HEARTLAND ENVIRONMENTAL SERVICES, INC.

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N60478.AR.000136
NWS EARLE
5090.3a

REGION II SVOA DATA VALIDATION

NAVAL WEAPONS STATION - COLTSNECK

ROY F. WESTON CASE 9103L829

Coltsneck ID	R.F. Weston ID	Coltsneck ID	R.F. Weston ID
	Water Samples (all)		
04-001-D201	9103L829-020		
	Soil Samples (all)		
04-004-D001	9103L829-011	04-003-D001	9103L829-013
04-003-D001	9103L829-013MS	04-003-D001	9103L829-013MSD
04-002-D001	9103L829-015	04-001-D001	9103L829-018
04-001-D101	9103L829-019	10-001-D001	9103L829-021
10-002-D001	9103L829-022	10-003-D001	9103L829-023

PREPARED BY: Eugene M. Watson DATE: 9-4-91

VERIFIED BY: Paul B. Humburg DATE: 9/5/91

HEARTLAND ENVIRONMENTAL SERVICES, INC.

DATA ASSESSMENT AND NARRATIVE

General

The organic findings offered in this screening report assumes that all analytical results are correct as reported and is based upon the examination of the reported holding times, blank analysis results, surrogate and matrix spike recoveries, GC/MS performance, tuning results, calibration results and internal standard areas. This report was prepared in compliance relative to the analytical and deliverable requirements specified in the U.S. EPA CLP and Region II SOP No. HW-6, Revision 7. All comments made within this report should be considered when examining the analytical results (Form I's).

Holding Times

All of the holding times met the required U. S. EPA CLP and Region II protocol.

Blanks:

The laboratory did not identify trip or field blanks on the Chain-of-Custody, so Heartland ESI must assume that blanks were not submitted with the SVOA samples.

One (1) of the two (2) method blanks that were extracted and analyzed exhibited contamination for TCLs and numerous TICs. The TICs found in the blank appeared in most of the samples. Most TICs that were labeled with blank qualifiers "B" are rejected since they are less than 5X the blank value.

In addition, the method blank extracted with the soil samples did not exhibit contamination for aldol condensation products. This is highly unusual, since the extraction process requires a mixture of methylene chloride and acetone which is sonicated.

Specific Findings:

1. For samples 04-001-D201 and 04-001-D201RE, the method blank 91LE0326-MB1 exhibited contamination for di-n-butylphthalate and bis (2-ethylhexyl)phthalate. All sample results for these two (2) compounds are less than the CRQL and less than 10X the blank value. Reject the sample results and report the CRQL.

2. For the following samples, the TICs listed below are rejected due to blank contamination.

Sample ID	TIC Number
04-001-D201	2,4,5,7,11-15,17

DATA ASSESSMENT AND NARRATIVE

Tuning

All the DFTPP tunes met the tuning criteria set forth by Region II and the Functional Guidelines.

Calibrations - Relative Response Factors (RRFs)

All of the initial and continuing calibrations met the Region II requirements for RRFs.

Calibrations - %RSDs and %Ds

The initial and continuing calibrations were very good for the majority of the compounds. However, the laboratory did encounter some difficulties with the initial and continuing calibrations of certain compounds.

Specific findings:

3 For sample SBLKLE0326-MB1, the continuing calibration on 03/22/91 on instrument IN50J contained the following compounds with %Ds above 25% D, but less than 50% D. Qualify all positive results as estimated (J).
   a) 2,4-dinitrophenol
   b) 4-nitrophenol

4. For sample 04-001-D201RE, the initial calibration on 03/28/91 on instrument 5100L contained the following compounds with %RSDs above 30% RSD, but less than 90% RSD. Qualify all positive results as estimated (J).
   a) 3,3'dichlorobenzidine

5. The initial calibration on 04/02/91 on instrument 5100L contained the following compounds with % RSDs above 30% RSD. No qualifications are needed since samples were not analyzed after the initial calibration.
   a) benzoic acid

6. For samples 04-001-D201, 04-003-D001, 04-003-D001MS, and 04-003-D001 MSD, the continuing calibration on 04/03/91 on instrument 5100L contained the following compounds with %Ds above 25% D, but less than 50% D. Qualify all positive results as estimated (J).
   a) benzoic acid
   b) butylbenzylphthalate
   c) bis (2-ethylhexyl) phthalate
   d) indeno(1,2,3-cd)pyrene
   e) benzo(g,h,i)perylene

DATA ASSESSMENT AND NARRATIVE

Calibrations - %RSDs and %Ds (continued)

7. For samples 04-001-D201, 04-003-D001, 04-003-D001MS, and 04-003-D001 MSD, the continuing calibration on 04/03/91 on instrument 5100L contained the following compounds with %Ds above 50% D, but less than 90% D. Qualify all positive results as estimated (J) and all non detects as estimated (UJ).
   a) 3,3'dichlorobenzidine

8. For sample 04-001-D101, the initial calibration on 04/09/91 on instrument 5100L contained the following compounds with %RSDs above 30% RSD, but less than 90% RSD. Qualify all positive results as estimated (J).
   a) 3,3'dichlorobenzidine
   b) 2,4-dinitrophenol
   c) di-n-butylphthalate
   d) butylbenzylphthalate
   e) bis (2-ethylhexyl) phthalate

9. For samples 04-001-D101RE, 04-004-D001, 04-002-D001, SBLKLE0347-MB1, SBLKLE0347-MB1 BS, and SBLKLE0347-MB1 BSD, the continuing calibration on 04/10/91 on instrument 5100L contained the following compounds with %Ds above 25% D, but less than 50% D. Qualify all positive results as estimated (J).
   a) 2-nitroaniline
   b) 4-nitrophenol
   c) pyrene
   d) bis(2-chloroethyl)ether

10. For samples 04-001-D101RE, 04-004-D001, 04-002-D001, SBLKLE0347-MB1, SBLKLE0347-MB1 BS, and SBLKLE0347-MB1 BSD, the continuing calibration on 04/10/91 on instrument 5100L contained the following compounds with %Ds above 50% D, but less than 90% D. Qualify all positive results as estimated (J) and all non detects as estimated (UJ).
   a) hexachlorocyclopentadiene

DATA ASSESSMENT AND NARRATIVE

Calibrations - %RSDs and %Ds (continued)

11. For samples 10-003-D001, 04-001-D001, 10-002-D001, and 10-001-D001, the continuing calibration on 04/11/91 on instrument 5100L contained the following compounds with %Ds above 25% D, but less than 50% D. Qualify all positive results as estimated (J).
    a) nitrobenzene
    b) 2-nitroaniline
    c) 4-nitroaniline
    d) di-n-butylphthalate
    e) butylbenzylphthalate
    f) bis(2-ethylhexyl)phthalate
    g) * nitrobenzene-d_5
    h) * 2,4,6-tribromophenol

    * Normally a surrogate with a %D greater than 25% would result in the qualification of all positive results in the associated samples. However, all the surrogate recoveries for nitrobenzene -d_5 and 2,4,6-tribromophenol are within QA/QC limits, so Heartland ESI will not qualify the data for the high surrogate %Ds.

Surrogates

All of the samples contained surrogate recoveries that were within the CLP QA/QC criteria.

Internal Standards

Seven (7) samples exhibited EICP internal standard areas which were out of QA/QC limits. All other sample EICP internal standard areas were acceptable.

Specific Findings:

12. For sample 04-001-D201RE, the following internal standards exhibited EICP areas that were below the lower control limit. For all compounds associated with these internal standards, qualify all positive results as estimated (J) and all non detect results as estimated (UJ).
    a) naphthalene-d_8
    b) acenaphthene-d_{10}

DATA ASSESSMENT AND NARRATIVE

Internal Standards (continued)

13. For samples 04-003-D001, 04-003-D001MS, 04-003-D001MSD, and 04-001-D201, the following internal standard exhibited an EICP area that was above the upper control limit. For all compounds associated with this internal standard, qualify all positive results as estimated (J) and all non detect results as estimated (UJ).
    a) perylene-d_{12}

14. For samples 04-001-D101 and 04-001-D101RE, the following internal standard exhibited an EICP area that was above the upper control limit. For all compounds associated with this internal standard, qualify all positive results as estimated (J) and all non detect results as estimated (UJ).
    a) 1,4-dichlorobenzene-d_4
    b) naphthalene-d_8
    c) acenaphthene-d_{10}
    d) phenanthrene-d_{10}
    e) chrysene-d_{12}

Compound Identification/Quantitation

All of the spectra submitted by the laboratory met the Region II guidelines. No qualifications are needed.

Matrix Spike/Matrix Spike Duplicate

The water BS/BSD did not yield acceptable recoveries. However, the soil MS/MSD did not require any qualifications.

Specific Findings:

15. For all water samples, the blank spike MS/MSD yielded recoveries for pentachlorophenol which were below 10%. Qualify all positive results as estimated (J) and reject (R) all non detect results.

System Performance and Overall Assessment

The overall performance of the GC/MS system was acceptable. The quality of the data package was acceptable. Heartland ESI estimates that greater than 5% of the data that is qualified.

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GLOSSARY OF DATA QUALIFIERS

QUALIFICATION CODES

U = Not detected

J = Estimated value

UJ = Reported quantitation limit is qualified as estimated

R = Result is rejected and unusable

NJ = Presumptive evidence for the presence of the material at an estimated value

Heartland ESI specific findings will be noted in numerical form on the Form Is in this data validation report. These specific finding footnotes will reflect the conclusions found in the data validation process that resulted in the qualification of the data.

