQL	Result	Q	Result	Q
Phenol	10	10	U	10	U
bis(2-Chloroethyl)ether	10	10	UJ	10	U
2-Chlorophenol	10	10	U	10	U
1,3-Dichlorobenzene	10	10	U	10	U
1,4-Dichlorobenzene	10	10	U	10	U
Benzyl alcohol	10	10	U	10	U
1,2-Dichlorobenzene	10	10	U	10	U
2-Methylphenol	10	10	U	10	U
bis(2-Chloroisopropyl)ether	10	10	U	10	U
4-Methylphenol	10	10	U	10	U
N-Nitroso-di-n-propylamine	10	10	U	10	U
Hexachloroethane	10	10	U	10	U
Nitrobenzene	10	10	U	10	U
Isophorone	10	10	U	10	U
2-Nitrophenol	10	10	U	10	U
2,4-Dimethylphenol	10	10	U	10	U
Benzoic acid	50	50	UJ	50	U
bis(2-Chloroethoxy)methane	10	10	U	10	U
2,4-Dichlorophenol	10	10	U	10	U
1,2,4-Trichlorobenzene	10	10	U	10	U
Naphthalene	10	10	U	10	U
4-Chloroaniline	10	10	U	10	UJ
Hexachlorobutadiene	10	10	U	10	U
4-Chloro-3-methylphenol	10	10	U	10	U
2-Methylnaphthalene	10	10	U	10	U
Hexachlorocyclopentadiene	10	10	UJ	10	UJ
2,4,6-Trichlorophenol	10	10	U	10	U
2,4,5-Trichlorophenol	50	50	U	50	U
2-Chloronaphthalene	10	10	U	10	U
2-Nitroaniline	50	50	U	50	U
Dimethylphthalate	10	10	U	10	U
Acenaphthylene	10	10	U	10	U
2,6-Dinitrotoluene	10	10	U	10	U
3-Nitroaniline	50	50	U	50	UJ

9135125.0591

SEMIVOLATILE ORGANIC ANALYSIS, WATER MATRIX (ug/L)

Project		200-BP-1			
Laboratory		WESTON			
Case	SDG	CLP117			
Sample Number		B00FB1		B00FC8	
Location		2-33-5		TRIP BLANK	
Remarks					
Sample Date		03/27/91		03/27/91	
Extraction Date		04/01/91		04/01/91	
Analysis Date		04/25/91		04/26/91	
Semivolatile Compound	CRQL	Result	Q	Result	Q
Acenaphthene	10	10	U	10	U
2,4-Dinitrophenol	50	50	UJ	50	UJ
4-Nitrophenol	50	50	U	50	U
Dibenzofuran	10	10	U	10	U
2,4-Dinitrotoluene	10	10	U	10	U
Diethylphthalate	10	10	U	10	U
4-Chlorophenyl-phenyl ether	10	10	U	10	U
Fluorene	10	10	U	10	U
4-Nitroaniline	50	50	U	50	UJ
4,6-Dinitro-2-methylphenol	50	50	UJ	50	U
N-Nitrosodiphenylamine	10	10	U	10	U
4-Bromophenyl-phenylether	10	10	U	10	U
Hexachlorobenzene	10	10	U	10	U
Pentachlorophenol	50	50	U	50	U
Phenanthrene	10	10	U	10	U
Anthracene	10	10	U	10	U
Di-n-butylphthalate	10	10	UJ	10	UJ
Fluoranthene	10	10	U	10	U
Pyrene	10	10	U	10	UJ
Butylbenzylphthalate	10	10	U	10	UJ
3,3'-Dichlorobenzidine	10	20	U	20	UJ
Benz(a)anthracene	10	10	U	10	U
Chrysene	10	10	U	10	U
bis(2-Ethylhexyl)phthalate	10	10	U	10	UJ
Di-n-octylphthalate	10	10	U	10	U
Benzo(b)fluoranthene	10	10	U	10	U
Benzo(k)fluoranthene	10	10	U	10	U
Benzo(a)pyrene	10	10	U	10	U
Indeno(1,2,3-cd)pyrene	10	10	U	10	U
Dibenz(a,g)anthracene	10	10	U	10	U
Benzo(g,h,i)perylene	10	10	U	10	U

SEMIVOLATILE ORGANIC ANALYSIS, WATER MATRIX (ug/L)

Project	200-BP-1				
Laboratory	WESTON				
Case	SDG	CLP117			
Sample Number		B00FB1		B00FC8	
Location		2-33-5		TRIP BLANK	
Remarks					
Sample Date		03/27/91		03/27/91	
Extraction Date		04/01/91		04/01/91	
Analysis Date		04/25/91		04/26/91	
TIC Semivolatile Compound	RT	Result	Q	Result	Q
Unknown	6	10	U	N/A	
Unknown	10.33	4	NJ	N/A	
Hydrocarbon	18.55	7	NJ	N/A	
Unknown	19.53	4	NJ	N/A	
Hydrocarbon	20.02	1000	U	N/A	
Unknown	20.35	40	NJ	N/A	
Unknown	20.45	40	NJ	N/A	
Unknown	20.62	30	NJ	N/A	
Hydrocarbon	20.83	20	NJ	N/A	
Hydrocarbon	21.43	40	NJ	N/A	
Unknown	21.98	20	U	N/A	
Trichloropropene	5.88	N/A		20	U
Unknown	9.17	N/A		4	JB
Hydrocarbon	20	N/A		200	JB
Hydrocarbon	21.97	N/A		7	NJ

9713512.1059

9163512.1057

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000019

CLIENT SAMPLE NO.

2-33-5

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042508

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/25/91

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

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

CAS NO.	COMPOUND		
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

FORM 1 SV-1 12/88 Rev.

9713512.1058

1c

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000020

CLIENT SAMPLE NO. 2-33-5

BOOFB1

Lab Name: Roy F. Weston, Inc. Work Order: 3168-02-01-0000

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042508

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/25/91

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

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	~~U~~ UJ
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~~ 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~~ UJ
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 ~~3~~	~~JB~~ 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

FORM 1 SV-2 12/88 Rev.

