



# HEARTLAND ENVIRONMENTAL SERVICES, INC.

P.O. BOX 163 ST. PETERS MO 63376  
(314) 278-8232

## REGION II SVOA DATA VALIDATION

NAVAL WEAPONS STATION - COLTSNECK

ROY F. WESTON CASE 9103L042

<u>Coltsneck ID</u>	<u>R.F. Weston ID</u>	<u>Coltsneck ID</u>	<u>R.F. Weston ID</u>
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Water Samples (all)

07-001-M001	9103L042-001	07-002-M001	9103L042-002
07-002-M101	9103L042-003	07-002-M201	9103L042-004
07-003-M001	9103L042-005	07-003-M001MS	9103L042-005MS
07-003-M001MSD	9103L042-005MSD	07-004-M001	9103L042-006
07-005-M001	9103L042-007	05-001-M001	9103L042-008
05-002-M001	9103L042-009	05-003-M001	9103L042-010
05-004-M001	9103L042-011	05-004-M101	9103L042-012
05-004-M201	9103L042-013	05-005-M001	9103L042-014
05-006-M001	9103L042-015	05-007-M001	9103L042-016
05-008-M001	9103L042-017	05-008-M001MS	9103L042-017MS
05-008-M001MSD	9103L042-017MSD		

PREPARED BY:

Eugene M. Watson

DATE:

7-18-91

VERIFIED BY:

Paul B. Humburg

DATE:

7/18/91



## 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 were met per the 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.

The two method blanks that were extracted and analyzed did not exhibit any contamination. No qualifications are needed.

### 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.

In addition, the form 7s contained transcription errors for three (3) of the surrogate compounds, which resulted in incorrect %Ds. Heartland ESI contacted the laboratory and had them resubmit new form 7s that reflected the correct %Ds.



DATA ASSESSMENT AND NARRATIVE

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Calibrations - %RSDs and %Ds (continued)

Specific findings:

1. The initial calibration on 04/03/91 on instrument GCL#4 contained the following compounds above 30%RSD. Samples were not analyzed so qualifications are not necessary.
  - a) indeno(1,2,3-c,d)pyrene
  - b) benzo(g,h,i)perylene
2. The continuing calibration on 04/04/91 contained the following compounds above 25% D. Samples were not analyzed so qualifications are not necessary.
  - a) hexachlorocyclopentadiene
  - b) 2,4-dinitrophenol
  - c) 4,6-dinitro-2-methylphenol
3. For samples 07-001-M001, 07-002-M001, 07-002-M101, 07-002-M201, 07-003-M001, 07-003-M001MS, 07-003-M001MSD, and 07-004-M001, the continuing calibration on 04/05/91 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
  - a) indeno(1,2,3-c,d)pyrene
  - b) benzo(g,h,i)perylene
4. For samples 07-001-M001, 07-002-M001, 07-002-M101, 07-002-M201, 07-003-M001, 07-003-M001MS, 07-003-M001MSD, and 07-004-M001, the continuing calibration on 04/05/91 contained the following compounds above 50% D, but less than 90% D. Qualify all positive result for these compounds as estimated (J) and all non detect results as estimated (UJ).
  - a) 2,4-dinitrophenol
5. For samples 05-005-M001, 05-008,-M001, 05-008-M001MS, 05-008-M001MSD, 07-005-M001, 05-001-M001, 05-002-M001, 05-003-M001, 05-004-M001, 05-004-M101, and 05-004-M201, the continuing calibration on 04/05/91 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
  - a) indeno(1,2,3-c,d)pyrene
  - b) benzo(g,h,i)perylene
  - c) 2,4-dinitrophenol
  - d) dibenzo(a,h)anthracene



DATA ASSESSMENT AND NARRATIVE

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Calibrations - %RSDs and %Ds (continued)

6. For samples 05-006-M001 and 05-007-M001, the continuing calibration on 04/06/91 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
  - a) 2,4,6-tribromophenol (surrogate)
  - b) benzo(g,h,i)perylene
  - c) 2,4-dinitrophenol
  - d) dibenzo(a,h)anthracene

\* The data will not be qualified for the surrogate, 2,4,6-tribromophenol. All of the surrogate recoveries for the associated samples were within QA/QC limits.

Surrogates

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

Internal Standards

All of the EICP internal standard areas for the samples were within QA/QC limits.

Compound Identification/Quantitation

All of the spectra submitted by the laboratory met the Region II guidelines. The laboratory did a good job on producing the data for the samples. However, two (2) TICs were reported that were VOA TCL compounds.

Specific Findings:

7. For sample 07-005-M001, TIC #1, trichloroethene is rejected since it is a VOA TCL.
8. For sample 05-007-M001, TIC #3, tetrachloroethene is rejected since it is a VOA TCL.

Matrix Spike/Matrix Spike Duplicate

The MS/MSD exhibited acceptable recoveries and %RPDs.

System Performance and Overall Assessment

The overall performance of the GC/MS system was acceptable. The quality of the data package was very good. Heartland ESI estimates that there is little impact on the data package due to qualifications.



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.



SUMMARY OF DATA QUALIFICATIONS

<u>SAMPLE ID</u>	<u>ANALYTE ID</u>	<u>DL</u>	<u>QL</u>	<u>SPECIFIC FINDINGS</u>
07-001-M001, 07-002-M001 07-002-M101, 07-002-M201 07-003-M001, 07-003-M001MS, 07-003-M001MSD, 07-004-M001	indeno (1,2,3-c,d)pyrene benzo(g,h,i)perylene	+	J	3
07-001-M001, 07-002-M001 07-002-M101, 07-002-M201 07-003-M001, 07-003-M001MS, 07-003-M001MSD, 07-004-M001	2,4-dinitro- phenol	+/-	J/UJ	4
05-005-M001, 05-008-M001 05-008-M001MS, 05-008-M001MSD, 07-005-M001, 05-001-M001 05-002-M001, 05-003-M001 05-004-M001, 05-004-M101 05-004-M201	indeno (1,2,3-cd)pyrene benzo(g,h,i)perylene 2,4-dinitrophenol dibenzo(a,h)anthracene	+	J	5
05-006-M001, 05-007-M001	benzo(g,h,i) perylene 2,4-dinitrophenol dibenzo(a,h)anthracene	+	J	6
07-005-M001	trichloro- ethene	TIC	R	7
05-007-M001	tetrachloro- ethene	TIC	R	8

\* 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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-001

Sample wt/vol: 980 (g/mL) ML Lab File ID: DBAS56

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
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	51	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	51	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	51	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

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1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-001

Sample wt/vol: 980 (g/mL) ML Lab File ID: DBAS56

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.      dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	51	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	51	U J 4
100-02-7	4-Nitrophenol	51	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	51	U
534-52-1	4,6-Dinitro-2-methylphenol	51	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	51	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

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

07-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-001

Sample wt/vol: 980 (g/mL) ML Lab File ID: DBAS56

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 2 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	35.27	6	JNS
2.	UNKNWON. HYDROCARBON	36.43	6	JNS

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-002

Sample wt/vol: 920 (g/mL) ML Lab File ID: DBAS57

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	11	U
111-44-4-----	bis(2-Chloroethyl)ether	11	U
95-57-8-----	2-Chlorophenol	11	U
541-73-1-----	1,3-Dichlorobenzene	11	U
106-46-7-----	1,4-Dichlorobenzene	11	U
100-51-6-----	Benzyl alcohol	11	U
95-50-1-----	1,2-Dichlorobenzene	11	U
95-48-7-----	2-Methylphenol	11	U
108-60-1-----	bis(2-Chloroisopropyl)ether	11	U
106-44-5-----	4-Methylphenol	11	U
621-64-7-----	N-Nitroso-Di-n-propylamine	11	U
67-72-1-----	Hexachloroethane	11	U
98-95-3-----	Nitrobenzene	11	U
78-59-1-----	Isophorone	11	U
88-75-5-----	2-Nitrophenol	11	U
105-67-9-----	2,4-Dimethylphenol	11	U
65-85-0-----	Benzoic acid	3	J
111-91-1-----	bis(2-Chloroethoxy)methane	11	U
120-83-2-----	2,4-Dichlorophenol	11	U
120-82-1-----	1,2,4-Trichlorobenzene	11	U
91-20-3-----	Naphthalene	11	U
106-47-8-----	4-Chloroaniline	11	U
87-68-3-----	Hexachlorobutadiene	11	U
59-50-7-----	4-Chloro-3-methylphenol	11	U
91-57-6-----	2-Methylnaphthalene	11	U
77-47-4-----	Hexachlorocyclopentadiene	11	U
88-06-2-----	2,4,6-Trichlorophenol	11	U
95-95-4-----	2,4,5-Trichlorophenol	54	U
91-58-7-----	2-Chloronaphthalene	11	U
88-74-4-----	2-Nitroaniline	54	U
131-11-3-----	Dimethylphthalate	11	U
208-96-8-----	Acenaphthylene	11	U
606-20-2-----	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-002