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SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL	SPECIFIC FINDINGS
04-001-D201, 04-001-D201RE	di-n-butyl-phthalate bis(2-ethyl-hexyl)phthalate	+BJ	CRQL	1
04-001-D201	TICs	+	R	2
* see the specific finding for the complete list of the TICs				
04-001-D201RE	3,3'-dichloro-benzidine	+	J	4
04-001-D201, 04-003-D001 04-003-D001MS, 04-003-D001MSD	benzoic acid butylbenzylphthalate bis(2-ethylhexyl)phthalate indeno(1,2,3-cd)pyrene benzo(g,h,i)perylene	+	J	6
04-001-D201, 04-003-D001 04-003-D001MS, 04-003-D001MSD	3,3'dichloro-benzidine	+/-	J/UJ	7
04-001-D101	3,3'-dichloro-benzidine 2,4-dinitrophenol di-n-butylphthalate butylbenzylphthalate bis(2-ethylhexyl)phthalate	+	J	8
04-001-D101RE, 04-004-D001, 04-002-D001 SBLKLE0347-MB1 BS, SBLKLE0347-MB1 BSD	2-nitroaniline 4-nitrophenol pyrene bis(2-chloroethyl)ether	+	J	9

* DL denotes the Form I qualifier supplied by the laboratory

QL denotes the qualifier used by Heartland ESI

\+ in the DL/QL column denotes a positive result

\- in the DL/QL column denotes a negative result

HEARTLAND ENVIRONMENTAL SERVICES, INC.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL	SPECIFIC FINDINGS
04-001-D101RE, 04-004-D001, 04-002-D001 SBLKLE0347-MB1 BS, SBLKLE0347-MB1 BSD	hexachloro-cyclopentadiene	+/-	J/UJ	10
10-003-D001, 04-001-D001 10-002-D001, 10-001-D001	nitrobenzene 2-nitroaniline 4-nitroaniline di-n-butylbenzene butylbenzylphthalate bis(2-ethylhexyl)phthalate	+	J	11
04-001-D201RE	all cmpds. associated with the int. stds. naphthalene-d_8 acenaphthene-d_{10}	+/-	J/UJ	12
04-003-D001 04-003-D001MS 04-003-D001MSD 04-001-D201	perylene-d_{12}	+/-	J/UJ	13
04-001-D101 04-001-D101RE	all cmpds. associated with the int. stds. 1,4-dichlorobenzene-d_4 naphthalene-d_8 acenaphthene-d_{10} phenanthrene-d_{10} chrysene-d_{12}	+/-	J/UJ	14
all water samples	pentachloro-phenol	+/-	J/R	15

* DL denotes the Form I qualifier supplied by the laboratory

QL denotes the qualifier used by Heartland ESI

\+ in the DL/QL column denotes a positive result

\- in the DL/QL column denotes a negative result

0000036

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-004-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-011

Sample wt/vol: 30.1 (g/mL) G Lab File ID: L041010

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 40 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC* Date Analyzed: 04/10/91

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	610	U
111-44-4	bis(2-Chloroethyl)ether	610	U
95-57-8	2-Chlorophenol	610	U
541-73-1	1,3-Dichlorobenzene	610	U
106-46-7	1,4-Dichlorobenzene	610	U
100-51-6	Benzyl alcohol	610	U
95-50-1	1,2-Dichlorobenzene	610	U
95-48-7	2-Methylphenol	610	U
108-60-1	bis(2-Chloroisopropyl)ether	610	U
106-44-5	4-Methylphenol	610	U
621-64-7	N-Nitroso-Di-n-propylamine	610	U
67-72-1	Hexachloroethane	610	U
98-95-3	Nitrobenzene	610	U
78-59-1	Isophorone	610	U
88-75-5	2-Nitrophenol	610	U
105-67-9	2,4-Dimethylphenol	610	U
65-85-0	Benzoic acid	3100	U
111-91-1	bis(2-Chloroethoxy)methane	610	U
120-83-2	2,4-Dichlorophenol	610	U
120-82-1	1,2,4-Trichlorobenzene	610	U
91-20-3	Naphthalene	610	U
106-47-8	4-Chloroaniline	610	U
87-68-3	Hexachlorobutadiene	610	U
59-50-7	4-Chloro-3-methylphenol	610	U
91-57-6	2-Methylnaphthalene	610	U
77-47-4	Hexachlorocyclopentadiene	610	U J 10
88-06-2	2,4,6-Trichlorophenol	610	U
95-95-4	2,4,5-Trichlorophenol	3100	U
91-58-7	2-Chloronaphthalene	610	U
88-74-4	2-Nitroaniline	3100	U
131-11-3	Dimethylphthalate	610	U
208-96-8	Acenaphthylene	610	U
606-20-2	2,6-Dinitrotoluene	610	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-004-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-011

Sample wt/vol: 30.1 (g/mL) G Lab File ID: L041010

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 40 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/10/91

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	3100	U
83-32-9	Acenaphthene	610	U
51-28-5	2,4-Dinitrophenol	3100	U
100-02-7	4-Nitrophenol	3100	U
132-64-9	Dibenzofuran	610	U
121-14-2	2,4-Dinitrotoluene	610	U
84-66-2	Diethylphthalate	610	U
7005-72-3	4-Chlorophenyl-phenylether	610	U
86-73-7	Fluorene	610	U
100-01-6	4-Nitroaniline	3100	U
534-52-1	4,6-Dinitro-2-methylphenol	3100	U
86-30-6	N-Nitrosodiphenylamine (1)	610	U
101-55-3	4-Bromophenyl-phenylether	610	U
118-74-1	Hexachlorobenzene	610	U
87-86-5	Pentachlorophenol	3100	U
85-01-8	Phenanthrene	68	J
120-12-7	Anthracene	610	U
84-74-2	Di-n-Butylphthalate	610	U
206-44-0	Fluoranthene	100	J
129-00-0	Pyrene	130	J
85-68-7	Butylbenzylphthalate	610	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
56-55-3	Benzo(a)anthracene	610	U
218-01-9	Chrysene	610	U
117-81-7	bis(2-Ethylhexyl)phthalate	89	J
117-84-0	Di-n-Octyl phthalate	610	U
205-99-2	Benzo(b)fluoranthene	610	U
207-08-9	Benzo(k)fluoranthene	610	U
50-32-8	Benzo(a)pyrene	610	U
193-39-5	Indeno(1,2,3-cd)pyrene	610	U
53-70-3	Dibenzo(a,h)anthracene	610	U
191-24-2	Benzo(g,h,i)perylene	610	U

9

(1) - Cannot be separated from Diphenylamine

0000036

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-004-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT

Lab Sample ID: 9103L829-011

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

Lab File ID: L041010

Level: (low/med) LOW

Date Received: 03/06/91

% Moisture: not dec. 40 dec.

Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/10/91

GPC Cleanup: (Y/N) Y pH: 6.5

Dilution Factor: 1.11

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.57	600	JA NJ
2.	ALDOL CONDENSATE	6.33	600	JA
3.	UNKNOWN	19.15	400	J
4.	ADIPATE	22.18	60000	J
5.	UNKNOWN	22.90	200	J
6.	UNKNOWN	23.52	400	J

00012

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-003-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-013

Sample wt/vol: 31.8 (g/mL) G Lab File ID: L040313

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 34 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/03/91

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

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

CAS NO.	COMPOUND		
108-95-2	Phenol	530	U
111-44-4	bis(2-Chloroethyl)ether	530	U
95-57-8	2-Chlorophenol	530	U
541-73-1	1,3-Dichlorobenzene	530	U
106-46-7	1,4-Dichlorobenzene	530	U
100-51-6	Benzyl alcohol	530	U
95-50-1	1,2-Dichlorobenzene	530	U
95-48-7	2-Methylphenol	530	U
108-60-1	bis(2-Chloroisopropyl)ether	530	U
106-44-5	4-Methylphenol	530	U
621-64-7	N-Nitroso-Di-n-propylamine	530	U
67-72-1	Hexachloroethane	530	U
98-95-3	Nitrobenzene	530	U
78-59-1	Isophorone	530	U
88-75-5	2-Nitrophenol	530	U
105-67-9	2,4-Dimethylphenol	530	U
65-85-0	Benzoic acid	2600	U
111-91-1	bis(2-Chloroethoxy)methane	530	U
120-83-2	2,4-Dichlorophenol	530	U
120-82-1	1,2,4-Trichlorobenzene	530	U
91-20-3	Naphthalene	530	U
106-47-8	4-Chloroaniline	530	U
87-68-3	Hexachlorobutadiene	530	U
59-50-7	4-Chloro-3-methylphenol	530	U
91-57-6	2-Methylnaphthalene	530	U
77-47-4	Hexachlorocyclopentadiene	530	U
88-06-2	2,4,6-Trichlorophenol	530	U
95-95-4	2,4,5-Trichlorophenol	2600	U
91-58-7	2-Chloronaphthalene	530	U
88-74-4	2-Nitroaniline	2600	U
131-11-3	Dimethylphthalate	530	U
208-96-8	Acenaphthylene	530	U
606-20-2	2,6-Dinitrotoluene	530	U

1C
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
04-003-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-013

Sample wt/vol: 31.8 (g/mL) G Lab File ID: L040313

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 34 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/03/91