97 1212.1059

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000021

CLIENT SAMPLE NO.
2-33-5

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-001

Sample wt/vol: 990 (g/mL) ML

Lab File ID: L042508

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/25/91

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

Dilution Factor: 1.00

Number TICs found: 11

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q	
1.	UNKNOWN	6.00	10	J	~~J~~ U
2.	UNKNOWN	10.33	4	J	J
3.	HYDROCARBON	18.55	7	J	J
4.	UNKNOWN	19.53	4	J	J
5.	HYDROCARBON	20.02	1000	~~JB~~	J
6.	UNKNOWN	20.35	40	J	J
7.	UNKNOWN	20.45	40	J	J
8.	UNKNOWN	20.62	30	J	J
9.	HYDROCARBON	20.83	20	J	J
10.	HYDROCARBON	21.43	40	J	J
11.	UNKNOWN	21.98	20	J	~~J~~ U

4/6/92

FORM 1 SV-TIC 12/88 Rev.

9713512.1060

SEMIVOLATILE ORGANICS ANALYSIS SHEET 0000042

CLIENT SAMPLE NO.
Trip Blank
B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-005

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042605

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/26/91

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~~	UJ
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~~	UJ
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	

9715512.1061

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET 000043

CLIENT SAMPLE NO. Trip Blank

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-005

Sample wt/vol: 990 (g/mL) ML Lab File ID: L042605

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/26/91

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

FORM 1 SV-2 12/88 Rev.

9103512.1062

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

0000044

CLIENT SAMPLE NO.
Trip Blank

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER

Lab Sample ID: 9103L117-005

Sample wt/vol: 990 (g/mL) ML

Lab File ID: L042605

Level: (low/med) LOW

Date Received: 03/29/91

% Moisture: not dec. _____ dec.

Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 04/26/91

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

Dilution Factor: 1.00

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	TRICHLOROPROPENE	5.88	20	~~JB~~
2.	UNKNOWN	9.17	4	JB
3.	HYDROCARBON	20.00	200	JB
4.	HYDROCARBON	21.97	7	~~J~~

FORM 1 SV-TIC 12/88 Rev.

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

Project	200-BP-1				
Laboratory	WESTON				
Case	SDG	CLP117			
Sample Number		B00FB1		B00FC8	
Location		2-33-5		TRIP BLANK	
Remarks					
Sample Date		03/27/91		03/27/91	
Extraction Date		04/01/91		04/01/91	
Analysis Date		05/08/91		05/08/91	
Pesticide/PCB	CRQL	Result	Q	Result	Q
alpha-BHC	0.05	0.052	U	0.05	U
beta-BHC	0.05	0.052	U	0.05	U
delta-BHC	0.05	0.052	U	0.05	U
gamma-BHC (Lindane)	0.05	0.052	U	0.05	U
Heptchlor	0.05	0.052	U	0.05	U
Aldrin	0.05	0.052	U	0.05	U
Heptachlor epoxide	0.05	0.052	U	0.05	U
Endosulfan I	0.05	0.052	U	0.05	U
Dieldrin	0.10	0.1	U	0.1	U
4,4'-DDE	0.10	0.1	U	0.1	U
Endrin	0.10	0.1	U	0.1	U
Endosulfan II	0.10	0.1	U	0.1	U
4,4'-DDD	0.10	0.1	U	0.1	U
Endosulfan sulfate	0.10	0.1	U	0.1	U
4,4'-DDT	0.10	0.1	U	0.1	U
Methoxychlor	0.50	0.52	U	0.5	U
Endrin Ketone	0.10	0.1	U	0.1	U
alpha-Chlordane	0.50	0.52	U	0.5	U
gamma-Chlordane	0.50	0.52	U	0.5	U
Toxaphene	1.00	1	U	1	U
Arochlor-1016	0.50	0.52	U	0.5	U
Arochlor-1221	0.50	0.52	U	0.5	U
Arochlor-1232	0.50	0.52	U	0.5	U
Arochlor-1242	0.50	0.52	U	0.5	U
Arochlor-1248	0.50	0.52	U	0.5	U
Arochlor-1254	1.00	1	U	1	U
Arochlor-1260	1.00	1	U	1	U

9713912.1063

0000014

9115612.1064

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
2-33-5

BOOFB1

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-001

Sample wt/vol: 960 (g/mL) ML Lab File ID: 05089103.31

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/08/91

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	0.052	U
319-85-7	Beta-BHC	0.052	U
319-86-8	Delta-BHC	0.052	U
58-89-9	gamma-BHC (Lindane)	0.052	U
76-44-8	Heptachlor	0.052	U
309-00-2	Aldrin	0.052	U
1024-57-3	Heptachlor epoxide	0.052	U
959-98-8	Endosulfan I	0.052	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	0.52	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.52	U
5103-74-2	gamma-Chlordane	0.52	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.52	U
11104-28-2	Aroclor-1221	0.52	U
11141-16-5	Aroclor-1232	0.52	U
53469-21-9	Aroclor-1242	0.52	U
12672-29-6	Aroclor-1248	0.52	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

JKB 6/26/91

FORM 1 PEST 12/88 Rev.

9713512.1065 0000019

PESTICIDE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
Trip Blank

B00FC8

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

Client: WESTINGHOUSE HANFORD

Matrix: WATER Lab Sample ID: 9103L117-005

Sample wt/vol: 990 (g/mL) ML Lab File ID: 05089103.34

Level: (low/med) LOW Date Received: 03/29/91

% Moisture: not dec. _____ dec. Date Extracted: 04/01/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 05/08/91

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

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

JB 6/26/91

FORM 1 PEST 12/88 Rev.