Sample wt/vol: 920 (g/mL) ML Lab File ID: DBAS57

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	54	U
83-32-9-----	Acenaphthene	11	U
51-28-5-----	2,4-Dinitrophenol	54	U J 4
100-02-7-----	4-Nitrophenol	54	U
132-64-9-----	Dibenzofuran	11	U
121-14-2-----	2,4-Dinitrotoluene	11	U
84-66-2-----	Diethylphthalate	11	U
7005-72-3-----	4-Chlorophenyl-phenylether	11	U
86-73-7-----	Fluorene	11	U
100-01-6-----	4-Nitroaniline	54	U
534-52-1-----	4,6-Dinitro-2-methylphenol	54	U
86-30-6-----	N-Nitrosodiphenylamine (1)	11	U
101-55-3-----	4-Bromophenyl-phenylether	11	U
118-74-1-----	Hexachlorobenzene	11	U
87-86-5-----	Pentachlorophenol	54	U
85-01-8-----	Phenanthrene	11	U
120-12-7-----	Anthracene	11	U
84-74-2-----	Di-n-Butylphthalate	11	U
206-44-0-----	Fluoranthene	11	U
129-00-0-----	Pyrene	11	U
85-68-7-----	Butylbenzylphthalate	11	U
91-94-1-----	3,3'-Dichlorobenzidine	22	U
56-55-3-----	Benzo(a)anthracene	11	U
218-01-9-----	Chrysene	11	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	11	U
117-84-0-----	Di-n-Octyl phthalate	11	U
205-99-2-----	Benzo(b)fluoranthene	11	U
207-08-9-----	Benzo(k)fluoranthene	11	U
50-32-8-----	Benzo(a)pyrene	11	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	11	U
53-70-3-----	Dibenzo(a,h)anthracene	11	U
191-24-2-----	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

63

00011

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

07-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-002

Sample wt/vol: 920 (g/mL) ML Lab File ID: DBAS57

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 6 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	28.51	7	J <u>NE</u>
2.	UNKNOWN	31.61	5	J
3.	UNKNOWN	34.43	10	J
4.	UNKNOWN HYDROCARBON	36.42	5	J
5.	UNKNOWN	37.60	10	J
6.	UNKNOWN HYDROCARBON	37.74	8	J ↓

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-002-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-003

Sample wt/vol: 980 (g/mL) ML Lab File ID: DBAS58

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	10	U
111-44-4-----	bis(2-Chloroethyl)ether	10	U
95-57-8-----	2-Chlorophenol	10	U
541-73-1-----	1,3-Dichlorobenzene	10	U
106-46-7-----	1,4-Dichlorobenzene	10	U
100-51-6-----	Benzyl alcohol	10	U
95-50-1-----	1,2-Dichlorobenzene	10	U
95-48-7-----	2-Methylphenol	10	U
108-60-1-----	bis(2-Chloroisopropyl)ether	10	U
106-44-5-----	4-Methylphenol	10	U
621-64-7-----	N-Nitroso-Di-n-propylamine	10	U
67-72-1-----	Hexachloroethane	10	U
98-95-3-----	Nitrobenzene	10	U
78-59-1-----	Isophorone	10	U
88-75-5-----	2-Nitrophenol	10	U
105-67-9-----	2,4-Dimethylphenol	10	U
65-85-0-----	Benzoic acid	51	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	51	U
91-58-7-----	2-Chloronaphthalene	10	U
88-74-4-----	2-Nitroaniline	51	U
131-11-3-----	Dimethylphthalate	10	U
208-96-8-----	Acenaphthylene	10	U
606-20-2-----	2,6-Dinitrotoluene	10	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-002-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-003

Sample wt/vol: 980 (g/mL) ML Lab File ID: DBAS58

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec.        Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	51	U
83-32-9-----	Acenaphthene	10	U
51-28-5-----	2,4-Dinitrophenol	51	U J
100-02-7-----	4-Nitrophenol	51	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	51	U
534-52-1-----	4,6-Dinitro-2-methylphenol	51	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	51	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.

00774

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

07-002-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-003

Sample wt/vol: 980 (g/mL) ML Lab File ID: DBAS58

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

Number TICs found: 10

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 108907	CHLOROBENZENE	6.51	5	J <i>NS</i>
2.	UNKNOWN	28.49	10	J
3.	UNKNOWN	31.60	5	J
4.	SUB. AMIDE	31.68	4	J
5.	UNKNOWN HYDROCARBON	34.22	5	J
6.	UNKNOWN	34.42	10	J
7.	UNKNOWN HYDROCARBON	35.27	5	J
8.	UNKNOWN HYDROCARBON	36.43	8	J
9.	UNKNOWN	37.59	10	J
10.	UNKNOWN HYDROCARBON	37.75	9	J ↓

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-002-M201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-004

Sample wt/vol: 930 (g/mL) ML Lab File ID: DBAS59

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	bis(2-Chloroisopropyl)ether	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic acid	54	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	54	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	54	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

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

07-002-M201

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-004  
 Sample wt/vol: 930 (g/mL) ML Lab File ID: DBAS59  
 Level: (low/med) LOW Date Received: 03/23/91  
 % Moisture: not dec.        dec. Date Extracted: 03/25/91  
 Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91  
 GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	54	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	54	U <i>J</i>
100-02-7	4-Nitrophenol	54	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	54	U
534-52-1	4,6-Dinitro-2-methylphenol	54	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	54	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	22	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-Octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

07-002-M201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-004

Sample wt/vol: 930 (g/mL) ML Lab File ID: DBAS59

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.      dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-003-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-005

Sample wt/vol: 920 (g/mL) ML Lab File ID: DBAS60

Level: (low/med): LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	bis(2-Chloroisopropyl)ether	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic acid	54	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	54	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	54	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U



1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

07-003-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-005

Sample wt/vol: 920 (g/mL) ML Lab File ID: DBAS60

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 1 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	34.04	10	<i>JNS</i>

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-004-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-006

Sample wt/vol: 960 (g/mL) ML Lab File ID: DBAS63

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	52	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	52	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	52	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

108

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-004-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-006

Sample wt/vol: 960 (g/mL) ML Lab File ID: DBAS63

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. \_\_\_\_\_ dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	52	U
83-32-9-----	Acenaphthene	10	U
51-28-5-----	2,4-Dinitrophenol	52	U
100-02-7-----	4-Nitrophenol	52	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	52	U
534-52-1-----	4,6-Dinitro-2-methylphenol	52	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	52	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	21	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

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

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

07-004-M001

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-006

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

Lab File ID: DBAS63

Level: (low/med) LOW

Date Received: 03/23/91

% Moisture: not dec.        dec.

Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	34.04	6	JNS

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-005-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-007

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS69

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) <u>ug/L</u>	
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	2	J
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	1	J
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

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-005-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-007

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS69

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

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

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

07-005-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-007

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

Lab File ID: DBAS69

Level: (low/med) LOW

Date Received: 03/23/91

% Moisture: not dec.        dec.

Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 3 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	<del>TRICHLOROETHANE</del>	4.65	8	<del>JNF</del>
2.	UNKNOWN	11.61	10	JNJ
3.	UNKNOWN	11.82	10	J ↓

R7

00027

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-008

Sample wt/vol: 970 (g/mL) ML Lab File ID: DBAS70

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	10	U
111-44-4-----	bis(2-Chloroethyl)ether	10	U
95-57-8-----	2-Chlorophenol	10	U
541-73-1-----	1,3-Dichlorobenzene	10	U
106-46-7-----	1,4-Dichlorobenzene	10	U
100-51-6-----	Benzyl alcohol	10	U
95-50-1-----	1,2-Dichlorobenzene	10	U
95-48-7-----	2-Methylphenol	10	U
108-60-1-----	bis(2-Chloroisopropyl)ether	10	U
106-44-5-----	4-Methylphenol	10	U
621-64-7-----	N-Nitroso-Di-n-propylamine	10	U
67-72-1-----	Hexachloroethane	10	U
98-95-3-----	Nitrobenzene	10	U
78-59-1-----	Isophorone	10	U
88-75-5-----	2-Nitrophenol	10	U
105-67-9-----	2,4-Dimethylphenol	10	U
65-85-0-----	Benzoic acid	52	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	52	U
91-58-7-----	2-Chloronaphthalene	10	U
88-74-4-----	2-Nitroaniline	52	U
131-11-3-----	Dimethylphthalate	10	U
208-96-8-----	Acenaphthylene	10	U
606-20-2-----	2,6-Dinitrotoluene	10	U

IC  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-008

Sample wt/vol: 970 (g/mL) ML Lab File ID: DBAS70

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	52	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	52	U
100-02-7	4-Nitrophenol	52	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	52	U
534-52-1	4,6-Dinitro-2-methylphenol	52	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	52	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	21	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

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

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

05-001-M001

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-008

Sample wt/vol: 970 (g/mL) ML

Lab File ID: DBAS70

Level: (low/med). LOW

Date Received: 03/23/91

% Moisture: not dec. \_\_\_\_\_ dec.

Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-009

Sample wt/vol: 790 (g/mL) ML Lab File ID: DBAS71

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	13	U
111-44-4-----	bis(2-Chloroethyl)ether	13	U
95-57-8-----	2-Chlorophenol	13	U
541-73-1-----	1,3-Dichlorobenzene	13	U
106-46-7-----	1,4-Dichlorobenzene	13	U
100-51-6-----	Benzyl alcohol	13	U
95-50-1-----	1,2-Dichlorobenzene	13	U
95-48-7-----	2-Methylphenol	13	U
108-60-1-----	bis(2-Chloroisopropyl)ether	13	U
106-44-5-----	4-Methylphenol	13	U
621-64-7-----	N-Nitroso-Di-n-propylamine	13	U
67-72-1-----	Hexachloroethane	13	U
98-95-3-----	Nitrobenzene	13	U
78-59-1-----	Isophorone	13	U
88-75-5-----	2-Nitrophenol	13	U
105-67-9-----	2,4-Dimethylphenol	13	U
65-85-0-----	Benzoic acid	64	U
111-91-1-----	bis(2-Chloroethoxy)methane	13	U
120-83-2-----	2,4-Dichlorophenol	13	U
120-82-1-----	1,2,4-Trichlorobenzene	13	U
91-20-3-----	Naphthalene	13	U
106-47-8-----	4-Chloroaniline	13	U
87-68-3-----	Hexachlorobutadiene	13	U
59-50-7-----	4-Chloro-3-methylphenol	13	U
91-57-6-----	2-Methylnaphthalene	13	U
77-47-4-----	Hexachlorocyclopentadiene	13	U
88-06-2-----	2,4,6-Trichlorophenol	13	U
95-95-4-----	2,4,5-Trichlorophenol	64	U
91-58-7-----	2-Chloronaphthalene	13	U
88-74-4-----	2-Nitroaniline	64	U
131-11-3-----	Dimethylphthalate	13	U
208-96-8-----	Acenaphthylene	13	U
606-20-2-----	2,6-Dinitrotoluene	13	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-009

Sample wt/vol: 790 (g/mL) ML Lab File ID: DBAS71

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	64	U
83-32-9	Acenaphthene	13	U
51-28-5	2,4-Dinitrophenol	64	U
100-02-7	4-Nitrophenol	64	U
132-64-9	Dibenzofuran	13	U
121-14-2	2,4-Dinitrotoluene	13	U
84-66-2	Diethylphthalate	13	U
7005-72-3	4-Chlorophenyl-phenylether	13	U
86-73-7	Fluorene	13	U
100-01-6	4-Nitroaniline	64	U
534-52-1	4,6-Dinitro-2-methylphenol	64	U
86-30-6	N-Nitrosodiphenylamine (1)	13	U
101-55-3	4-Bromophenyl-phenylether	13	U
118-74-1	Hexachlorobenzene	13	U
87-86-5	Pentachlorophenol	64	U
85-01-8	Phenanthrene	13	U
120-12-7	Anthracene	13	U
84-74-2	Di-n-Butylphthalate	13	U
206-44-0	Fluoranthene	13	U
129-00-0	Pyrene	13	U
85-68-7	Butylbenzylphthalate	13	U
91-94-1	3,3'-Dichlorobenzidine	25	U
56-55-3	Benzo(a)anthracene	13	U
218-01-9	Chrysene	13	U
117-81-7	bis(2-Ethylhexyl)phthalate	13	U
117-84-0	Di-n-Octyl phthalate	13	U
205-99-2	Benzo(b)fluoranthene	13	U
207-08-9	Benzo(k)fluoranthene	13	U
50-32-8	Benzo(a)pyrene	13	U
193-39-5	Indeno(1,2,3-cd)pyrene	13	U
53-70-3	Dibenzo(a,h)anthracene	13	U
191-24-2	Benzo(g,h,i)perylene	13	U

(1) - Cannot be separated from Diphenylamine

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-002-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-009

Sample wt/vol: 790 (g/mL) ML

Lab File ID: DBAS71

Level: (low/med) LOW

Date Received: 03/23/91

% Moisture: not dec.        dec.

Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-003-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-010

Sample wt/vol: 950 (g/mL) ML Lab File ID: DBAS72

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	10	U
111-44-4-----	bis(2-Chloroethyl)ether	10	U
95-57-8-----	2-Chlorophenol	10	U
541-73-1-----	1,3-Dichlorobenzene	10	U
106-46-7-----	1,4-Dichlorobenzene	10	U
100-51-6-----	Benzyl alcohol	10	U
95-50-1-----	1,2-Dichlorobenzene	10	U
95-48-7-----	2-Methylphenol	10	U
108-60-1-----	bis(2-Chloroisopropyl)ether	10	U
106-44-5-----	4-Methylphenol	10	U
621-64-7-----	N-Nitroso-Di-n-propylamine	10	U
67-72-1-----	Hexachloroethane	10	U
98-95-3-----	Nitrobenzene	10	U
78-59-1-----	Isophorone	10	U
88-75-5-----	2-Nitrophenol	10	U
105-67-9-----	2,4-Dimethylphenol	10	U
65-85-0-----	Benzoic acid	52	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	52	U
91-58-7-----	2-Chloronaphthalene	10	U
88-74-4-----	2-Nitroaniline	52	U
131-11-3-----	Dimethylphthalate	10	U
208-96-8-----	Acenaphthylene	10	U
606-20-2-----	2,6-Dinitrotoluene	10	U

00034

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-003-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-010

Sample wt/vol: 950 (g/mL) ML

Lab File ID: DBAS72

Level: (low/med) LOW

Date Received: 03/23/91

% Moisture: not dec.        dec.

Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	52	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	52	U
100-02-7	4-Nitrophenol	52	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	52	U
534-52-1	4,6-Dinitro-2-methylphenol	52	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	52	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	21	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

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-003-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-010

Sample wt/vol: 950 (g/mL) ML

Lab File ID: DBAS72

Level: (low/med) LOW

Date Received: 03/23/91

% Moisture: not dec.        dec.

Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

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

05-004-M001

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-011

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS73

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 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

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-004-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-011

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS73

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

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

00038

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev. 150

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-004-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-011

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS73

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	28.50	5	JNT
2.	UNKNOWN HYDROCARBON	36.43	5	JNT

00039

18  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-004-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-012

Sample wt/vol: 1000 (g/mL) ML Lab File ID: DBAS74

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.      dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

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

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-004-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-012

Sample wt/vol: 1000 (g/mL) ML Lab File ID: DBAS74

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 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. 159

00041

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-004-M101

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-012

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

Lab File ID: DBAS74

Level: (low/med) LOW

Date Received: 03/23/91

% Moisture: not dec.        dec.

Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

160  
00042

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-004-M201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-013

Sample wt/vol: 920 (g/mL) ML Lab File ID: DBAS75

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.      dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	11	U
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	UU
95-57-8	2-Chlorophenol	11	UU
541-73-1	1,3-Dichlorobenzene	11	UU
106-46-7	1,4-Dichlorobenzene	11	UU
100-51-6	Benzyl alcohol	11	UU
95-50-1	1,2-Dichlorobenzene	11	UU
95-48-7	2-Methylphenol	11	UU
108-60-1	bis(2-Chloroisopropyl)ether	11	UU
106-44-5	4-Methylphenol	11	UU
621-64-7	N-Nitroso-Di-n-propylamine	11	UU
67-72-1	Hexachloroethane	11	UU
98-95-3	Nitrobenzene	11	UU
78-59-1	Isophorone	11	UU
88-75-5	2-Nitrophenol	11	UU
105-67-9	2,4-Dimethylphenol	11	UU
65-85-0	Benzoic acid	54	UU
111-91-1	bis(2-Chloroethoxy)methane	11	UU
120-83-2	2,4-Dichlorophenol	11	UU
120-82-1	1,2,4-Trichlorobenzene	11	UU
91-20-3	Naphthalene	11	UU
106-47-8	4-Chloroaniline	11	UU
87-68-3	Hexachlorobutadiene	11	UU
59-50-7	4-Chloro-3-methylphenol	11	UU
91-57-6	2-Methylnaphthalene	11	UU
77-47-4	Hexachlorocyclopentadiene	11	UU
88-06-2	2,4,6-Trichlorophenol	11	UU
95-95-4	2,4,5-Trichlorophenol	54	UU
91-58-7	2-Chloronaphthalene	11	UU
88-74-4	2-Nitroaniline	54	UU
131-11-3	Dimethylphthalate	11	UU
208-96-8	Acenaphthylene	11	UU
606-20-2	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-004-M201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-013

Sample wt/vol: 920 (g/mL) ML Lab File ID: DBAS75

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	54	U
83-32-9-----	Acenaphthene	11	U
51-28-5-----	2,4-Dinitrophenol	54	U
100-02-7-----	4-Nitrophenol	54	U
132-64-9-----	Dibenzofuran	11	U
121-14-2-----	2,4-Dinitrotoluene	11	U
84-66-2-----	Diethylphthalate	11	U
7005-72-3-----	4-Chlorophenyl-phenylether	11	U
86-73-7-----	Fluorene	11	U
100-01-6-----	4-Nitroaniline	54	U
534-52-1-----	4,6-Dinitro-2-methylphenol	54	U
86-30-6-----	N-Nitrosodiphenylamine (1)	11	U
101-55-3-----	4-Bromophenyl-phenylether	11	U
118-74-1-----	Hexachlorobenzene	11	U
87-86-5-----	Pentachlorophenol	54	U
85-01-8-----	Phenanthrene	11	U
120-12-7-----	Anthracene	11	U
84-74-2-----	Di-n-Butylphthalate	11	U
206-44-0-----	Fluoranthene	11	U
129-00-0-----	Pyrene	11	U
85-68-7-----	Butylbenzylphthalate	11	U
91-94-1-----	3,3'-Dichlorobenzidine	22	U
56-55-3-----	Benzo(a)anthracene	11	U
218-01-9-----	Chrysene	11	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	11	U
117-84-0-----	Di-n-Octyl phthalate	11	U
205-99-2-----	Benzo(b)fluoranthene	11	U
207-08-9-----	Benzo(k)fluoranthene	11	U
50-32-8-----	Benzo(a)pyrene	11	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	11	U
53-70-3-----	Dibenzo(a,h)anthracene	11	U
191-24-2-----	Benzo(g,h,i)perylene	11	U

00044

(1) - Cannot be separated from Diphenylamine

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-004-M201

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-013

Sample wt/vol: 920 (g/mL) ML

Lab File ID: DBAS75

Level: (low/med) LOW

Date Received: 03/23/91

% Moisture: not dec.        dec.

Date Extracted: 03/25/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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



1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-005-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-014

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS65

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

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. 173

00047

IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-005-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-014

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS65

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 2 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.61	10	<u>JNI</u>
2.	UNKNOWN	11.81	6	<u>JNI</u>

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-015

Sample wt/vol: 820 (g/mL) ML Lab File ID: DBAS79

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

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	61	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	2	J
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	61	U
91-58-7	2-Chloronaphthalene	12	U
88-74-4	2-Nitroaniline	61	U
131-11-3	Dimethylphthalate	12	U
208-96-8	Acenaphthylene	12	U
606-20-2	2,6-Dinitrotoluene	12	U

183

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-015

Sample wt/vol: 820 (g/mL) ML Lab File ID: DBAS79

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2	3-Nitroaniline	61	U
83-32-9	Acenaphthene	12	U
51-28-5	2,4-Dinitrophenol	61	U
100-02-7	4-Nitrophenol	61	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	61	U
534-52-1	4,6-Dinitro-2-methylphenol	61	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	61	U
85-01-8	Phenanthrene	12	U
120-12-7	Anthracene	12	U
84-74-2	Di-n-Butylphthalate	1	J
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	4	J
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. 184  
00050

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-006-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L042-015

Sample wt/vol: 820 (g/mL) ML

Lab File ID: DBAS79

Level: (low/med) LOW

Date Received: 03/23/91

% Moisture: not dec.        dec.

Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	TRIMETHYL BICYCLO HEPTAN ONE	12.69	10	J <i>NG</i>
2.	UNKNOWN	13.81	8	J
3.	TRIMETHYL BICYCLO HEPTAN ONE	13.97	60	J
4.	UNKNOWN	15.27	20	J
5.	UNKNOWN	15.45	10	J
6.	UNKNOWN	17.12	7	J
7.	UNKNOWN	18.40	7	J
8.	UNKNOWN	20.15	7	J
9.	UNKNOWN	22.81	30	J
10. 934349	2(3H)-BENZOTHAZOLONE	23.23	10	J
11.	UNKNOWN	24.53	30	J
12.	UNKNOWN	24.84	7	J
13.	UNKNOWN	28.49	8	J
14.	UNKNOWN HYDROCARBON	32.21	8	J
15.	UNKNWON HYDROCARBON	33.24	8	J
16.	UNKNOWN HYDROCARBON	34.24	8	J
17.	UNKNOWN HYDROCARBON	35.30	6	J
18.	UNKNOWN	36.37	10	J
19.	UNKNOWN HYDROCARBON	36.45	9	J
20.	UNKNOWN HYDROCARBON	37.78	6	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-007-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-016

Sample wt/vol: 890 (g/mL) ML Lab File ID: DBAS80

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	11	U
111-44-4-----	bis(2-Chloroethyl)ether	11	U
95-57-8-----	2-Chlorophenol	11	U
541-73-1-----	1,3-Dichlorobenzene	11	U
106-46-7-----	1,4-Dichlorobenzene	11	U
100-51-6-----	Benzyl alcohol	11	U
95-50-1-----	1,2-Dichlorobenzene	11	U
95-48-7-----	2-Methylphenol	11	U
108-60-1-----	bis(2-Chloroisopropyl)ether	11	U
106-44-5-----	4-Methylphenol	11	U
621-64-7-----	N-Nitroso-Di-n-propylamine	11	U
67-72-1-----	Hexachloroethane	11	U
98-95-3-----	Nitrobenzene	11	U
78-59-1-----	Isophorone	11	U
88-75-5-----	2-Nitrophenol	11	U
105-67-9-----	2,4-Dimethylphenol	11	U
65-85-0-----	Benzoic acid	56	U
111-91-1-----	bis(2-Chloroethoxy)methane	11	U
120-83-2-----	2,4-Dichlorophenol	11	U
120-82-1-----	1,2,4-Trichlorobenzene	11	U
91-20-3-----	Naphthalene	11	U
106-47-8-----	4-Chloroaniline	11	U
87-68-3-----	Hexachlorobutadiene	11	U
59-50-7-----	4-Chloro-3-methylphenol	11	U
91-57-6-----	2-Methylnaphthalene	11	U
77-47-4-----	Hexachlorocyclopentadiene	11	U
88-06-2-----	2,4,6-Trichlorophenol	11	U
95-95-4-----	2,4,5-Trichlorophenol	56	U
91-58-7-----	2-Chloronaphthalene	11	U
88-74-4-----	2-Nitroaniline	56	U
131-11-3-----	Dimethylphthalate	11	U
208-96-8-----	Acenaphthylene	11	U
606-20-2-----	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-007-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-016