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

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	2600	U
83-32-9	Acenaphthene	530	U
51-28-5	2,4-Dinitrophenol	2600	U
100-02-7	4-Nitrophenol	2600	U
132-64-9	Dibenzofuran	530	U
121-14-2	2,4-Dinitrotoluene	530	U
84-66-2	Diethylphthalate	530	U
7005-72-3	4-Chlorophenyl-phenylether	530	U
86-73-7	Fluorene	530	U
100-01-6	4-Nitroaniline	2600	U
534-52-1	4,6-Dinitro-2-methylphenol	2600	U
86-30-6	N-Nitrosodiphenylamine (1)	530	U
101-55-3	4-Bromophenyl-phenylether	530	U
118-74-1	Hexachlorobenzene	530	U
87-86-5	Pentachlorophenol	2600	U
85-01-8	Phenanthrene	530	U
120-12-7	Anthracene	530	U
84-74-2	Di-n-Butylphthalate	530	U
206-44-0	Fluoranthene	530	U
129-00-0	Pyrene	530	U
85-68-7	Butylbenzylphthalate	530	U
91-94-1	3,3'-Dichlorobenzidine	1100	U J 7
56-55-3	Benzo(a)anthracene	530	U
218-01-9	Chrysene	530	U
117-81-7	bis(2-Ethylhexyl)phthalate	140	J
117-84-0	Di-n-Octyl phthalate	530	U J 13
205-99-2	Benzo(b)fluoranthene	530	U
207-08-9	Benzo(k)fluoranthene	530	U
50-32-8	Benzo(a)pyrene	530	U
193-39-5	Indeno(1,2,3-cd)pyrene	530	U
53-70-3	Dibenzo(a,h)anthracene	530	U
191-24-2	Benzo(g,h,i)perylene	530	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-003-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-013

Sample wt/vol: 31.8 (g/mL) G Lab File ID: L040313

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 34 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/03/91

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

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.23	400	JA NJ
2.	ALDOL CONDENSATE	6.98	500	JA
3.	UNKNOWN	22.50	200	J
4.	ADIPATE	22.82	40000	J
5.	HYDROCARBON	23.40	1000	J
6.	ALKANE	24.15	200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-015

Sample wt/vol: 30.3 (g/mL) G Lab File ID: L041011

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 50 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/10/91

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	730	U
111-44-4	bis(2-Chloroethyl)ether	730	U
95-57-8	2-Chlorophenol	730	U
541-73-1	1,3-Dichlorobenzene	730	U
106-46-7	1,4-Dichlorobenzene	730	U
100-51-6	Benzyl alcohol	730	U
95-50-1	1,2-Dichlorobenzene	730	U
95-48-7	2-Methylphenol	730	U
108-60-1	bis(2-Chloroisopropyl)ether	730	U
106-44-5	4-Methylphenol	730	U
621-64-7	N-Nitroso-Di-n-propylamine	730	U
67-72-1	Hexachloroethane	730	U
98-95-3	Nitrobenzene	730	U
78-59-1	Isophorone	730	U
88-75-5	2-Nitrophenol	730	U
105-67-9	2,4-Dimethylphenol	730	U
65-85-0	Benzoic acid	3700	U
111-91-1	bis(2-Chloroethoxy)methane	730	U
120-83-2	2,4-Dichlorophenol	730	U
120-82-1	1,2,4-Trichlorobenzene	730	U
91-20-3	Naphthalene	730	U
106-47-8	4-Chloroaniline	730	U
87-68-3	Hexachlorobutadiene	730	U
59-50-7	4-Chloro-3-methylphenol	730	U
91-57-6	2-Methylnaphthalene	730	U
77-47-4	Hexachlorocyclopentadiene	730	U I 10
88-06-2	2,4,6-Trichlorophenol	730	U
95-95-4	2,4,5-Trichlorophenol	3700	U
91-58-7	2-Chloronaphthalene	730	U
88-74-4	2-Nitroaniline	3700	U
131-11-3	Dimethylphthalate	730	U
208-96-8	Acenaphthylene	730	U
606-20-2	2,6-Dinitrotoluene	730	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-015

Sample wt/vol: 30.3 (g/mL) G Lab File ID: L041011

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 50 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/10/91

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	3700	U
83-32-9	Acenaphthene	730	U
51-28-5	2,4-Dinitrophenol	3700	U
100-02-7	4-Nitrophenol	3700	U
132-64-9	Dibenzofuran	730	U
121-14-2	2,4-Dinitrotoluene	730	U
84-66-2	Diethylphthalate	730	U
7005-72-3	4-Chlorophenyl-phenylether	730	U
86-73-7	Fluorene	730	U
100-01-6	4-Nitroaniline	3700	U
534-52-1	4,6-Dinitro-2-methylphenol	3700	U
86-30-6	N-Nitrosodiphenylamine (1)	730	U
101-55-3	4-Bromophenyl-phenylether	730	U
118-74-1	Hexachlorobenzene	730	U
87-86-5	Pentachlorophenol	3700	U
85-01-8	Phenanthrene	730	U
120-12-7	Anthracene	730	U
84-74-2	Di-n-Butylphthalate	730	U
206-44-0	Fluoranthene	730	U
129-00-0	Pyrene	730	U
85-68-7	Butylbenzylphthalate	730	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)anthracene	730	U
218-01-9	Chrysene	730	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	J
117-84-0	Di-n-Octyl phthalate	730	U
205-99-2	Benzo(b)fluoranthene	730	U
207-08-9	Benzo(k)fluoranthene	730	U
50-32-8	Benzo(a)pyrene	730	U
193-39-5	Indeno(1,2,3-cd)pyrene	730	U
53-70-3	Dibenzo(a,h)anthracene	730	U
191-24-2	Benzo(g,h,i)perylene	730	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-002-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-015

Sample wt/vol: 30.3 (g/mL) G Lab File ID: L041011

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 50 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/10/91

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.11

Number TICs found: 10

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.53	700	JA
2.	ALDOL CONDENSATE	6.30	600	JA
3.	UNKNOWN	7.38	500	J
4.	SULFUR	14.88	1000	J
5.	SULFUR	19.93	3000	J
6.	ADIPATE	22.20	100000	J
7.	UNKNOWN	22.78	700	J
8.	UNKNOWN	23.12	200	J
9.	ALKANE	24.13	200	J
10.	ALKANE	26.10	900	J

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-018

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L041106

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 24 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	470	U
111-44-4	bis(2-Chloroethyl)ether	470	U
95-57-8	2-Chlorophenol	470	U
541-73-1	1,3-Dichlorobenzene	470	U
106-46-7	1,4-Dichlorobenzene	470	U
100-51-6	Benzyl alcohol	470	U
95-50-1	1,2-Dichlorobenzene	470	U
95-48-7	2-Methylphenol	470	U
108-60-1	bis(2-Chloroisopropyl)ether	470	U
106-44-5	4-Methylphenol	470	U
621-64-7	N-Nitroso-Di-n-propylamine	470	U
67-72-1	Hexachloroethane	470	U
98-95-3	Nitrobenzene	470	U
78-59-1	Isophorone	470	U
88-75-5	2-Nitrophenol	470	U
105-67-9	2,4-Dimethylphenol	470	U
65-85-0	Benzoic acid	2400	U
111-91-1	bis(2-Chloroethoxy)methane	470	U
120-83-2	2,4-Dichlorophenol	470	U
120-82-1	1,2,4-Trichlorobenzene	470	U
91-20-3	Naphthalene	470	U
106-47-8	4-Chloroaniline	470	U
87-68-3	Hexachlorobutadiene	470	U
59-50-7	4-Chloro-3-methylphenol	470	U
91-57-6	2-Methylnaphthalene	470	U
77-47-4	Hexachlorocyclopentadiene	470	U
88-06-2	2,4,6-Trichlorophenol	470	U
95-95-4	2,4,5-Trichlorophenol	2400	U
91-58-7	2-Chloronaphthalene	470	U
88-74-4	2-Nitroaniline	2400	U
131-11-3	Dimethylphthalate	470	U
208-96-8	Acenaphthylene	470	U
606-20-2	2,6-Dinitrotoluene	470	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-018

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L041106

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 24 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.11

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
99-09-2	3-Nitroaniline	2400	U
83-32-9	Acenaphthene	470	U
51-28-5	2,4-Dinitrophenol	2400	U
100-02-7	4-Nitrophenol	2400	U
132-64-9	Dibenzofuran	470	U
121-14-2	2,4-Dinitrotoluene	470	U
84-66-2	Diethylphthalate	470	U
7005-72-3	4-Chlorophenyl-phenylether	470	U
86-73-7	Fluorene	470	U
100-01-6	4-Nitroaniline	2400	U
534-52-1	4,6-Dinitro-2-methylphenol	2400	U
86-30-6	N-Nitrosodiphenylamine (1)	470	U
101-55-3	4-Bromophenyl-phenylether	470	U
118-74-1	Hexachlorobenzene	470	U
87-86-5	Pentachlorophenol	2400	U
85-01-8	Phenanthrene	470	U
120-12-7	Anthracene	470	U
84-74-2	Di-n-Butylphthalate	470	U
206-44-0	Fluoranthene	470	U
129-00-0	Pyrene	470	U
85-68-7	Butylbenzylphthalate	470	U
91-94-1	3,3'-Dichlorobenzidine	940	U
56-55-3	Benzo(a)anthracene	470	U
218-01-9	Chrysene	470	U
117-81-7	bis(2-Ethylhexyl)phthalate	71	J
117-84-0	Di-n-Octyl phthalate	470	U
205-99-2	Benzo(b)fluoranthene	470	U
207-08-9	Benzo(k)fluoranthene	470	U
50-32-8	Benzo(a)pyrene	470	U
193-39-5	Indeno(1,2,3-cd)pyrene	470	U
53-70-3	Dibenzo(a,h)anthracene	470	U
191-24-2	Benzo(g,h,i)perylene	470	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-001-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT

Lab Sample ID: 9103L829-018

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

Lab File ID: L041106

Level: (low/med) LOW

Date Received: 03/06/91

% Moisture: not dec. 24 dec.

Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/11/91

GPC Cleanup: (Y/N) Y pH: 6.5

Dilution Factor: 1.11

Number TICs found: 12

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.62	500	JA NJ
2.	ALDOL CONDENSATE	6.35	800	JA
3.	UNKNOWN	7.40	800	J
4.	UNKNOWN	12.70	300	J
5.	UNKNOWN	19.10	400	J
6.	ADIPATE	22.15	80000	J
7.	UNKNOWN	22.75	600	J
8.	UNKNOWN	24.37	400	J
9.	UNKNOWN	24.60	200	J
10.	ALKANE	26.02	700	J
11.	UNKNOWN	26.43	200	J
12.	ALKANE	28.78	600	J

1B
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D101

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-019

Sample wt/vol: 31.7 (g/mL) G Lab File ID: L040911

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 21 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/09/91

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

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

CAS NO.	COMPOUND		
108-95-2	Phenol	440	U J 14
111-44-4	bis(2-Chloroethyl)ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
100-51-6	Benzyl alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	2-Methylphenol	440	U
108-60-1	bis(2-Chloroisopropyl)ether	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitroso-Di-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
65-85-0	Benzoic acid	2200	U
111-91-1	bis(2-Chloroethoxy)methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U

1C
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D101

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-019

Sample wt/vol: 31.7 (g/mL) G Lab File ID: L040911

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 21 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/09/91

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

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenyl-phenylether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine (1)	440	U
101-55-3	4-Bromophenyl-phenylether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	440	U
120-12-7	Anthracene	440	U
84-74-2	Di-n-Butylphthalate	440	U
206-44-0	Fluoranthene	440	U
129-00-0	Pyrene	440	U
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	880	U
56-55-3	Benzo(a)anthracene	440	U
218-01-9	Chrysene	440	U
117-81-7	bis(2-Ethylhexyl)phthalate	64	J
117-84-0	Di-n-Octyl phthalate	440	U
205-99-2	Benzo(b)fluoranthene	440	U
207-08-9	Benzo(k)fluoranthene	440	U
50-32-8	Benzo(a)pyrene	440	U
193-39-5	Indeno(1,2,3-cd)pyrene	440	U
53-70-3	Dibenzo(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	440	U

14

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-001-D101

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-019

Sample wt/vol: 31.7 (g/mL) G Lab File ID: L040911

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 21 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/09/91

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

Number TICs found: 15

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.45	500	JA NJ
2.	UNKNOWN	7.48	400	J
3.	PHTHALATE	18.55	100	J
4.	UNKNOWN	19.15	200	J
5.	PHTHALATE	19.32	200	J
6.	UNKNOWN	20.58	100	J
7.	ADIPATE	22.18	30000	J
8.	ALKANE	22.72	100	J
9.	UNKNOWN	22.78	400	J
10.	ALKANE	24.13	200	J
11.	UNKNOWN	24.43	400	J
12.	UNKNOWN	24.67	200	J
13.	UNKNOWN	25.52	200	J
14.	ALKANE	26.08	500	J
15.	ALKANE	28.85	200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D101RE

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT

Lab Sample ID: 9103L829-019 RE

Sample wt/vol: 31.7 (g/mL) G

Lab File ID: L041009

Level: (low/med) LOW

Date Received: 03/06/91

% Moisture: not dec. 21 dec.

Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/10/91

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

Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	440	U
111-44-4	bis(2-Chloroethyl)ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
100-51-6	Benzyl alcohol	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	2-Methylphenol	440	U
108-60-1	bis(2-Chloroisopropyl)ether	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitroso-Di-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
65-85-0	Benzoic acid	2200	U
111-91-1	bis(2-Chloroethoxy)methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D101RE

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-019 RE

Sample wt/vol: 31.7 (g/mL) G Lab File ID: L041009

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 21 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/10/91

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

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenyl-phenylether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine (1)	440	U
101-55-3	4-Bromophenyl-phenylether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	440	U
120-12-7	Anthracene	440	U
84-74-2	Di-n-Butylphthalate	440	U
206-44-0	Fluoranthene	440	U
129-00-0	Pyrene	440	U
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	880	U
56-55-3	Benzo(a)anthracene	440	U
218-01-9	Chrysene	440	U
117-81-7	bis(2-Ethylhexyl)phthalate	69	J
117-84-0	Di-n-Octyl phthalate	440	U
205-99-2	Benzo(b)fluoranthene	440	U
207-08-9	Benzo(k)fluoranthene	440	U
50-32-8	Benzo(a)pyrene	440	U
193-39-5	Indeno(1,2,3-cd)pyrene	440	U
53-70-3	Dibenzo(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	440	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D201

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: WATER Lab Sample ID: 9103L829-020

Sample wt/vol: 800 (g/mL) ML Lab File ID: L040308

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. _____ dec. Date Extracted: 03/10/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/03/91

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	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-Di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic acid	60	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	60	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	60	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.
04-001-D201

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: WATER Lab Sample ID: 9103L829-020

Sample wt/vol: 800 (g/mL) ML Lab File ID: L040308

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. _____ dec. Date Extracted: 03/10/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/03/91

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	60	U	
83-32-9	Acenaphthene	12	U	
51-28-5	2,4-Dinitrophenol	60	U	
100-02-7	4-Nitrophenol	60	U	
132-64-9	Dibenzofuran	12	U	
121-14-2	2,4-Dinitrotoluene	12	U	
84-66-2	Diethylphthalate	12	U	
7005-72-3	4-Chlorophenyl-phenylether	12	U	
86-73-7	Fluorene	12	U	
100-01-6	4-Nitroaniline	60	U	
534-52-1	4,6-Dinitro-2-methylphenol	60	U	
86-30-6	N-Nitrosodiphenylamine (1)	12	U	
101-55-3	4-Bromophenyl-phenylether	12	U	
118-74-1	Hexachlorobenzene	12	U	
87-86-5	Pentachlorophenol	~~60~~	~~U~~ R	15
85-01-8	Phenanthrene	12	U	
120-12-7	Anthracene	12	U	
84-74-2	Di-n-Butylphthalate	~~1~~ 12	~~JB~~ U	1
206-44-0	Fluoranthene	12	U	
129-00-0	Pyrene	12	U	
85-68-7	Butylbenzylphthalate	12	U	
91-94-1	3,3'-Dichlorobenzidine	24	U J	7
56-55-3	Benzo(a)anthracene	12	U	
218-01-9	Chrysene	12	U	
117-81-7	bis(2-Ethylhexyl)phthalate	~~1~~ 12	~~JB~~ U	1
117-84-0	Di-n-Octyl phthalate	12	U J	13
205-99-2	Benzo(b)fluoranthene	12	U	
207-08-9	Benzo(k)fluoranthene	12	U	
50-32-8	Benzo(a)pyrene	12	U	
193-39-5	Indeno(1,2,3-cd)pyrene	12	U	
53-70-3	Dibenzo(a,h)anthracene	12	U	
191-24-2	Benzo(g,h,i)perylene	12	U	

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-001-D201

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: WATER Lab Sample ID: 9103L829-020

Sample wt/vol: 800 (g/mL) ML Lab File ID: L040308

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. _____ dec. Date Extracted: 03/10/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 04/03/91

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

Number TICs found: 17

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	TRICHLOROPROPENE	6.38	4	J NJ
2.	UNKNOWN	6.52	~~20~~	~~JB~~ R2
3.	UNKNOWN	9.80	4	J NJ
4.	UNKNOWN	10.90	~~5~~	~~JB~~ R2
5.	UNKNOWN	18.37	~~4~~	~~JB~~ R2
6.	UNKNOWN	19.02	4	J NJ
7.	HYDROCARBON	19.15	~~10~~	~~JB~~ R2
8.	UNKNOWN	19.27	7	J NJ
9.	HYDROCARBON	20.60	600	J
10.	HYDROCARBON	20.72	40	J
11.	UNKNOWN	20.90	~~30~~	~~JB~~ R2
12.	UNKNOWN	21.00	~~20~~	~~JB~~
13.	UNKNOWN	21.15	~~10~~	~~JB~~
14.	HYDROCARBON	21.97	~~10~~	~~JB~~
15.	UNKNOWN	22.48	4	~~JB~~
16.	UNKNOWN	24.18	4	J NJ
17.	UNKNOWN	24.48	~~3~~	~~JB~~ R2

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D201RE

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: WATER Lab Sample ID: 9103L829-020 RE

Sample wt/vol: 800 (g/mL) ML Lab File ID: L032812

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. _____ dec. Date Extracted: 03/10/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 03/28/91