3/7/92

Project	200-BP-1				
Laboratory	WESTON				
Case	SDG	CLP117			
Sample Number		B00FB1		B00FC8	
Location		2-33-5		TRIP BLANK	
Remarks					
Sample Date		03/27/91		03/27/91	
Inorganic Analytes	CRQL	Result	Q	Result	Q
Alkalinity	2	104		104	
Chloride	0.25	7.5		7.3	
Fluoride	0.25	0.63	J	0.62	J
Nitrite	0.25	0.25	UJ	0.25	UJ
Nitrate	5	36.7	J	73.5	J
Phosphate	0.25	0.25	UJ	0.25	UJ
Sulfate by IC	2.5	41.8	J	40.2	J
Hardness	2	135	R	150	R
Nitrate Nitrite	5	8.8	R		
Nitrate Nitrite	10			88.8	
Ammonia	0.1	0.1	R	0.1	R
Total Organic Carbon	0.5	1.6		4.3	
pH, (std. units)	0.01	8		7.7	
Sulfate	5	39.4		37.5	
Specific Conductance (umhos/cm)	1	324		371	
Total Dissolved Solids	5	251		287	
Cyanide (ug/L)	10	12.8		13.9	

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9713512.1067

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 04/26/91

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

WESTON BATCH #: 9103L117

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT
-001	B00FB1	Alkalinity	104	MG/L	2.0
		Chloride by IC	7.5	mg/L	0.25
	2-33-5	Fluoride by IC	0.63	mg/L	0.25 J
		Nitrite by IC	0.25 u	mg/L	0.25 UJ
		Nitrate by IC	36.7	mg/L	5.0 J
		Cyanide, Total	12.8	UG/L	10.0
		Phosphate by IC	0.25 u	mg/L	0.25 UJ
		Sulfate by IC	41.8	mg/L	2.5 J
		~~Hardness~~	~~135~~	~~MG/L~~	~~2.0~~ R
		~~Nitrate Nitrite~~	~~8.8~~	~~MG/L~~	~~5.0~~ R
		~~Ammonia, as N~~	~~0.10 u~~	~~MG/L~~	~~0.10~~ R
		Total Organic Carbon	1.6	MG/L	0.50
		pH	8.0	PH UNITS	0.010
		Sulfate	39.4 ~~19.7~~	MG/L	5.0
		Specific Conductance	324	UMHOS/CM	1.0
		Total Dissolved Solids	251	MG/L	5.0
-005	B00FC8	Alkalinity	104	MG/L	2.0
		Chloride by IC	7.3	mg/L	0.25
	Trip Blank	Fluoride by IC	0.62	mg/L	0.25 J
		Nitrite by IC	0.25 u	mg/L	0.25 UJ
		Nitrate by IC	73.5	mg/L	5.0 J
		Cyanide, Total	13.9	UG/L	10.0
		Phosphate by IC	0.25 u	mg/L	0.25 UJ
		Sulfate by IC	40.2	mg/L	2.5 J
		~~Hardness~~	~~150~~	~~MG/L~~	~~2.0~~ R
		Nitrate Nitrite	88.8	MG/L	10.0
		~~Ammonia, as N~~	~~0.10 u~~	~~MG/L~~	~~0.10~~ R
		Total Organic Carbon	4.3	MG/L	0.50
		pH	7.7	PH UNITS	0.010
		Sulfate	37.5	MG/L	5.0
		Specific Conductance	371	UMHOS/CM	1.0
		Total Dissolved Solids	287	MG/L	5.0

4/6/92

4/6/92

3/27/92

9713512.1068

ATTACHMENT 4

DATA REVIEW SUPPORTING DOCUMENTATION

DRAFT

VOLATILE ORGANIC DATA REVIEW CHECKLIST - FORM A-1

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 3/09/92
LABORATORY: Weston	CASE: 91034117	SDG: CLP117
SAMPLES/MATRIX: B00FB1, B00FH8, B00F38, B00FC8		
waters		

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	3/9/92	X		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		

4/2/92

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	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			
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

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.

4/2/9

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

The ms/msD raw data was not submitted w/ report.

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.

4/2/98

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

9/24/92

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.

4/2/92

9/15/92 107b

COMMENTS (attach additional sheets as necessary):

The ms/msd was run on a sample not included in this SDG. The ms/msd (Form III) was included in the report, but the raw data was not.

ms/msd % RPD for Chlorobenzene ~~(ms/msd)~~ calculated was 14% which is out of the control limits.

HOLDING TIME SUMMARY - FORM B-1

9103L117

SDG: 117	REVIEWER: [illegible]	DATE: 03/09/92	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
B00FB1	VOA	03/27/91		04/01/91		5	none
B00FH8	↓	↓		04/01/91		5	↓
B00F38	↓	↓		04/01/91		5	↓
B00FC8	↓	↓		04/02/91		6	↓

97456120 77

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [illegible]	DATE: 03/09/92		PAGE 1 OF 2	
COMMENTS:					
CALIB. TYPE:	(INITIAL) CONTINUING	INSTRUMENT:			
CALIB. DATE	COMPOUND	RF	(RSD)/%D/%R	SAMPLES AFFECTED	QUALIFIER
03/26/91	2-Butanone	RRF = .032		B00FB1	10 R
	All RF acc below .05			B00FH8	10 R
				B00F38	10 R
				B00FC8	10 R
3/26/91	2-Hexanone		46.9	B00FB1	10 UJ
				B00FH8	10 UJ
				B00F38	10 UJ
				B00FC8	10 UJ

9/25/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [signature]	DATE: 03/09/92	PAGE 2 OF 2		
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT:			
CALIB. DATE	COMPOUND	RF ≤0	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
3/9/92 ~~03/26/91~~ 4/01/91	Acetone		-32.5	B00FB1	6 uJ
				B00FH8	5 uJ
				B00F38	6 uJ
				B00FC8	4 uJ
3/9/92 ~~03/26/91~~ 4/01/91	1,1-Dichloroethane		-44.9	B00FB1	5 uJ
				B00FH8	5 uJ
				B00F38	5 uJ
				B00FC8	5 uJ
3/9/92 ~~03/26/91~~ 4/01/91	2-Butanone	RF ≤0 .032		none- already qualified (R) ICV RFs out of limits.	