Sample wt/vol: 890 (g/mL) ML Lab File ID: DBAS80

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	56	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	56	U
100-02-7	4-Nitrophenol	56	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	56	U
534-52-1	4,6-Dinitro-2-methylphenol	56	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	56	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	22	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	J
117-84-0	Di-n-Octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-007-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-016

Sample wt/vol: 890 (g/mL) ML Lab File ID: DBAS80

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) N pH: 6.0 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	6.01	20	J
2.	UNKNOWN	6.92	8	J
<del>3. 79345</del>	<del>TETRACHLOROETHANE</del>	<del>8.37</del>	<del>9</del>	<del>J</del>
4.	UNKNOWN	9.10	6	J
5.	UNKNOWN	10.51	10	J
6.	UNKNOWN	10.64	20	J
7.	UNKNOWN	11.29	8	J
8.	UNKNOWN	11.61	60	J
9.	UNKNOWN	11.83	40	J
10.	UNKNOWN	22.80	6	J
11.	UNKNOWN	31.80	20	J



1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-008-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-017

Sample wt/vol: 980 (g/mL) ML Lab File ID: DBAS66

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	51	U
83-32-9-----	Acenaphthene	10	U
51-28-5-----	2,4-Dinitrophenol	51	U
100-02-7-----	4-Nitrophenol	51	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	51	U
534-52-1-----	4,6-Dinitro-2-methylphenol	51	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	51	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	2	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  
FORM 1 SV-2

12/88 Rev. 234

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1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-008-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L042-017

Sample wt/vol: 980 (g/mL) ML Lab File ID: DBAS66

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec.        dec. Date Extracted: 03/26/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

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

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PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 9103L042  
 LAB: R.F. WESTON GULF COAST  
 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 SMD OCS 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 ENA analyses and Part C for Pesticide/PCBs.

Does this package contain:

VOA data?

ENA data?

Pesticide/PCB data?

ACTION: Complete corresponding parts of checklist.

PART B: EVA ANALYSES

YES NO N/A

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 EVA holding times, determined from date of collection to date of extraction, been exceeded?

Samples for EVA 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 Analyzed
			Date Lab Received	Date Extracted	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

*Summ*  
*7-16-91*

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("U"), 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").

3.0 Surrogate Recovery (Form II)

3.1 Are the BVA Surrogate Recovery Summaries (Form II) present for each of the following matrices:

- a. Low Water
- b. Med Water
- c. Low Soil
- d. Med Soil

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.2 Are all the BVA 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

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	-------------------------------------

If yes, were samples reanalyzed?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	-------------------------------------

Were method blanks reanalyzed?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	-------------------------------------

ACTION: If all BVA 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 ("W").

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".

4.0 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
- 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 EPA spike recoveries are outside QC limits?

0 Water out of 22      N/A Soils out of 22

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

0 Water out of 11      N/A Soils 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.

5.0 Blanks (Form IV)

YES NO N/A

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 <sup>Method</sup> ~~instrument~~ 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 VOCs?

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 or  
 Submitted*

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 or submitted*

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.

			YES	NO	N/A
DATE	TIME	INSTRUMENT			
		<i>Small</i>			
		<i>7-16-91</i>			

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

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.

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".

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

8.1 Are the Organic Analysis Data Sheets (Form I BVA) 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 EPA 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	<input checked="" type="checkbox"/>	—	—
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	<input checked="" type="checkbox"/>	—	—
c. Blanks	<input checked="" type="checkbox"/>	—	—
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	—
8.4 Is chromatographic performance acceptable with respect to:			
Baseline stability	<input checked="" type="checkbox"/>	—	—
Resolution	<input checked="" type="checkbox"/>	—	—
Peak shape	<input checked="" type="checkbox"/>	—	—
Full-scale graph (attenuation)	<input checked="" type="checkbox"/>	—	—
Other: _____	<input type="checkbox"/>	—	<input checked="" type="checkbox"/>
ACTION: Use professional judgement to determine the acceptability of the data.			
8.5 Are the lab-generated standard mass spectra of the identified EPA compounds present for each sample?	<input checked="" type="checkbox"/>	—	—
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?	<input checked="" type="checkbox"/>	—	—
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?	<input checked="" type="checkbox"/>	—	—
8.8 Do sample and standard relative ion intensities agree within 20%?	<input checked="" type="checkbox"/>	—	—
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).			

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	YES	NO	N/A
<u>9.0 Tentatively Identified Compounds (TIC)</u>			
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?	<input checked="" type="checkbox"/>	—	—
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	<input checked="" type="checkbox"/>	—	—
b. Blanks	<input checked="" type="checkbox"/>	—	—
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 <u>identified</u> 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)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	—	—
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	<input checked="" type="checkbox"/>	—	—
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.			
<u>10.0 Compound Quantitation and Reported Detection Limits</u>			
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?	—	<input checked="" type="checkbox"/>	—
10.2 Are the CRQIs adjusted to reflect sample dilutions and, for soils, sample moisture?	<input checked="" type="checkbox"/>	—	—

*SNW*  
*7-15-91*

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 BVA fraction?

— —

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Are response factors stable for BVAs 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 BVA 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").

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.)

YES	NO	N/A
—	<input checked="" type="checkbox"/>	—

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)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BNA fraction?

<input checked="" type="checkbox"/>	—	—
-------------------------------------	---	---

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?

<input checked="" type="checkbox"/>	—	—
-------------------------------------	---	---

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

*Emm*  
*7-17 91*

---



---



---

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").

13.3 Do any continuing calibration standard compounds have a RRF < 0.05?

—	<input checked="" type="checkbox"/>	—
---	-------------------------------------	---

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").

13.4 Do any compounds have a % difference between initial and continuing calibration RRF > 25%?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	—
-------------------------------------	--------------------------	---

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

% DIFFERENCE			YES	NO	N/A
25-50	50-90	>90			
'J' positive results, no action for non detects	'J' positive results, 'U' non detects	'J' positive results, "R" non detects		<input checked="" type="checkbox"/>	

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".

10 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

*Handwritten notes: 7-17-91*

(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.

15.0 Field Duplicates

YES NO N/A

15.1 Were any field duplicates submitted for BVA analysis?

YES  NO

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

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.

*Not identified or submitted.*

TOTAL REVIEW

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

Case No. 9103042 SDG No. — LABORATORY Gulf SITE COLTSNECK  
COAST

DATA ASSESSMENT:

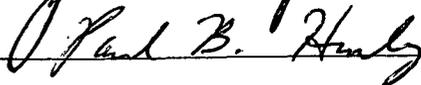
The current functional guidelines for evaluating organic data have been applied.

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:

 Date: 7/16/1991

Verified By:

 Date: 7/18/1991

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*  
*7-16-91*

ATTACHMENT 1  
SOP NO. HW-6

## 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

*None*

## B) Field or rinse blank contamination

*Not identified or submitted*

## C) Water blank contamination

*None*

## D) Trip blank contamination

*Not identified or submitted*

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 - Blank MS/MSD  
out of clock - No other criteria for  
this in house QC.*

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*  
*7-17-91*

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 dibutylchloroendate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

\* Int. Cal 4-3-91 GCL#4 - No Samples

Indeno(1,2,3-cd)pyrene - 39.0%, benzo(g,h,i)perylene 36.7%

\* Cont. Cal 4-4-91 GCL#4 - No Samples

Hexachlorocyclopentadiene - 60.3%, 2,4-Dinitrophenol - 47.5%, 4,6-Dinitro-2-methyl phenol 29.0%

\* Cont Cal 4-5-91 GCL#4 - Samples - 07-001-M001, 07-002-M001, 07-002-M101  
07-002-M201, 07-003-M001, MS, MSD, 07-004-M001

J pos (>25% - <50%) Indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene

J pos, UJ NDs (>50% - <90%) 2,4-Dinitrophenol

\* Cont Cal 4-5-91 GCL#4 Samples 05-005-M001, 05-008-M001, MS, MSD, 07-005-M001,  
05-001-M001, 05-002-M001, 05-003-M001, 05-004-M001, 05-004-M101, 05-004-M201,

J pos (>25% - <50%) 2,4-dinitrophenol, Indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene,  
benzo(g,h,i)perylene.