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	12	U
111-44-4	bis(2-Chloroethyl)ether	12	U
95-57-8	2-Chlorophenol	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
100-51-6	Benzyl alcohol	12	U
95-50-1	1,2-Dichlorobenzene	12	U
95-48-7	2-Methylphenol	12	U
108-60-1	bis(2-Chloroisopropyl)ether	12	U
106-44-5	4-Methylphenol	12	U
621-64-7	N-Nitroso-Di-n-propylamine	12	U
67-72-1	Hexachloroethane	12	U
98-95-3	Nitrobenzene	12	U
78-59-1	Isophorone	12	U
88-75-5	2-Nitrophenol	12	U
105-67-9	2,4-Dimethylphenol	12	U
65-85-0	Benzoic acid	60	U
111-91-1	bis(2-Chloroethoxy)methane	12	U
120-83-2	2,4-Dichlorophenol	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
91-20-3	Naphthalene	12	U
106-47-8	4-Chloroaniline	12	U
87-68-3	Hexachlorobutadiene	12	U
59-50-7	4-Chloro-3-methylphenol	12	U
91-57-6	2-Methylnaphthalene	12	U
77-47-4	Hexachlorocyclopentadiene	12	U
88-06-2	2,4,6-Trichlorophenol	12	U
95-95-4	2,4,5-Trichlorophenol	60	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	60	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-D201RE

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: WATER Lab Sample ID: 9103L829-020 RE

Sample wt/vol: 800 (g/mL) ML Lab File ID: L032812

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. _____ dec. Date Extracted: 03/10/91

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 03/28/91

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	60	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	60	U
100-02-7	4-Nitrophenol	60	U
132-64-9	Dibenzofuran	12	U
121-14-2	2,4-Dinitrotoluene	12	U
84-66-2	Diethylphthalate	12	U
7005-72-3	4-Chlorophenyl-phenylether	12	U
86-73-7	Fluorene	12	U
100-01-6	4-Nitroaniline	60	U
534-52-1	4,6-Dinitro-2-methylphenol	60	U
86-30-6	N-Nitrosodiphenylamine (1)	12	U
101-55-3	4-Bromophenyl-phenylether	12	U
118-74-1	Hexachlorobenzene	12	U
87-86-5	Pentachlorophenol	60	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-Butylphthalate	2	JB
206-44-0	Fluoranthene	12	U
129-00-0	Pyrene	12	U
85-68-7	Butylbenzylphthalate	12	U
91-94-1	3,3'-Dichlorobenzidine	24	U
56-55-3	Benzo(a)anthracene	12	U
218-01-9	Chrysene	12	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	JB
117-84-0	Di-n-Octyl phthalate	12	U
205-99-2	Benzo(b)fluoranthene	12	U
207-08-9	Benzo(k)fluoranthene	12	U
50-32-8	Benzo(a)pyrene	12	U
193-39-5	Indeno(1,2,3-cd)pyrene	12	U
53-70-3	Dibenzo(a,h)anthracene	12	U
191-24-2	Benzo(g,h,i)perylene	12	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

1B
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-001-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-021

Sample wt/vol: 30.1 (g/mL) G Lab File ID: L041109

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 19 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

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

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

CAS NO.	COMPOUND		
108-95-2	Phenol	460	U
111-44-4	bis(2-Chloroethyl)ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
100-51-6	Benzyl alcohol	460	U
95-50-1	1,2-Dichlorobenzene	460	U
95-48-7	2-Methylphenol	460	U
108-60-1	bis(2-Chloroisopropyl)ether	460	U
106-44-5	4-Methylphenol	460	U
621-64-7	N-Nitroso-Di-n-propylamine	460	U
67-72-1	Hexachloroethane	460	U
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
65-85-0	Benzoic acid	2300	U
111-91-1	bis(2-Chloroethoxy)methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	2300	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	2300	U
131-11-3	Dimethylphthalate	460	U
208-96-8	Acenaphthylene	460	U
606-20-2	2,6-Dinitrotoluene	460	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-001-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-021

Sample wt/vol: 30.1 (g/mL) G Lab File ID: L041109

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 19 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

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

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	2300	U
83-32-9	Acenaphthene	460	U
51-28-5	2,4-Dinitrophenol	2300	U
100-02-7	4-Nitrophenol	2300	U
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U
84-66-2	Diethylphthalate	460	U
7005-72-3	4-Chlorophenyl-phenylether	460	U
86-73-7	Fluorene	460	U
100-01-6	4-Nitroaniline	2300	U
534-52-1	4,6-Dinitro-2-methylphenol	2300	U
86-30-6	N-Nitrosodiphenylamine (1)	460	U
101-55-3	4-Bromophenyl-phenylether	460	U
118-74-1	Hexachlorobenzene	460	U
87-86-5	Pentachlorophenol	2300	U
85-01-8	Phenanthrene	66	J
120-12-7	Anthracene	460	U
84-74-2	Di-n-Butylphthalate	460	U
206-44-0	Fluoranthene	65	J
129-00-0	Pyrene	50	J
85-68-7	Butylbenzylphthalate	460	U
91-94-1	3,3'-Dichlorobenzidine	920	U
56-55-3	Benzo(a)anthracene	54	J
218-01-9	Chrysene	75	
117-81-7	bis(2-Ethylhexyl)phthalate	61	J
117-84-0	Di-n-Octyl phthalate	460	U
205-99-2	Benzo(b)fluoranthene	460	U
207-08-9	Benzo(k)fluoranthene	460	U
50-32-8	Benzo(a)pyrene	460	U
193-39-5	Indeno(1,2,3-cd)pyrene	460	U
53-70-3	Dibenzo(a,h)anthracene	460	U
191-24-2	Benzo(g,h,i)perylene	460	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10-001-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-021

Sample wt/vol: 30.1 (g/mL) G Lab File ID: L041109

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 19 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

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

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.52	300	JA
2.	ALDOL CONDENSATE	6.27	600	JA
3.	ADIPATE	22.18	70000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-002-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-022

Sample wt/vol: 31.2 (g/mL) G Lab File ID: L041108

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 21 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
108-95-2	Phenol	450	U
111-44-4	bis(2-Chloroethyl)ether	450	U
95-57-8	2-Chlorophenol	450	U
541-73-1	1,3-Dichlorobenzene	450	U
106-46-7	1,4-Dichlorobenzene	450	U
100-51-6	Benzyl alcohol	450	U
95-50-1	1,2-Dichlorobenzene	450	U
95-48-7	2-Methylphenol	450	U
108-60-1	bis(2-Chloroisopropyl)ether	450	U
106-44-5	4-Methylphenol	450	U
621-64-7	N-Nitroso-Di-n-propylamine	450	U
67-72-1	Hexachloroethane	450	U
98-95-3	Nitrobenzene	450	U
78-59-1	Isophorone	450	U
88-75-5	2-Nitrophenol	450	U
105-67-9	2,4-Dimethylphenol	450	U
65-85-0	Benzoic acid	2200	U
111-91-1	bis(2-Chloroethoxy)methane	450	U
120-83-2	2,4-Dichlorophenol	450	U
120-82-1	1,2,4-Trichlorobenzene	450	U
91-20-3	Naphthalene	450	U
106-47-8	4-Chloroaniline	450	U
87-68-3	Hexachlorobutadiene	450	U
59-50-7	4-Chloro-3-methylphenol	450	U
91-57-6	2-Methylnaphthalene	450	U
77-47-4	Hexachlorocyclopentadiene	450	U
88-06-2	2,4,6-Trichlorophenol	450	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	450	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	450	U
208-96-8	Acenaphthylene	450	U
606-20-2	2,6-Dinitrotoluene	450	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-002-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-022

Sample wt/vol: 31.2 (g/mL) G Lab File ID: L041108

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 21 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.11

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	450	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	450	U
121-14-2	2,4-Dinitrotoluene	450	U
84-66-2	Diethylphthalate	450	U
7005-72-3	4-Chlorophenyl-phenylether	450	U
86-73-7	Fluorene	450	U
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine (1)	450	U
101-55-3	4-Bromophenyl-phenylether	450	U
118-74-1	Hexachlorobenzene	450	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	450	U
120-12-7	Anthracene	450	U
84-74-2	Di-n-Butylphthalate	450	U
206-44-0	Fluoranthene	450	U
129-00-0	Pyrene	450	U
85-68-7	Butylbenzylphthalate	450	U
91-94-1	3,3'-Dichlorobenzidine	900	U
56-55-3	Benzo(a)anthracene	450	U
218-01-9	Chrysene	450	U
117-81-7	bis(2-Ethylhexyl)phthalate	450	U
117-84-0	Di-n-Octyl phthalate	450	U
205-99-2	Benzo(b)fluoranthene	450	U
207-08-9	Benzo(k)fluoranthene	450	U
50-32-8	Benzo(a)pyrene	450	U
193-39-5	Indeno(1,2,3-cd)pyrene	450	U
53-70-3	Dibenzo(a,h)anthracene	450	U
191-24-2	Benzo(g,h,i)perylene	450	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10-002-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-022

Sample wt/vol: 31.2 (g/mL) G Lab File ID: L041108

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 21 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.11

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.78	300	JA NJ
2.	ALDOL CONDENSATE	6.48	900	JA
3.	ADIPATE	22.17	400	J
4.	UNKNOWN	23.02	200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-003-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-023

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L041103

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 22 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg	
108-95-2	Phenol	460	U
111-44-4	bis(2-Chloroethyl)ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
100-51-6	Benzyl alcohol	460	U
95-50-1	1,2-Dichlorobenzene	460	U
95-48-7	2-Methylphenol	460	U
108-60-1	bis(2-Chloroisopropyl)ether	460	U
106-44-5	4-Methylphenol	460	U
621-64-7	N-Nitroso-Di-n-propylamine	460	U
67-72-1	Hexachloroethane	460	U
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
65-85-0	Benzoic acid	2300	U
111-91-1	bis(2-Chloroethoxy)methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	2300	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	2300	U
131-11-3	Dimethylphthalate	460	U
208-96-8	Acenaphthylene	460	U
606-20-2	2,6-Dinitrotoluene	460	U