3/12/92

97642.1079

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 117	REVIEWER: [illegible]	DATE: 03/09/92	PAGE 1 OF 2

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
VBlk	$MeCl_2$	4	J	2:14	ug/L		40	B00FB1	1 U
								B00FH8	3 U
								B00F38	2 U
								B00FC8	2 U
VBlk	Acetone	15		2:22	ug/L		150	B00FB1	already qualified 6 UJ
								B00FH8	5 UJ
								B00F38	6 UJ
								B00FC8	4 UJ
VBlk	2-Butanone	3	J	6:10	ug/L	~~15~~ 3/9/92	30	B00FB1	already qual. R
								B00FH8	
								B00F38	
								B00FC8	
VBlk	2-Hexanone	7	J	16:32	ug/L	35		B00FB1	already qual. 10 UJ
								B00FH8	10 UJ
								B00F38	10 UJ
								B00FC8	10 UJ

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 117	REVIEWER: [illegible]	DATE: 03/09/92	PAGE 2 OF 2
COMMENTS:			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
VBlk	4-Methyl-2-pentanone	3	J	14:56	ug/L	15		B00FB1	11 u
								B00FH8	none
								B00F38	~~none~~ 17 u
								B00FC8	10 u

[illegible] 4/4/92

9/25/92

5/25

PRECISION DATA SUMMARY - FORM B-5

SDG: 117	REVIEWER [illegible]	DATE: 3/09/92	PAGE 1 OF 1
COMMENTS: MS/MSD			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Chlorobenzene	H0007326 MS	H0007326 MSD	14	B00F81	none
				B00FH8	↓
				B00F38	
				B00FC8	

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

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 03/06/92
LABORATORY: Weston	CASE: 9103L117	SDG: CLP117
SAMPLES/MATRIX: B00FB1, B00FC8 / waters		

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		

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		
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).

3.2 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

TCL compds were not reported; However, there were TICs.

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.

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?	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.

4/2/9

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).

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).

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.

COMMENTS (attach additional sheets as necessary):

Phenol MS/MSD percent recoveries are 94 & 92, respectively- they are out of the control limits.

Pentachlorophenol 3 RPD is out of the control limit at 60%.

All surrogates for the associated samples and blanks are within the control limits.

Internal Standards

04/26/91 (IS2) Naphthalene-d8 (NPT) B00FC8MS Area is below control limit.

4/26/91 (IS6) Perylene-d12 (PRY) B00FC8 Area is below control limit

9103L117

HOLDING TIME SUMMARY - FORM B-1

SDG: 117	REVIEWER: [illegible]	DATE: 03/06/92	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
B00FB1	BNA	03/27/91	04/01/91	04/25/91	5	24	none
B00FC8	BNA	↓	↓	~~4~~ 4/26/91 3/6/92	5	25	none

4/2/

CALIBRATION DATA SUMMARY - FORM B-2

9103L117

SDG: 117	REVIEWER: [signature]	DATE: 03/09/92	PAGE 1 OF 4		
COMMENTS:					
CALIB. TYPE:	(INITIAL) CONTINUING	INSTRUMENT:			
CALIB. DATE	COMPOUND	RF	(RSD)/%D/%R	SAMPLES AFFECTED	QUALIFIER
3/9/92 04/23/~~92~~91	Hexachlorocyclopentadiene		35.9	B00FB1	10 uJ
				B00FC8	10 uJ
04/23/91	2,4-Dinitrophenol		33.5	B00FB1	50 uJ
				B00FC8	50 uJ

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [signature]	DATE: 03/06/92		PAGE 2 OF 4	
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT:			
CALIB. DATE	COMPOUND	RF	RSD/(%D)/%R	SAMPLES AFFECTED	QUALIFIER
04/24/91	bis(2-chloroisopropyl)ether		30.2	none	none
04/24/91	Benzoic Acid		46.5		
04/24/91	Hexachlorocyclopentadiene		51.1		
4/24/91	2-Nitroaniline		32.0		
4/24/91	2,4-Dinitrophenol		52.8		
4/24/91	4-Nitroaniline		26.6		
4/24/91	4,6-Dinitro-2-methylphenol		41.3		
4/24/91	3-3'-Dichlorobenzidine		25.6		

9215412.095

CALIBRATION DATA SUMMARY - FORM B-2

9103L117

SDG: 7 117 (5/31/92)	REVIEWER:	DATE: 3/09/92	PAGE 3 OF 4
COMMENTS:			
CALIB. TYPE: INITIAL (CONTINUING)		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/(%D)/%R	SAMPLES AFFECTED	QUALIFIER
04/25/91	bis(2-chloroethyl)ether		38.7	800FB1	10 uJ
	Benzoic Acid		60.3		50 uJ
	Hexachlorocyclopentadiene		-89.3		10 uJ (already qual.-ICV)
	2,4-Dinitrophenol		52.5		50 uJ (already qual.-ICV)
	4,6-Dinitro-2-methylphenol		29.3		50 uJ
	Di-n-butylphthalate		-29.9		10 uJ

9/2/9

9715612.1094

CALIBRATION DATA SUMMARY - FORM B-2

91031-117

SDG: 117	REVIEWER: [signature]	DATE: 03/09/92	PAGE 4 OF 4
COMMENTS:			
CALIB. TYPE: INITIAL (CONTINUING)		INSTRUMENT:	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
04/26/91	4-Chloroaniline		25.2	BOOFC8	10 uJ
	3-Nitroaniline		57.9	↓	50 uJ
	4-Nitroaniline		53.9		50 uJ
	Di-n-butylphthalate		-46.7		10 uJ
	Pyrene		-49.0		10 uJ
	Butylbenzylphthalate		-67.9		10 uJ
	3,3'-Dichlorobenzidine		65.8		20 uJ
	bis(2-ethylhexyl)phthalate		-35.4		10 uJ
	2,4,6-Tribromophenol		38.8		none

9/25/92

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: 117	REVIEWER: [illegible]	DATE: 03/09/92	PAGE 1 OF 2

COMMENTS:

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
SBLK	Di-n-Butylphthalate	2	J	1.082	ug/L		20	B00FB1	already qualified
								B00FC8	already qualified
SBLK	bis(2-Ethylhexyl)phthalate	1	J	1.003	ug/L		10	B00FB1	10 u
								B00FC8	already qualified
SBLK (TIC)	Cyclohexenone	4	J	7.63	ug/L	20		none	none
SBLK (TIC)	Trichloropropene	10	J	7.95	ug/L	50		B00FC8	20 u
SBLK (TIC)	Unknown	10	J	8.15	ug/L	50		None	none
SBLK (TIC)	Unknown	6	J	12.05	ug/L	30		none	none
SBLK (TIC)	Hydrocarbon	5	J	24.8	ug/L	25		none	none
~~B00F~~ ~~B00F01~~	~~Unknown~~	~~10~~	~~J~~	~~6~~	~~ug/L~~				
	[illegible]								
	4/6/92								

[illegible] 4/6/92

BLANK AND SAMPLE DATA SUMMARY - FORM B-3

SDG: CA117	REVIEWER: K Alexopoulos	DATE: 4/6/92	PAGE 2 OF 2
COMMENTS: Semivolatiles			

SAMPLE ID	COMPOUND	RESULT	Q	RT	UNITS	5X RESULT	10X RESULT	SAMPLES AFFECTED	QUALIFIER
~~300FC8~~	~~Trichloro~~ 4/6/92								
300FC8	Trichloropropene TIC	20	U	5.88	ug/L	100		300FB1	10 U
	Hydrocarbon TIC	200	JB	20	ug/L	1000		300FB1	1000 U
	Hydrocarbon TIC	7	J	21.97	ug/L	35		300FB1	20 U

4/6/92

ACCURACY DATA SUMMARY - FORM B-4

91031L117

SDG: CLP 117	REVIEWER: [illegible]	DATE: 03/09/92	PAGE 1 OF 1	
COMMENTS: MS/MSD				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B00FC8 MS	Phenol	94%	none	none
B00FC8 MSD	Phenol	92%	none	none

PRECISION DATA SUMMARY - FORM B-5

91031L117

SDG: CLP117	REVIEWER [illegible]	DATE: 3/09/92	PAGE 1 OF 1

COMMENTS:

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
Pentachlorophenol	B00FC8 MS	B00FC8 MSD	60	none	none

9/2/92

PESTICIDE/PCB DATA REVIEW CHECKLIST - FORM A-3

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE:
LABORATORY: Weston	CASE: 9103L117	SDG: 117
SAMPLES/MATRIX: B00FB1, B00FC8 / water		

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		X	
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		

[illegible] 4/27

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	X	—
Sample preparation sheets	X	—	—

3/13/92

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-

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.

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? (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.

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

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.

9713512.1106

COMMENTS (attach additional sheets as necessary):

The calculations are performed by Peak height, not peak area.

30/7/92 JP ~~There~~

Eval B 05/09/91 0507

4,4'-DDT Breakdown is 30.6%

the data does not support 8.4%.

HOLDING TIME SUMMARY - FORM B-1

SDG: 117	REVIEWER: [illegible]	DATE: 03/06/92	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
B00F81	Pest/PCB	03/27/91	04/01/91	05/08/91	5	~~42~~ 37	none
B00FC8	↓	↓	↓	↓	5	~~42~~ 37	↓
						03/06/92	

9215142102

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [illegible]	DATE: 03/27/92	PAGE 1 OF 3
COMMENTS:			
CALIB. TYPE: INITIAL (CONTINUING)		INSTRUMENT: SP2100 (Confirmation column)	

CALIB. DATE	COMPOUND	~~RF~~ RT	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/09/91 0117 INDB 22-56	Delta-BHC	2.56	55.2	none	none
	Endosulfan Sulfate	11.23	37.4	none	none
05/09/91 1022 INDB 22-56	Delta-BHC	2.56	31.0	none	none
05/09/91 1706 INDB 22-55	Delta-BHC	2.56	24.9	none	none

9713512.1108

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [illegible]	DATE: 3/27/92	PAGE 2 OF 3	
COMMENTS:				
CALIB. TYPE:	INITIAL CONTINUING	INSTRUMENT: 2250/2401 (Quantitation Column)		
CALIB. DATE	COMPOUND	RF RT (3/27/92)	RSD (%D) %R	SAMPLES AFFECTED	QUALIFIER
05/09/91 0115 INDB 22-56	Alpha-BHC	1.90	20.2	none	none
	Delta-BHC	3.02	74.3	none	none
	Endrin	8.98	19.7	none	none
	4,4'-DDD	10.31	29.8	↓	none
↓	Endosulfan Sulfate	16.55	66.3	none	none
05/09/91 1019 INDB 22-56	Delta BHC	3.02	25.9	none	none

97136124.1109

2/2

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [illegible]	DATE: 3/27/92	PAGE 3 OF 3		
COMMENTS: Evaluation Check for Linearity					
CALIB. TYPE:	(INITIAL) CONTINUING	INSTRUMENT: SP2100 (confirmation column)			
CALIB. DATE	COMPOUND	RF	(RSD)/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/06/91	DBC		11.0	none	none

91351211 0

5/28/92

DDT/Endrin Breakdown

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

SDG: 117	REVIEWER: [signature]	DATE: 03/27/92	PAGE 1 OF 2
COMMENTS:			
CALIB. TYPE: INITIAL CONTINUING		INSTRUMENT: SP2100 (confirmation column)	

CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/08/91 050450 AB1660 01-52	Endrin (73% Breakdown)			none	none
05/09/91 050949 EVALB 24-57	DDT (42% Breakdown)			none	none

DDT/Endrin Breakdown

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

SDG: 117	REVIEWER: [illegible]	DATE: 03/27/92	PAGE 2 OF 2		
COMMENTS:					
CALIB. TYPE:	INITIAL CONTINUING	INSTRUMENT: 2250/2401 (Quant. column)			
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
05/09/91 050719 Eval B	DDT 30.6% Breakdown		(height)	none	none