\* Cont Cal 4-6-91 GCL#4 Samples 05-006-M001, 05-007-M001

J pos (>25% - <50%) 2,4-dinitrophenol, dibenzo(a,h)anthracene, benzo(g,h,i)perylene,  
2,4,6-Tribromophenol (surr)

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*

*SMW*  
*7-16-91*

DATA ASSESSMENT:

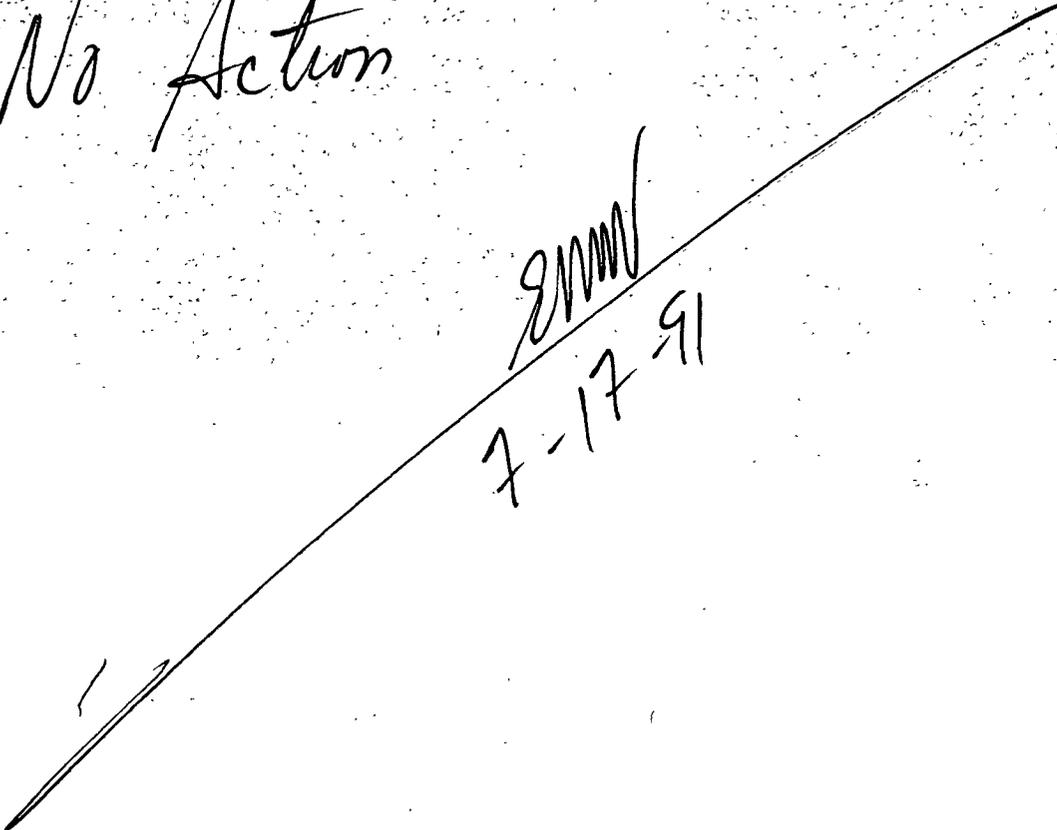
7. INTERNAL STANDARDS PERFORMANCE:

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  $\pm 30$  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.

*No Action*

*EMM*  
*7-17-91*



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  $\pm 0.06$  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.

*Sample 07-005-M001 - Vijet TIC #1 tri chloro ethene  
VOA TCL*

*Sample 05-007-M001 - Vijet TIC #3  
tetra chloro ethene  
VOA TCL*

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.

*No Action*

*gmm*  
*7-16-91*

DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

*None*

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

*System performance and data package is very good. See case narrative.*

12. CONTRACT PROBLEMS ~~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.

*None*

DPO: [ ] ACTION [ ] FYI

Region \_\_\_\_\_

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 9103L042

LABORATORY R.F. WESTON - GULF COAST

SDG NO. \_\_\_\_\_

DATA USER R.F. WESTON

SOW 2/88 C&P REGION II

REVIEW COMPLETION DATE 7-16-91

NO. OF SAMPLES 17 WATER N/A SOIL N/A OTHER \_\_\_\_\_

REVIEWER [ ] ESD [ ] ESAT  OTHER, CONTRACT/CONTRACTOR HEARTLAND ESI

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	0	0		
2. GC-MS TUNE/ GC PERFORMANCE	0	0		
3. INITIAL CALIBRATIONS	0	0		
4. CONTINUING CALIBRATIONS	0	0		
5. FIELD BLANKS ("F" = not applicable)	0	F		
6. LABORATORY BLANKS	0	0		
7. SURROGATES	0	0		
8. MATRIX SPIKE/ DUPLICATES	0	0		
9. REGIONAL QC ("F" = not applicable)	F	F		
10. INTERNAL STANDARDS	0	0		
11. COMPOUND IDENTIFICATION	0	0		
12. COMPOUND QUANTITATION	0	0		
13. SYSTEM PERFORMANCE	0	0		
14. OVERALL ASSESSMENT	0	0		

*Handwritten notes:*  
15-8/11  
M  
Z

- 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: \_\_\_\_\_

*Handwritten signature:* JWW  
*Handwritten date:* 7-18-91

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

SOP NO: HW-6  
Date: February 1989

Type of Review: BRAC REGION II DATA VALIDATION

Date: 7-16-91

Project: COLTSNECK NAVAL WEAPONS STATION

Case #: 91032042

Reviewer's Initials: RMM

Lab Name: A.F. WESTON GULF COAST

Number of Samples: 17

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)	0	0	0	0	0	0	17	0/255
H/N (50)	0	0	0	0	2	0	17	5/850
VOA (35)								
PEST (20)								
ICM (7)								
TCDD (1)								

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)	0	0	6	0	0	0	17	6/255
H/N (50)	0	0	0	0	0	0	17	0/850
VOA (35)								
PEST (20)								
ICM (7)								
TCDD (1)								

000033



# HEARTLAND ENVIRONMENTAL SERVICES, INC.

P.O. BOX 163 ST. PETERS MO 63376  
(314) 278-8232

REGION II SVOA DATA VALIDATION  
NAVAL WEAPONS STATION - COLTSNECK  
ROY F. WESTON CASE 9103L007

Coltsneck ID    R.F. Weston ID    Coltsneck ID    R.F. Weston ID

Soil Samples (all)

03-004-T001L	9103L007-001	03-007-T001	9103L007-002
03-007-T001	9103L007-002MS	03-007-T001	9103L007-002MSD
04-002-T001	9103L007-003	04-003-T001	9103L007-004
05-001-T001	9103L007-006	05-001-T101	9103L007-007
05-003-T001	9103L007-008	03-TP03-001	9103L007-10

Water Samples (all)

10-004-T201	9103L007-009	10-004-T201	9103L007-009MS
10-004-T201	9103L007-009MSD		

PREPARED BY:

  
Eugene M. Watson

DATE:

7-18-91

VERIFIED BY:

  
Paul B. Humburg

DATE:

7/18/91

00001



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 were met per the 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 of the method blanks that were extracted and analyzed did exhibit contamination for a TCL and numerous TICs. The TICs found in the blank appeared in all of the samples. Most TICs that were labeled with blank qualifiers "B" are rejected since they are less than 5X the blank value.

Specific Findings:

1. For all soil samples except 04-002-T001, the method blank 91GB0144-MB1 exhibited contamination for bis(2-ethylhexyl) phthalate. All sample results for bis(2-ethylhexyl) phthalate are less than the CRQL and less than 10X the blank value. Reject the sample results for bis(2-ethylhexyl) phthalate and report the CRQL.
2. For the following samples, the TICs listed below are rejected due to blank contamination.

<u>Sample ID</u>	<u>TIC Number</u>
03-004-T001	1,6
03-007-T001	1,2,4
04-002-T001	1
04-003-T001	1,3,4,5
05-001-T001	1,18,19
05-001-T101	1,16,17
05-003-T001	1,11,17
03-TP03-001	1,12



DATA ASSESSMENT AND NARRATIVE

PAGE - 2

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.