1C

U U U U 2 4 4 CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS SHEET

10-003-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-023

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L041103

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 22 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

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

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	2300	U
83-32-9	Acenaphthene	460	U
51-28-5	2,4-Dinitrophenol	2300	U
100-02-7	4-Nitrophenol	2300	U
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U
84-66-2	Diethylphthalate	460	U
7005-72-3	4-Chlorophenyl-phenylether	460	U
86-73-7	Fluorene	460	U
100-01-6	4-Nitroaniline	2300	U
534-52-1	4,6-Dinitro-2-methylphenol	2300	U
86-30-6	N-Nitrosodiphenylamine (1)	460	U
101-55-3	4-Bromophenyl-phenylether	460	U
118-74-1	Hexachlorobenzene	460	U
87-86-5	Pentachlorophenol	2300	U
85-01-8	Phenanthrene	170	J
120-12-7	Anthracene	460	U
84-74-2	Di-n-Butylphthalate	460	U
206-44-0	Fluoranthene	88	J
129-00-0	Pyrene	92	J
85-68-7	Butylbenzylphthalate	460	U
91-94-1	3,3'-Dichlorobenzidine	920	U
56-55-3	Benzo(a)anthracene	52	J
218-01-9	Chrysene	90	
117-81-7	bis(2-Ethylhexyl)phthalate	460	U
117-84-0	Di-n-Octyl phthalate	460	U
205-99-2	Benzo(b)fluoranthene	460	U
207-08-9	Benzo(k)fluoranthene	460	U
50-32-8	Benzo(a)pyrene	460	U
193-39-5	Indeno(1,2,3-cd)pyrene	460	U
53-70-3	Dibenzo(a,h)anthracene	460	U
191-24-2	Benzo(g,h,i)perylene	460	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2 12/88 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10-003-D001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-03-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SEDIMENT Lab Sample ID: 9103L829-023

Sample wt/vol: 30.8 (g/mL) G Lab File ID: L041103

Level: (low/med) LOW Date Received: 03/06/91

% Moisture: not dec. 22 dec. Date Extracted: 03/13/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/11/91

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

Number TICs found: 11

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.78	500	JA NF
2.	UNKNOWN	6.48	300	J
3.	UNKNOWN	7.48	600	J
4.	PHTHALATE	18.53	200	J
5.	PAH	19.15	200	J
6.	PAH	19.33	300	J
7.	ADIPATE	22.17	20000	J
8.	HYDROCARBON	22.72	100	J
9.	UNKNOWN	22.78	400	J
10.	ALKANE	24.13	200	J
11.	UNKNOWN	24.23	200	J

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 91031829

LAB: R.F WESTON - LIONVILLE

SITE: COLTSNECK NAVAL WEAPONS STATION

1.0 Data Completeness and Deliverables	YES	NO	N/A
1.1 Have any missing deliverables been received and added to the data package.	[ ]		
ACTION: Call lab for explanation / resubmittal of any missing deliverables. If lab cannot provide them, note the effect on review of the package under the "Contract Problems/Non-compliance" section of reviewer narrative.			
1.2 Was SMO CCS checklist included with package?	[ ]	✓	
2.0 Cover Letter/Case Narrative			
2.1 Is the Narrative or Cover Letter present?	[✓]		
2.2 Are Case Number and/or SAS number contained in the Narrative or Cover Letter?	[✓]		
3.0 Data Validation Checklist			

The following checklist is divided into three parts. Part A is filled out if the data package contains any VOA analyses, Part B for any BNA analyses and Part C for Pesticide/PCBs.

Does this package contain:

VOA data?		✓
BNA data?	✓	
Pesticide/PCB data?		✓

ACTION: Complete corresponding parts of checklist.

	YES	NO	N/A
PART B: BNA ANALYSES			
.0 Traffic Reports and Laboratory Narrative			
1.1 Are the Traffic Report Forms present for all samples?	[✓]		
ACTION: If no, contact lab for replacement of missing or illegible copies.			
1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data?		[✓]	
ACTION: Use professional judgement to evaluate the effect on the quality of the data.			
ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J).			
.0 Holding Times			
2.1 Have any BNA holding times, determined from date of collection to date of extraction, been exceeded?		[✓]	
Samples for BNA analysis, both soils and waters, must be extracted within seven days of the date of collection. Extracts must be analyzed within 40 days of the date of extraction.			

Table of Holding Time Violations

Sample	Sample Matrix	Date Sampled	(See Traffic Report) Date Lab Received	Date Extracted	Date Analyzed

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ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("UJ"), and document in the narrative that holding times were exceeded.

	YES	NO	N/A
If analyses were done more than 14 days beyond holding time, either on the first analysis or upon reanalysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. The reviewer may determine that non-detect data are unusable ("R").			
.0 Surrogate Recovery (Form II)			
3.1 Are the BNA Surrogate Recovery Summaries (Form II) present for each of the following matrices:			
a. Low Water	✓		
b. Med Water			✓
c. Low Soil	✓		
d. Med Soil			✓
3.2 Are all the BNA samples listed on the appropriate Surrogate Recovery Summaries for each of the following matrices:			
a. Low Water	✓		
b. Med Water			✓
c. Low Soil	✓		
d. Med Soil			✓
ACTION: Call lab for explanation / resubmittals. If missing deliverables are unavailable, document effect on data under "Conclusions" section of reviewer narrative.			
3.3 Were outliers marked correctly with an asterisk?			✓
ACTION: Circle all outliers in red.			
3.4 Were two or more base-neutral OR acid surrogate recoveries out of specification for any sample or method blank?			✓
If yes, were samples reanalyzed?			✓
Were method blanks reanalyzed?			✓
ACTION: If all BNA surrogate recoveries are > 10% but two within the base-neutral or acid fraction do not meet SOW specifications, for the affected fraction only (i.e. base-neutral OR acid compounds): 1. Flag all positive results as estimated ("J"). 2. Flag all non-detects as estimated detection limits ("UJ").			

	YES	NO	N/A
If any base-neutral or acid surrogate has a recovery of <10% : 1. Flag all positive results for that fraction (i.e. all acid or base-neutral compounds) "J". 2. Flag all non-detects for that fraction "R". Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and re-analyses. Check the internal standard areas.			
3.5 Are there any transcription/calculation errors between raw data and Form II?	___	[✓]	___
ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			

.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike Duplicate/Recovery Form (Form III) present?	[✓]	___	___
4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices:			
a. Low Water (Blank Spike)	[✓]	___	___
b. Med Water	[ ]	___	✓
c. Low Soil	[✓]	___	___
d. Med Soil	[ ]	___	✓
ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.			

4.3 How many BNA spike recoveries are outside QC limits?

Water	Soils
1 out of 22	0 out of 22

4.4 How many RPD's for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soils
0 out of 11	0 out of 11

ACTION: If MS and MSD both have less than 10% recovery for an analyte, negative results for that analyte should be rejected, and positive results should be flagged "J". The above applies only to the sample used for MS/MSD analysis. Use professional judgement in applying this criterion to other samples.

	YES	NO	N/A
5.0 Blanks (Form IV)			
5.1 Is the Method Blank Summary (Form IV) present?	[✓]	___	___
5.2 Frequency of Analysis: for the analysis of BNA TCL compounds, has a reagent/method blank been analyzed for each set of samples or every 20 samples of similar matrix (low water, med water, low soil, medium soil), whichever is more frequent?	[✓]	___	___
5.3 Has a BNA ~~instrument~~ Method blank been analyzed for each GS/MS system used.	[✓]	___	___
ACTION: If any method blank data are missing, call lab for explanation/resubmittal. If not available, reject all associated positive data ("R").			
5.4 Chromatography: review the blank raw data - chromatograms (RICs), quant reports or data system printouts and spectra.			
Is the chromatographic performance (baseline stability) for each instrument acceptable for VOAs?	[✓]	___	___
ACTION: Use professional judgement to determine the effect on the data.			
6.0 Contamination			
NOTE: "Water blanks" and "distilled water blanks" are validated like any other sample and are not used to qualify data. Do not confuse them with the other QC blanks discussed below.			
6.1 Do any method/instrument/reagent blanks have positive results (TCL and/or TIC) for BNAs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample Dilution Factor.	[✓]	___	___
6.2 Do any field/rinse blanks have positive BNA results (TCL and/or TIC)?	___	[✓]	___
ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)	Not identified		
NOTE: Only field/rinse blanks taken the same day as the samples are used to qualify data. Blanks may not be qualified because of contamination in another blank. Blanks may be qualified for surrogate, spectral, tuning or calibration QC problems.			

YES NO N/A

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

	Sample conc > CRQL but < 10x blank	Sample conc < CRQL & is < 10x blank value	Sample conc > CRQL value & >10x blank value
Common Phthalate Esters	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

	Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & > 5 blank value
Other Contaminants	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed

ACTION: For TIC compounds, if the concentration in the sample is less than five times the concentration in the most contaminated associated blank, flag the sample data "R" (unusable).

6.3 Are there field/rinse/equipment blanks associated with every sample? [ ] [✓] ___

ACTION: For low level samples, note in data assessment that there is no associated field/rinse/equipment blank. Exception: samples taken from a drinking water tap do not have associated field blanks. Not identified.