[illegible] 4/2/9

97/35112.112

ACCURACY DATA SUMMARY - FORM B-4

SDG: 117	REVIEWER: [signature]	DATE: 03/27/92	PAGE 1 OF 1	
COMMENTS:				
SAMPLE ID	COMPOUND	% RECOVERY	SAMPLE(S) AFFECTED	QUALIFIER REQUIRED
B00FB1MS	Endrin	124	none	none
B00FB1MSD	gamma-BHC	50	none	none
↓	Aldrin	35	↓	↓

97591211113

PRECISION DATA SUMMARY - FORM B-5

9103L117

SDG: 117	REVIEWER [illegible]	DATE: 03/27/92	PAGE 1 OF 1
COMMENTS:			

COMPOUND	SAMPLE ID:	SAMPLE ID:	RPD	SAMPLES AFFECTED	QUALIFIER
gamma-BHC	B00FB1 MS	B00FB1 MSD	62	none	none
Heptachlor	↓	↓	61	↓	↓
Aldrin			72		
Dieldrin			63		
Endrin			66		
4,4'-DDT			61		

9159121114

03/27/92

9713512.1115

CALCULATION SUMMARY - FORM B-6

SDG: 117	REVIEWER: [illegible]	DATE: 3/27/92	PAGE 1 OF 1

COMMENTS:

Calibration Factor Eval Mix B

Endrin

Calibration Factor = $\frac{\text{Peak height}}{(\text{ng/inj})}$

Endrin Eval B CF = $\frac{144990}{.08997}$ = 1611537

9713512.1116

WET CHEMISTRY DATA REVIEW CHECKLIST - FORM A-7

PROJECT: 200-BP-1	REVIEWER: [illegible]	DATE: 03/09/92
LABORATORY: Weston	CASE: 9103L117	SDG: CLP117
SAMPLES/MATRIX: B00FB1, B00FC8/ waters		

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		TOC	TOX
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	

4/21/92

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).

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.

9713512.1120

DRAFT 7/91

COMMENTS (attach additional sheets as necessary):

TKN/NH3 sample run does not have CCB at the required frequency. It also does not have STDs or ICSs.
Hardness sample run does not have CCV or CCB at the required frequency.

Ammonia data can not be verified.
Hardness data illegible.

MAT 4/6/92

4/21/92

WESTON

9103L117
NH3 [illegible]

NH_3-N/TKN BENCH SHEET

CAL STD ID: NH_4Cl

ICV/CCV STD ID: EOTA (NH_4) SO4

PREP BATCH: _____

WORKSHEET: 91LNH ~~039~~ 041

UNITS: SOIL MG/KG WATER MG/L

TKN 0403

RFW #	pH <2	DISTILL/ DIGEST STARTING VOL OR WT	ANALYSIS DILUTION START-> END	RUN ORDER	TIME(T) IN MIN. = READING (CONC.)	MG/L MG/KG	% SOLIDS COMMENTS
Waste				1	T=9.28.6 T=7.28.1 T=7.27.5		
2.00 std				2	T=9.85.9		
2.0 std				3	85.7 mv = 2.00 T=1.200 T=2.1.99		
10.0 std				4	T=3.10.0 T=3.10.0	10.0	
OL 0.0				5	T=4.039		
.10 std				6	T=1.9.090 T=3.097 T=2.094 T=4.098	.098	
.20 std				7	T=1.172 T=3.183 T=2.180	.18	
1.0				8	T=1.903 T=3.961 T=2.951	.96	
2.0				9	T=1.180 T=3.200 T=2.186 Reset 200	1.86	
OL				10	T=7.021		
Distill TKN blk	MBI			11	T=1.050 T=3.074 T=2.068 T=4.077	T=4.078 <0.10	
2nd TKN blank	MBI			12	T=1.9.083 T=4.083 T=2.083	<0.10	
.20 NH_3 std	CV			13	T=1.9.177 T=4.191 T=2.5.187 T=5.191	.19	
4.0 EOTA	MBI			14	T=3.392 T=4.3.91	3.92 -.02 3.94	
~~4.0 EOTA~~ 2nd source	LCS			15	T=3.370 T=3.390	~~3.82~~	SEE RUN 39 for LCS
8.0 EOTA	MBI			16	T=1.7.74 T=3.7.81 T=2.7.78	7.73	
10.0 NH_3 std				17	T=1.10.3 T=2.5 10.3	10.3	
OL	CV			18	T=3.080	<0.10	
.20 NH_3 std				19	T=1.190 T=4.197 T=2.193	.19	
9103L866-003		150 → 250		20	T=3.3.40 T=3.3.42 T=2.3.41 T=4.3.75	3.37 x =5.62	250 ÷ 150
-001		150 → 250		21	T=1.6.70 T=3.6.86 T=2.6.87	6.79 x 11.3	250 ÷ 1.0
-006		250 → 250		22	T=1.1.47 T=3.1.44 T=2.1.45	1.45 -.08 1.37	