In addition, the form 7s contained transcription errors for three (3) of the surrogate compounds, which resulted in incorrect %Ds. Heartland ESI contacted the laboratory and had them resubmit new form 7s that reflected the correct %Ds.

Specific findings:

3. The initial calibration on 04/03/91 on instrument GCL #4 contained the following compounds above 30%RSD. Samples were not analyzed so qualifications are not necessary.
  - a) indeno(1,2,3-c,d)pyrene
  - b) benzo(g,h,i)perylene
  
4. For samples 10-004-T201, 10-004-T201MS, and 10-004-T201MSD, the continuing calibration on 04/03/91 on instrument GCL #1 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J):
  - a) indeno(1,2,3-c,d)pyrene
  - b) 2,4-dinitrophenol
  - c) dibenzo(a,h)anthracene
  
5. For samples 10-004-T201, 10-004-T201MS, and 10-004-T201MSD, the continuing calibration on 04/03/91 on instrument GCL #1 contained the following compounds above 50% D, but less than 90% D. Qualify all positive result for these compounds as estimated (J) and all non detect results as estimated (UJ).
  - a) benzo(g,h,i)perylene
  - b) benzyl alcohol



DATA ASSESSMENT AND NARRATIVE

PAGE - 3

Calibrations - %RSDs and %Ds (continued)

6. For samples 03-004-T001, 04-003-T001, and 04-002-T001, the continuing calibration on 04/06/91 on instrument GCL #4 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
  - a) benzo(g,h,i)perylene
  - b) 2,4-dinitrophenol
  
7. For samples 03-007-T001, 03-007-T001MS, 03-007-T001MSD, 05-001-T001, 05-001-T101, 05-003-T001, and 03-TP03-001, the continuing calibration on 04/04/91 on instrument GCL #4 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
  - a) benzo(g,h,i)perylene
  - b) 2,4-dinitrophenol
  - c) hexachlorocyclopentadiene

Surrogates

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

Internal Standards

Three (3) samples exhibited EICP internal standard areas which were out of QA/QC limits. All other sample EICP internal standard areas were acceptable.

However, the laboratory did not reanalyze the samples per the CLP protocol. In the future, all samples that exhibit EICP internal standard areas outside the QA/QC limits must be reanalyzed.

Specific Findings:

8. For sample 04-002-T001, the following internal standards exhibited EICP areas that were above the upper 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) perylene-d12
  
9. For sample 05-001-T001, the following internal standards exhibited EICP areas that were above the upper 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) perylene-d12



DATA ASSESSMENT AND NARRATIVE

PAGE - 4

Internal Standards (continued)

10. For sample 05-001-T101, the following internal standards exhibited EICP areas that were above the upper 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) chrysene-d12
  - b) perylene-d12

Compound Identification/Quantitation

All of the spectra submitted by the laboratory met the Region II guidelines. No qualifications are needed. However, the laboratory did not identify the Aldol condensation products on the TIC form. Heartland ESI will not qualify or identify these because all of the Aldol condensation products are rejected due to blank contamination. On all future packages, the laboratory must identify Aldol condensation products.

Matrix Spike/Matrix Spike Duplicate

The water and soil MS/MSD exhibited acceptable recoveries and %RPDs. No qualifications are needed.

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 less than 5% of the data that is qualified.



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.



SUMMARY OF DATA QUALIFICATIONS

<u>SAMPLE ID</u>	<u>ANALYTE ID</u>	<u>DL</u>	<u>QL</u>	<u>SPECIFIC FINDINGS</u>
All soil samples except 04-002-T001	bis(2-ethyl-	+	CRQL	1
03-004-T001, 03-007-T001 04-002-T001, 04-003-T001 05-001-T001, 05-001-T101 05-003-T001, 03-TP03-001	TICs		TICs R	2
10-004-T201, 10-004-T201MS, 10-004-T201MSD	indeno (1,2,3-c,d)pyrene 2,4-dinitrophenol dibenzo(g,h,i)perylene	+	J	4
10-004-T201 10-004-T201MS 10-004-T201MSD	benzyl alcohol +/- benzo(g,h,i)perylene		J/UJ	5
03-004-T001, 04-003-T001 04-002-T001	benzo(g,h,i) perylene 2,4-dinitrophenol	+	J	6
03-007-T001, 03-007-T001MS, 03-007-T001MSD, 05-001-T001, 05-001-T101 05-003-T001, 03-TP03,001	benzo(g,h,i) perylene 2,4-dinitrophenol hexachlorocyclopentadiene	+	J	7
04-002-T001	all compounds +/- associated with the internal standard perylene-d12		J/UJ	8

\* 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



SUMMARY OF DATA QUALIFICATIONS

PAGE - 2

<u>SAMPLE ID</u>	<u>ANALYTE ID</u>	<u>DL</u>	<u>QL</u>	<u>SPECIFIC FINDINGS</u>
05-001-T001	all compounds	+/-	J/UJ 9	associated with the internal standard perylene-d12
05-001-T101	all compounds	+/-	J/UJ 10	associated with the internal standards chrysene-d12 perylene-d12

- \* 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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-004-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAS86

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 9 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-004-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAS86

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 9 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) ug/Kg

99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	37	J
129-00-0	Pyrene	51	J
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	730	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	350 370	JB-U 1
117-84-0	Di-n-Octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

46

00010

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-004-T001

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

Client: Naval Weapons Station

Matrix: SOIL

Lab Sample ID: 9103L007-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: DBAS86

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec. 9 dec.

Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0

Dilution Factor: 1.00

Number TICs found: 17

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.43	5000	JB R 2
2.	UNKNOWN	17.75	200	J NS
3. 57103	HEXADECANOIC ACID	27.13	600	J ↓
4.	UNKNOWN HYDROCARBON	30.02	300	J ↓
5.	UNKNOWN HYDROCARBON	31.14	1000	J ↓
6.	UNKNOWN	31.96	800	JB R 2
7.	UNKNOWN HYDROCARBON	32.23	2000	J NS
8.	UNKNOWN HYDROCARBON	33.26	2000	J ↓
9.	UNKNOWN HYDROCARBON	34.26	1000	J ↓
10.	UNKNOWN HYDROCARBON	35.31	1000	J ↓
11.	UNKNOWN HYDROCARBON	36.46	1000	J ↓
12.	UNKNOWN HYDROCARBON	37.79	1000	J ↓
13.	UNKNOWN HYDROCARBON	39.32	700	J ↓
14.	UNKNOWN HYDROCARBON	41.16	700	J ↓
15.	UNKNOWN	41.58	200	J ↓
16.	UNKNOWN	41.69	200	J ↓
17.	UNKNOWN	43.35	400	J ↓

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-007-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT02

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 16 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
100-51-6	Benzyl alcohol	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	bis(2-Chloroisopropyl)ether	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-Di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
65-85-0	Benzoic acid	2000	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U

IC  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-007-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT02

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 16 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

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

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

99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
84-74-2	Di-n-Butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	790	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	160/400	U
117-84-0	Di-n-Octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

73

00013

1F  
SEMI-VOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-007-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT02

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 16 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

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

Number TICs found: 4 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.41	6000	JB
2.	UNKNOWN	31.93	2000	JB
3.	SUB. HEXANEDIOIC ACID	32.29	20000	JB
4.	UNKNOWN	36.37	900	JB

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1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-003