7.0 GC/MS Tuning and Mass Calibration (Form V)

7.1 Are the GC/MS Tuning and Mass Calibration Forms (Form V) present for Decafluorotriphenylphosphine (DFTPP)? [✓] ___ ___

7.2 Are the enhanced bar graph spectrum and mass/charge (m/z) listing for the DFTPP provided for each twelve hour shift? [✓] ___ ___

7.3 Has a tuning performance compound been analyzed for every twelve hours of sample analysis per instrument? [✓] ___ ___

ACTION: If any tuning data are missing, take action specified in 3.2 above.

ACTION: List date, time, instrument ID, and sample analyses for which no associated GC/MS tuning data are available.

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS

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ACTION: If lab cannot provide missing data, reject ("R") all data generated outside an acceptable twelve hour calibration interval.

	YES	NO	N/A
7.4 Have the ion abundance criteria been met for each instrument used?	✓		

ACTION: List all data which do not meet ion abundance criteria (attach a separate sheet).

ACTION: If tuning calibration is in error, flag all associated sample data as unusable ("R"). However, if expanded ion criteria are met (See 1988 Functional Guidelines), the data reviewer may accept data with appropriate qualifiers.

	YES	NO	N/A
7.5 Are there any transcription / calculation errors between mass lists and Form Vs? (Check at least two values but if errors are found, check more.)		✓	
7.6 Have the appropriate number of significant figures (two) been reported? (Check at least two values, but if errors are found check more values.)	✓		

ACTION: If large errors exist, call lab for explanation / resubmittal, make necessary corrections and note errors under "Conclusions".

	YES	NO	N/A
7.7 Are the spectra of the mass calibration compound acceptable?	✓		

ACTION: Use professional judgement to determine whether associated data should be accepted, qualified, or rejected.

8.0 Target Compound List (TCL) Analytes

	YES	NO	N/A
8.1 Are the Organic Analysis Data Sheets (Form I BNA) present with required header information on each page, for each of the following:			
a. Samples and/or fractions as appropriate	✓		
b. Matrix spikes and matrix spike duplicates	✓		
c. Blanks	✓		

	YES	NO	N/A
8.2 Are the BNA Reconstructed Ion Chromatograms, the mass spectra for the identified compounds, and the data system printouts (Quant Reports) included in the sample package for each of the following?			
a. Samples and/or fractions as appropriate	[✓]		
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	[✓]		
c. Blanks	[✓]		
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	[ ]	✓	
	Quant ion		
8.4 Is chromatographic performance acceptable with respect to:			
Baseline stability	[✓]		
Resolution	[✓]		
Peak shape	[✓]		
Full-scale graph (attenuation)	[✓]		
Other: _____	[ ]		✓
ACTION: Use professional judgement to determine the acceptability of the data.			
8.5 Are the lab-generated standard mass spectra of the identified BNA compounds present for each sample?	[✓]		
ACTION: If any mass spectra are missing, take action specified in 3.2 above. If Lab does not generate their own standard spectra, make note in "Contract Problems/Non-compliance".			
8.6 Is the RRT of each reported compound within 0.06 RRT units of the standard RRT in the continuing calibration?	[✓]		
8.7 Are all ions present in the standard mass spectrum at a relative intensity greater than 10% also present in the sample mass spectrum?	[✓]		
8.8 Do sample and standard relative ion intensities agree within 20%?	[✓]		
ACTION: Use professional judgement to determine acceptability of data. If it is determined that incorrect identifications were made, all such data should be rejected, flagged "N" (presumptive evidence of the presence of the compound) or changed to not detected (at the calculated detection limit).			

	YES	NO	N/A
9.0 Tentatively Identified Compounds (TIC)			
9.1 Are all Tentatively Identified Compound Forms (Form I, Part B) present; and do listed TICs include scan number or retention time, estimated concentration and "J" qualifier?	✓		
9.2 Are the mass spectra for the tentatively identified compounds and associated "best match" spectra included in the sample package for each of the following:			
a. Samples and/or fractions as appropriate	✓		
b. Blanks	✓		
ACTION: If any TIC data are missing, take action specified in 3.2 above.			
ACTION: Add "J" qualifier if missing and "N" qualifier to all identified TIC compounds on Form I, Part B.			
9.3 Are any TCL compounds (from any fraction) listed as TIC compounds (example: 1,2-dimethylbenzene is xylene—a VOA TCL—and should not be reported as a TIC)?		✓	
ACTION: Flag with "R" any TCL compound listed as a TIC.			
9.4 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?	✓		
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	✓		
ACTION: Use professional judgement to determine acceptability of TIC identifications. If it is determined that an incorrect identification was made, change identification to "unknown" or to some less specific identification (example: "C3 substituted benzene") as appropriate.			
10.0 Compound Quantitation and Reported Detection Limits			
10.1 Are there any transcription / calculation errors in Form I results? Check at least two positive values. Verify that the correct internal standard, quantitation ion, and RRF were used to calculate Form I result. Were any errors found?		✓	
10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture?	✓		

	YES	NO	N/A
ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".			
ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with data from the analysis of diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.			
11.0 Standards Data (GC/MS)			
11.1 Are the Reconstructed Ion Chromatograms, and data system printouts (Quant. Reports) present for initial and continuing calibration?	[✓]	___	___
ACTION: If any calibration standard data are missing, take action specified in 3.2 above.			
12.0 GC/MS Initial Calibration (Form VI)			
12.1 Are the Initial Calibration Forms (Form VI) present and complete for the BNA fraction?	[✓]	___	___
ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.			
12.2 Are response factors stable for BNAs over the concentration range of the calibration (RSD <30%)?	[___]	✓	___
ACTION: Circle all outliers in red.			
ACTION: When RSD >30%, non-detects may be qualified using professional judgement. Flag all positive results "J". When RSD >90%, flag all non-detects as unusable ("R"). (Region II policy.)			
12.3 Do any compounds have a RRF < 0.05?	___	[✓]	___
ACTION: Circle all outliers in red.			
ACTION: If any BNA compound has an average RRF < 0.05, flag positive results for that compound as estimated ("J"), and flag non-detects for that compound as unusable ("R").			

	YES	NO	N/A
12.4 Are there any transcription / calculation errors in the reporting of average response factors (RRF) or %RSD? (Check at least two values but if errors are found, check more.)		✓	

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

13.0 GC/MS Continuing Calibration (Form VII)

	YES	NO	N/A
13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BNA fraction?	✓		
13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?	✓		

ACTION: List below all sample analyses that were not within twelve hours of the previous continuing calibration analysis.

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ACTION: If any forms are missing or no continuing calibration standard has been analyzed within twelve hours of every sample analysis, call lab for explanation / resubmittal. If continuing calibration data are not available, flag all associated sample data as unusable ("R").

	YES	NO	N/A
13.3 Do any continuing calibration standard compounds have a RRF < 0.05?		✓	

ACTION: Circle all outliers in red.

ACTION: If any BNA compound has a RRF < 0.05, flag positive results for that compound as estimated ("J"), and flag non-detects for that compound as unusable ("R").

	YES	NO	N/A
13.4 Do any compounds have a % difference between initial and continuing calibration RRF > 25%?	✓		

ACTION: Circle all outliers in red and qualify associated sample data as outlined in the table below:

YES NO N/A

% DIFFERENCE

25-50	50-90	>90
'J' positive results, no action for non detects	'J' positive results, 'UJ' non detects	'J' positive results, "R" non detects

13.5 Are there any transcription / calculation errors in the reporting of average response factors (RRF) or difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.) ___ [✓] ___

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits for each continuing calibration? [___] ___ ___

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit
04-001-D201RE	NPT	69366	108690	434758
↓	ANT	64174	77744	310974
04-003-D001	PRY	32502	6375	25498
04-003-D001MS	↓	29854	↓	↓
04-003-D001MSD	↓	25530	↓	↓
04-001-D201	↓	29571	↓	↓

(Attach additional sheets if necessary.)

ACTION: If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard. If extremely low area counts are reported, or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

YES NO N/A

% DIFFERENCE

25-50	50-90	>90
'J' positive results, no action for non detects	'J' positive results, 'UJ' non detects	'J' positive results, "R" non detects

13.5 Are there any transcription / calculation errors in the reporting of average response factors (RRF) or difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.) ___ [___] ✓

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

14.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits for each continuing calibration? [___] ✓ ___

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit
04-001-D101	DeB	59402	9054	36216
	NPT	209063	37275	149098
	ANT	113510	19512	78048
	PHN	163596	28974	115894
	CRY	113791	~~19744~~ 27128	108512

(Attach additional sheets if necessary.)

ACTION: If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard. If extremely low area counts are reported, or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

YES NO N/A

% DIFFERENCE

25-50	50-90	>90
'J' positive results, no action for non detects	'J' positive results, 'UJ' non detects	'J' positive results, "R" non detects

13.5 Are there any transcription / calculation errors in the reporting of average response factors (RRF) or difference (%D) between initial and continuing RRFs? (Check at least two values but if errors are found, check more.) ___ [✓] ___

ACTION: Circle errors in red.

ACTION: If errors are large, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".

EMM 8-29-91

4.0 Internal Standards (Form VIII)

14.1 Are the internal standard areas (Form VIII) of every sample and blank within the upper and lower limits for each continuing calibration? [✓] ✓ ___

ACTION: List all the outliers below.

Sample #	Internal Std	Area	Lower Limit	Upper Limit
64-001-D101RE	DCB	26751	5340	21358
	NPT	113970	21839	87356
	ANT	63617	11324	45294
	PHN	105026	15807	63228
	CRY	83294	19532	78128

(Attach additional sheets if necessary.)