Analyst RO'Grane Date 4/3/91 Received by _____ Date _____

RFW21-21-006/F-11-89

WESTON

9715912.1122 NH_3-N/TKN BENCH SHEET

CAL STD ID:_____ PREP BATCH:_____

ICV/CCV STD ID:_____ WORKSHEET:_____

UNITS: SOIL MG/KG WATER MG/L

RFW #	pH <2	DISTILL/ DIGEST STARTING VOL OR WT	ANALYSIS DILUTION START-> END	RUN ORDER	TIME(T) IN MIN. = READING (CONC.)	MG/L MG/KG	% SOLIDS COMMENTS
9103L886-008		250 → 250		23	T=3 5.13 T=4 5.15 T=3 5.15	5.07	
-009		50 → 250		24	T=1 826 T=3 .893 T=2 .890 T=4 .895	.895×5 4.07	
-009R		↓		25	T=1 .623 T=3 .627 T=2 .626	[illegible]	2.37 [illegible]
009S		↓	20.0 → 1.05	26	T=1 5.03 T=4 5.21 T=2 5.17	5.13x 20.63	5
10.0 ppt	CV			27	T=5 10.2	10.2	
-011		50 → 250		28	T=1 1.99 T=3 2.02 T=2 2.03	1.99×5	= 9.95
-012				29	T=1 3.65 T=3 3.67 T=2 3.66	3.59×5	17.95
-012R				30	T=1 3.75 T=3 3.78 T=2 3.77	3.70×5	18.50
-012S		10.1 m 50.1 KG	50 → 100	31	T=1 5.71 T=3 5.74 T=2 5.74	(11.48-0.8) ×5 57.0	
10.0 ppt	CV			32	T=1 10.2 T=3 10.4 T=2 10.4	10.4	
9103L886-015		50 → 250		33	T=1 2.25 T=3 2.31 T=2 2.30	2.23×5 11.15	
-016		50 → 250		34	T=1 2.44 T=3 2.46 T=2 2.46	2.38×5 11.9	
-019	RB 3/12	100 → 250		35	T=1 3.93 T=3 3.96 T=2 3.96	3.88×5 19.4	12 = 9.7 2.5 = 9.15 3/3
-020		100 → 250		36	T=1 3.34 T=3 3.34	3.26×2.5	
-028		250 → 250		37	T=1 1.95 T=2 1.95	1.87	
-029		250 → 250		38	T=3 5.95 T=4 5.95	5.87	RB 3/13
LCS 550	LCS	1.0 tox 550		39	T=3 3.91 T=3 3.90	3.83	
9103L880-001	2mL → 250	1.024g → 250		40	T=1 5.12 T=3 5.19 T=2 5.19	5.11×250/2 649 mg/L	
9103L880-004		1.024g → 250		41	T=3 7.25 T=3 7.25	7.18 2 213 mg/kg	82.09
-004		1.145g → 250		42	T=1 2.05 T=3 2.05 T=2 2.08	2.00 652	66.97
-005		1.011g → 250		43	T=1 2.10 T=2 2.09	2.01 736	67.51
-006		1.126g → 250		44	T=3 2.60 T=3 2.60	2.52 804	69.89

Analyst KO Crane Date 4/3/91 Received by_____ Date_____

CC 23

RFW21-21-006/F-11-89

WESTCHEM

NH3-N/TKN BENCH SHEET

CAL STD ID: _____ PREP BATCH: _____

ICV/CCV STD ID: _____ WORKSHEET: _____

UNITS: SOIL MG/KG WATER MG/L

RFW #	pH <2	DISTILL/ DIGEST STARTING VOL OR WT	ANALYSIS DILUTION START-> END	RUN ORDER	TIME(T) IN MIN.	READING = (CONC.)	MG/L MG/KG	% SOLIDS COMMENTS
9103L885-001		1.055g →250	Neat	45	T=1 ~~2.00~~ 8.00 T=4 8.06		7.98	70.12
-002		1.000g →250		46	T=1 6.76 T=2 6.72		6.69	9400
-002R ~~-003~~		1.177g →250		47	T=1 8.90 T=3 8.85 T=3 8.85		8.82 8.78	22.[illegible]
-0025		1.099g →250	12.5 SPIKE 50 →100	48	T=1 9.76 T=3 9.87 T=2 9.87		19.68 5324	
10.0 NH3 std	CV			49	T=1 5 10.6 T=3 T=2 10.5		10.5	
9103L892-001		1.165g →250	50 →100	50	T=1 7.76 T=3 7.88 T=2 7.86		15.76 2625	75.68 75.15
-002		1.037g →250	Neat	51	T=1 5.88 T=2 5.89		5.81 4777	76.24
-003		1.011g →250	50 →100	52	T=1 7.11 T=3 7.33 T=2 7.32		14.66 4105	74.58 81.34
-004		1.016g →250	50 →100	53	T=1 7.38 T=3 7.36 T=2 7.37		14.72 4053	11.68 88.78
-005		1.016g →250	Neat	54	T=1 8.73 T=3 8.74 T=2 8.75		8.67 2908	73.34
-006		1.094g →250		55	T=1 8.23 T=3 8.25 T=2 8.24		8.19 2306	81.6
-006R		1.133g →250		56	T=1 7.91 T=3 7.98 T=2 7.98		7.90 2148	
-0065		1.001g →250	8.5 SPIKE 50 →100	57	T=1 8.45 T=3 8.43 T=2 8.49		8.40 5200	
10.0 std	CV Mg	NH3		58	T=1 10.5 T=3 10.7 T=2 10.8		10.7	
DI				59	T=8 .047		<0.10	
.20 std				60	T=1 .192 T=3 .198 T=2 .196		.20	
9103L102-001	Y			61	T=3 .046		<0.10	
9103L103-001	Y			62	T=1 .038			
9103L104-001				63	T=0.5 .032			
9103L117-001	Y			64	T=0.5 .030			
-005	Y			65	T=0.5 .026			
-0055		1.05 SPIKE		66	T=1 .902 T=3 .959 T=2 .948 T=4 .966		0.97	

Analyst RD Pine Date 4/3/91 Received by _____ Date _____

RFW21-21-006/F-11-89

WESTCEN

NH_3-N/TKN BENCH SHEET

CAL STD ID: _____ PREP BATCH: _____

ICV/CCV STD ID: _____ WORKSHEET: _____

UNITS: SOIL MG/KG WATER MG/L

RFW #	pH <2	DISTILL/ DIGEST STARTING VOL OR WT	ANALYSIS DILUTION START-> END	RUN ORDER	TIME(T) IN MIN. = READING (CONC.)	MG/L MG/KG	% SOLIDS COMMENTS
1.0 mL std	LCS			67	T=3 1.10	1.10	
9103L117-005R				68	T=1.137 F T=2.073 F	<0.10	
9103L020-004	Y			69	T=1.044 F	<0.10	
RDB 4/3 -003	Y			70	T=1.033	<0.10	
-003S				71	T=1.519 T=3.977 T=2.942 T=4.982	.98	
-003R				72	T=1.085	<0.10	
0.20 std	MB2			73	T=1.186 T=3.202 T=2.201	.20	
DI	↓			74	T=1.013	<0.10	
9103L087-001	Y			75	T=1.108 T=2.107	.11	
-002	Y			76	T=1.107 T=3.164 T=2.104	.10	
-003	Y			77	T=1.037		
-004	Y			78	T=1.038		
-005	Y			79	T=1.026		
10.0 std	CV1			80	T=1.103 T=3 11.2 T=2 11.0 T=4 11.2	11.2	
9103L088-001			2mL→40	81	T=1 4.53 T=3 4.97 T=2 4.87 T=4 4.96	2485	
DI				82	T=1.346 T=2.071	<0.10	
0.20 std	CV1			83	T=1.185 T=3.206 T=2.203 T=4.206	.206	
10.0 std	CV1			84	T=2 11.1 T=3 11.1	11.1	
					RDB 4/3/91		

Analyst RD Brown Date 4/3/91 Received by _____ Date _____

RFW21-21-006/F-11-89

HOLDING TIME SUMMARY - FORM B-1

SDG: CP117	REVIEWER: Angelos	DATE: 4/6/92	PAGE 1 OF 1
COMMENTS: Wet Chemistry			

FIELD SAMPLE ID	ANALYSIS TYPE	DATE SAMPLED	DATE PREPARED	DATE ANALYZED	PREP. HOLDING TIME, DAYS	ANALYSIS HOLDING TIME, DAYS	QUALIFIER
1500FB1	Phosphate	3/27/92	N/A	3/30/91	N/A	3	UJ
and	Fluoride						none
1500FC8	Nitrite						UJ
	Nitrate						UJ
	Chloride						none
	Cyanide		4/1/91	4/1/91	4	4	
	Sulfate		N/A	4/16/91	N/A	20	
	TOC			4/23/91		27	
	pH			3/30/91		3	
	Spec. Cond					3	
	Hardness			4/8/91		12	
	Alkalinity			4/3/91		7	
	Ammonia						
	NO_2/NO_3						
	TDS			4/1/91		5	
	Sulfate (IC)			3/30/91		3	

4/6/92

4/6/92

9135212125

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [illegible]	DATE: 03/10/92	PAGE 1 OF 3		
COMMENTS:					
CALIB. TYPE:	INITIAL	CONTINUING	INSTRUMENT:		
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
03/30/91	(ccv - injection 38) Fluoride	.73	133	none	none
↓	Chloride	1.17	115	↓	↓
↓	Nitrite	1.42	120	↓	↓
↓	Nitrate	2.48	119	↓	↓
↓	Phosphate	3.85	121	↓	↓
↓	Sulfate	5.18	121	↓	↓
03/30/91	(ccv - injection 49) Fluoride	.73	118	none	none
↓	~~Chloride~~	~~1.15~~ 3/10/92		↓	↓
↓	Phosphate	3.85	112	↓	↓
↓	Sulfate	5.18	111	↓	↓
~~03/30/91~~	(ccv - injection 59) ~~Fluoride~~	~~0.73~~	~~118~~		
	~~Nitrite~~	~~1.42~~	~~112~~		
	~~Sulfate~~	~~5.18~~	~~111~~		

3/10/92
3/10/92
3/10/92

3/10/92

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [signature]	DATE: 03/10/92		PAGE 2 OF 3	
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT:			
CALIB. DATE	COMPOUND	RF	RSD/%D/%R	SAMPLES AFFECTED	QUALIFIER
03/30/91 (ccv - injection 59)	Fluoride	0.73	118	B00FB1	.63 J
	~~Nitrite~~ 3/10/92			B00FC8	.62 J
	Nitrite	1.42	112	B00FB1	.25 UJ (already qualified holding time)
				B00FC8	.25 UJ
	Sulfate	5.18	111	B00FB1	41.8 J
				B00FC8	40.2 J
03/30/91 (ccv - injection 66)	Fluoride	0.73	117	none	none
	Chloride	1.17	111		
	Nitrite	1.42	115		
	Phosphate	3.85	111		

9/35/2/27

[illegible]

CALIBRATION DATA SUMMARY - FORM B-2

SDG: 117	REVIEWER: [illegible]	DATE: 03/10/92		PAGE 3 OF 3	
COMMENTS:					
CALIB. TYPE:	INITIAL (CONTINUING)	INSTRUMENT:			
CALIB. DATE	COMPOUND	RF	RSD/%D/(%R)	SAMPLES AFFECTED	QUALIFIER
04/03/91	Ammonia		112	none	none
04/03/91	Ammonia		111	none	none

9212512128

PRECISION DATA SUMMARY - FORM B-5

SDG: 117	REVIEWER [signature]	DATE: 04/02/92	PAGE 1 OF 1
COMMENTS: Field Duplicates - wet chem			

COMPOUND	SAMPLE ID: 800FB1	SAMPLE ID: 800FC8	RPD	SAMPLES AFFECTED	QUALIFIER
Alkalinity	104	104	0	N/A	N/A
Chloride by IC	7.5	7.3	3		
Fluoride by IC	0.63 J	0.62 J	2		
Nitrite by IC	0.25 UJ	0.25 UJ	NC		
Nitrate by IC	36.7 J	73.5 J	67		
Cyanide	12.8	13.9	8		
Phosphate by IC	0.25 UJ	0.25 UJ	NC		
Sulfate by IC	41.8 J	40.2 J	4		
Hardness	135 R	150 R	10		
Nitrate Nitrite	8.8 R	88.8	164		
Ammonia	0.10 U	0.10 U	NC		
TOC	1.6	4.3	92		
pH	8.0	7.7	4		
Sulfate	39.4	37.5	5		
Specific Conductivity	324	371	14		
TDS	251	287	13		

NC = Not Calculated

4/2/92

9736212.1129

9713512.1130

CALCULATION SUMMARY - FORM B-6

SDG: 117	REVIEWER: [signature]	DATE: 02/09/92	PAGE 1 OF 1

COMMENTS:

Sulfate

800FB1

Sulfate = ~~19.7 x~~ (SO4 value) x (Dil'n Factor)

= 19.7 x 2 = 39.4 mg/L