ACTION: If the internal standard area count is outside the upper or lower limit, flag with "J" all positive results and non-detects (U values) quantitated with this internal standard. If extremely low area counts are reported, or if performance exhibits a major abrupt drop off, flag all associated non-detects as unusable ("R").

14.2 Are the retention times of the internal standards within 30 seconds of the associated calibration standard? [✓] ___ ___

ACTION: Professional judgement should be used to qualify data if the retention times differ by more than 30 seconds.

	YES	NO	N/A
.0 Field Duplicates			
15.1 Were any field duplicates submitted for BNA analysis?	[ ]	✓	

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference. Not identified.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

ATTACHMENT 1
SOP NO. HW-6

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TOTAL REVIEW

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

Case No. 91134829 SDG No. — LABORATORY R.I. WESTON SITE COLTSNECK.
LIONVILLE

DATA ASSESSMENT:

The current functional guidelines for evaluating organic data have been applied.

All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "R" (unusable), or "NJ" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Reviewer's Signature: [signature] Date: 8/29/1991

Verified By: Paul B Hurley Date: 9/5/1991

DATA ASSESSMENT:

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples will be qualified as estimated, "J". The non-detects sample quantitation limits will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

No Action

EMM
8-29-91

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DATA ASSESSMENT:

2. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip field, rinse and water blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field blanks measure cross- contamination of samples during field operations. Water blanks measure potential contamination of the distilled water used used during decontamination of field equipment. If the concentration of the analyte is less than 5 times (10 times for the common contaminants), the analytes are qualified as non- detects, "U". The following analytes in the samples shown were qualified with "U" for these reasons:

A) Method blank contamination

91LE0326-MB1 –
04-001-D201RE
04-001-D201 - Di-n-butylphthalate -CRQL
bis(2-Ethylhexyl)phthalate - CRQL.
TIC's - 2,4,5,7,11-15,17 - Reject. (not for RE)

91LE0347-MB1
No contamination – also no Aldol condensation products.

B) Field or rinse blank contamination

Not identified

C) Water blank contamination

See above

D) Trip blank contamination

Not identified.

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DATA ASSESSMENT:

3. SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure mass resolution, identification of compounds, and to some degree, the instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene and for semi-volatiles is decafluorotriphenyl- phosphine.

If the mass calibration is in error, all associated data will be classified as unusable, "R".

No Action

8-29-91

DATA ASSESSMENT:

4. CALIBRATION:

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance in the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) RESPONSE FACTOR:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be $\geq$ 0.05 either in the initial or continuing calibration. A value < 0.05 indicates a serious detection and quantitation problem. Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be qualified as rejected, "R".

No Action

EMM
8-29-91

DATA ASSESSMENT:

5. CALIBRATION:

A) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If there is a gross deviation of %RSD and %D, the non-detects may be qualified as rejected, "R".

For the PCB/PESTICIDE fraction, %RSD for aldrin, endrin, DDT, and dibutylchlorendate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

* Int Cal IN50J - 3-21-91 - No Action
* Cont. Cal. IN50J - 3-22-91 - SBLKLE0326-MB1
J pos (>25-<50) 2,4-dinitrophenol, 4-Nitrophenol.
* Int Cal 4500V - 3-25-91 - No Action
* Cont Cal 4500V - 3-26-91 - No Action
* Int Cal ~~4500V~~ EMM 5100L - 3-28-91 - 04-001-D201RE
J pos (>30-<90) 3,3'-dichlorobenzidine
* Int Cal - 5100L - 4-2-91 - No Samples -
Benzoic Acid - 42.7% RSD.
* Cont Cal - 5100L - 4-3-91 - 04-001-D201, 04-003-D001, MS, MSD
J pos (>25-<50) - Benzoic Acid, Butylbenzyl phthalate, bis(2-ethylhexyl) phthalate, Indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene
J pos, UJ-NDs (>50-<90) 3,3'-dichlorobenzidine
* ~~Int Cal~~ EMM 8-29-91

continued next page.

DATA ASSESSMENT:

5. CALIBRATION:

A) PERCENT RELATIVE STANDARD DEVIATION (%RSD) AND PERCENT DIFFERENCE (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be <30% and %D must be <25%. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If there is a gross deviation of %RSD and %D, the non-detects may be qualified as rejected, "R".

For the PCB/PESTICIDE fraction, %RSD for aldrin, endrin, DDT, and dibutylchlorendate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

* Init. Cal - 5100L - 4-9-91 - 04-001-D101
J pos (>30-<90) 2,4-dinitrophenol, di-n-butylphthalate, butylbenzylphthalate, 3,3'-dichlorobenzidine, bis(2-Ethylhexyl)phthalate.
* Cont Cal - 5100L - 4-10-91 - 04-001-D101RE, 04-004-D001, 04-002-D001, SBLKLE0347-MB1, SBLKLE0347-MB1 BS
J pos (>25-<50) 2-Nitroaniline, 4-Nitrophenol, pyrene, bis(2-chloroethyl)ether
J pos, UJ-NDs (>50-<90) Hexachlorocyclopentadiene
* Cont Cal - 5100L - 4-11-91 10-003-D001, 04-001-D001, 10-002-D001, 10-001-D001
J pos (>25-<50) Nitrobenzene, 2-Nitroaniline, 4-Nitrophenol, di-n-butylphthalate, butylbenzylphthalate, bis-(2-Ethylhexyl)phthalate,
* Nitrobenzene-d5, *2,4,6-Tribromophenol
* Surrogate.

DATA ASSESSMENT:

6. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation in order to evaluate the laboratory performance and to estimate the efficiency of the analytical technique. If the measured surrogate concentration is outside of the contract specifications, qualifications were applied to the samples and analytes as shown below.

No Action

EMM
8-29-91

DATA ASSESSMENT:

7. INTERNAL STANDARDS PERFORMANCE:

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are to be qualified as estimated, "J", and all non-detects as "UJ" or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample fraction.

* 04-001-D201RE – NPT, ANT – J/UJ cmpds – low
* 04-003-D001, 04-003-D001MS, 04-003-D001MSD, 04-001-D201 – PRY high, J/UJ associated cmpds.
* 04-001-D101, 04-001-D101RE, All int stds except PRY are high, J/UJ associated cmpds.

EMW
8-29-91

DATA ASSESSMENT:

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

TCL compounds are identified on the GC/MS by using the analytes relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary M/E lines within 20% of that in the standard compound. For the tentatively identified compounds, TIC, the ion spectra must match accurately. In the cases where there is not a perfect ion spectrum match, the laboratory may have provided false positive identifications.

B) PESTICIDE FRACTION:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/uL in the final sample extract.

No Action

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DATA ASSESSMENT:

9. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for some additional qualification of the data.

The water BS/BSD contained pentachlorophenol with ~~[illegible]~~ SMW 7-29-91 recoveries less than 10%. Reject ND in the water sample and qualify positive results as estimated (J) for pentachlorophenol.

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DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

None.

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

System performance fair.
Data package fair.

12. CONTRACT PROBLEMS 0 NON-COMPLIANCE:

13. This package contains re-extraction, re-analysis or dilution. Upon reviewing the QA results, the following form I(s) are identified to be used.

04-001-D201 instead of 04-001-D201 RE.

DPO: [ ] ACTION [ ] FYI Region_____

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 91031829 LABORATORY R.F. WESTON - LIONVILLE

SDG NO. _____ DATA USER R.F. WESTON

SOW 2/88 CLP / REGION II REVIEW COMPLETION DATE 8-29-91

NO. OF SAMPLES 1 WATER 8 SOIL _____ OTHER

REVIEWER [ ] ESD [ ] ESAT [X] OTHER, CONTRACT/CONTRACTOR HEARTLAND EST

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES		O		
2. GC-MS TUNE/ GC PERFORMANCE		O		
3. INITIAL CALIBRATIONS		O		
4. CONTINUING CALIBRATIONS		X		
5. FIELD BLANKS ("F" = not applicable)		F		
6. LABORATORY BLANKS		O		
7. SURROGATES		O		
8. MATRIX SPIKE/DUPLICATES		O		
9. REGIONAL QC ("F" = not applicable)		F		
10. INTERNAL STANDARDS		M		
11. COMPOUND IDENTIFICATION		O		
12. COMPOUND QUANTITATION		O		
13. SYSTEM PERFORMANCE		O		
14. OVERALL ASSESSMENT		M		

O = No problems or minor problems that do not affect data usability.
X = No more than *about* 5% of the data points are qualified as either estimated or unusable.
M = More than *about* 5% of the data points are qualified as estimated.
Z = More than *about* 5% of the data points are qualified as unusable.

DPO ACTION ITEMS: _____

AREAS OF CONCERN: _____

00068

489

Attachment 3

REJECTION SUMMARY FORM
(No. of Compounds/No. of Fractions (Samples))

SOP NO: HW-6
Date: February 1989

Type of Review: EPA CLP/REGION II VALIDATION Date: 8-29-91

Project: COLTSNECK NAVAL WEAPONS STATION Case #: 91036829

Reviewer's Initials: EMM Lab Name: Lt WESTON LIONVILLE

Number of Samples: 9

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)								
B/N (50)						1	9	1 /135
VOA (35)				12		EMM 9-4-91	9	12/450
PEST (20)								
PCB (7)								
TCDD (1)								

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)								
B/N (50)			7			15	9	15 /135
VOA (35)						57	9	64 /450
PEST (20)								
PCB (7)								
TCDD (1)								

000069