Sample wt/vol: 30.1 (g/mL) G Lab File ID: DBAS88

Level: (low/med): LOW Date Received: 03/22/91

% Moisture: not dec. 7 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 25.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	
108-95-2	Phenol	8900	U
111-44-4	bis(2-Chloroethyl)ether	8900	U
95-57-8	2-Chlorophenol	8900	U
541-73-1	1,3-Dichlorobenzene	8900	U
106-46-7	1,4-Dichlorobenzene	8900	U
100-51-6	Benzyl alcohol	8900	U
95-50-1	1,2-Dichlorobenzene	8900	U
95-48-7	2-Methylphenol	8900	U
108-60-1	bis(2-Chloroisopropyl)ether	8900	U
106-44-5	4-Methylphenol	8900	U
621-64-7	N-Nitroso-Di-n-propylamine	8900	U
67-72-1	Hexachloroethane	8900	U
98-95-3	Nitrobenzene	8900	U
78-59-1	Isophorone	8900	U
88-75-5	2-Nitrophenol	8900	U
105-67-9	2,4-Dimethylphenol	8900	U
65-85-0	Benzoic acid	45000	U
111-91-1	bis(2-Chloroethoxy)methane	8900	U
120-83-2	2,4-Dichlorophenol	8900	U
120-82-1	1,2,4-Trichlorobenzene	8900	U
91-20-3	Naphthalene	8900	U
106-47-8	4-Chloroaniline	8900	U
87-68-3	Hexachlorobutadiene	8900	U
59-50-7	4-Chloro-3-methylphenol	8900	U
91-57-6	2-Methylnaphthalene	8900	U
77-47-4	Hexachlorocyclopentadiene	8900	U
88-06-2	2,4,6-Trichlorophenol	8900	U
95-95-4	2,4,5-Trichlorophenol	45000	U
91-58-7	2-Chloronaphthalene	8900	U
88-74-4	2-Nitroaniline	45000	U
131-11-3	Dimethylphthalate	8900	U
208-96-8	Acenaphthylene	8900	U
606-20-2	2,6-Dinitrotoluene	8900	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-003

Sample wt/vol: 30.1 (g/mL) G Lab File ID: DBAS88

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 7 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 25.0

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

99-09-2-----	3-Nitroaniline	45000	U
83-32-9-----	Acenaphthene	8900	U
51-28-5-----	2,4-Dinitrophenol	45000	U
100-02-7-----	4-Nitrophenol	45000	U
132-64-9-----	Dibenzofuran	8900	U
121-14-2-----	2,4-Dinitrotoluene	8900	U
84-66-2-----	Diethylphthalate	8900	U
7005-72-3-----	4-Chlorophenyl-phenylether	8900	U
86-73-7-----	Fluorene	8900	U
100-01-6-----	4-Nitroaniline	45000	U
534-52-1-----	4,6-Dinitro-2-methylphenol	45000	U
86-30-6-----	N-Nitrosodiphenylamine (1)	8900	U
101-55-3-----	4-Bromophenyl-phenylether	8900	U
118-74-1-----	Hexachlorobenzene	8900	U
87-86-5-----	Pentachlorophenol	45000	U
85-01-8-----	Phenanthrene	8900	U
120-12-7-----	Anthracene	8900	U
84-74-2-----	Di-n-Butylphthalate	8900	U
206-44-0-----	Fluoranthene	8900	U
129-00-0-----	Pyrene	8900	U
85-68-7-----	Butylbenzylphthalate	8900	U
91-94-1-----	3,3'-Dichlorobenzidine	18000	U
56-55-3-----	Benzo(a)anthracene	8900	U
218-01-9-----	Chrysene	8900	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	8900	U
117-84-0-----	Di-n-Octyl phthalate	8900	U
205-99-2-----	Benzo(b)fluoranthene	8900	U
207-08-9-----	Benzo(k)fluoranthene	8900	U
50-32-8-----	Benzo(a)pyrene	8900	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	8900	U
53-70-3-----	Dibenzo(a,h)anthracene	8900	U
191-24-2-----	Benzo(g,h,i)perylene	8900	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev. 85

00016

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-002-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-003

Sample wt/vol: 30.1 (g/mL) G Lab File ID: DBAS88

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 7 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 25.0

Number TICs found: 2 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.39	6000	JB- <del>2</del> 2
2.	SUB. HEXANEDIOIC ACID	32.25	20000	JB- <del>2</del> 2

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-003-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAS87

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 13 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	U
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	bis(2-Chloroisopropyl)ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic acid	1900	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-003-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAS87

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 13 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
84-74-2	Di-n-Butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	44 <del>380</del>	U <del>U</del>
117-84-0	Di-n-Octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

9

00019

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-003-T001

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

Client: Naval Weapons Station

Matrix: SOIL

Lab Sample ID: 9103L007-004

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: DBAS87

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec. 13 dec.

Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0

Dilution Factor: 1.00

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.41	5000	JB <i>R2</i>
2.	SUB. PROPANETRIOL	17.75	5000	JNS
3.	UNKNOWN	31.93	2000	JB <i>R2</i>
4.	SUB. HEXANEDIOIC ACID	32.24	400	JB <i>↓</i>
5.	UNKNOWN	36.38	200	JB <i>↓</i>

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-001-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT05

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 18 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

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

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

108-95-2-----	Phenol	400	U
111-44-4-----	bis(2-Chloroethyl)ether	400	U
95-57-8-----	2-Chlorophenol	400	U
541-73-1-----	1,3-Dichlorobenzene	400	U
106-46-7-----	1,4-Dichlorobenzene	400	U
100-51-6-----	Benzyl alcohol	400	U
95-50-1-----	1,2-Dichlorobenzene	400	U
95-48-7-----	2-Methylphenol	400	U
108-60-1-----	bis(2-Chloroisopropyl)ether	400	U
106-44-5-----	4-Methylphenol	400	U
621-64-7-----	N-Nitroso-Di-n-propylamine	400	U
67-72-1-----	Hexachloroethane	400	U
98-95-3-----	Nitrobenzene	400	U
78-59-1-----	Isophorone	400	U
88-75-5-----	2-Nitrophenol	400	U
105-67-9-----	2,4-Dimethylphenol	400	U
65-85-0-----	Benzoic acid	2000	U
111-91-1-----	bis(2-Chloroethoxy)methane	400	U
120-83-2-----	2,4-Dichlorophenol	400	U
120-82-1-----	1,2,4-Trichlorobenzene	400	U
91-20-3-----	Naphthalene	400	U
106-47-8-----	4-Chloroaniline	400	U
87-68-3-----	Hexachlorobutadiene	400	U
59-50-7-----	4-Chloro-3-methylphenol	400	U
91-57-6-----	2-Methylnaphthalene	400	U
77-47-4-----	Hexachlorocyclopentadiene	400	U
88-06-2-----	2,4,6-Trichlorophenol	400	U
95-95-4-----	2,4,5-Trichlorophenol	2000	U
91-58-7-----	2-Chloronaphthalene	400	U
88-74-4-----	2-Nitroaniline	2000	U
131-11-3-----	Dimethylphthalate	400	U
208-96-8-----	Acenaphthylene	400	U
606-20-2-----	2,6-Dinitrotoluene	400	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-001-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT05

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 18 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

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

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	79	J
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	55	J
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	84	J
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	220	J
120-12-7	Anthracene	48	J
84-74-2	Di-n-Butylphthalate	400	U
206-44-0	Fluoranthene	230	J
129-00-0	Pyrene	140	J
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	810	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	85400	JBU
117-84-0	Di-n-Octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	UJ
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev.

107

00022

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-001-T001

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

Client: Naval Weapons Station

Matrix: SOIL

Lab Sample ID: 9103L007-006

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: DBAT05

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec. 18 dec.

Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/07/91

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

Dilution Factor: 1.00

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	<del>UNKNOWN</del>	<del>6.41</del>	<del>6000</del>	<del>JB</del> <i>R2</i>
2.	HYDROCARBON (C13H28)	16.93	700	J <i>NS</i>
3.	HYDROCARBON (C14H30)	18.73	1000	J
4.	HYDROCARBON (C15H32)	19.81	900	J
5.	HYDROCARBON (C15H32)	20.45	4000	J
6.	HYDROCARBON (C16H34)	21.44	600	J
7.	HYDROCARBON (C16H34)	22.04	3000	J
8.	HYDROCARBON (C17H36)	22.77	1000	J
9.	HYDROCARBON (C17H36)	23.55	2000	J
10.	HYDROCARBON (C19H40)	23.63	2000	J
11.	HYDROCARBON (C18H38)	24.95	2000	J
12.	HYDROCARBON (C19H40)	26.32	2000	J
13.	HYDROCARBON (C20H42)	27.61	1000	J
14.	UNKNOWN	28.55	600	J
15.	HYDROCARBON (C21H44)	28.83	1000	J
16.	HYDROCARBON (C22H46)	30.00	500	J
17.	HYDROCARBON (C23H48)	31.14	300	J
18.	<del>UNKNOWN</del>	<del>31.93</del>	<del>1000</del>	<del>JB</del> <i>R2</i>
19.	SUB. HEXANEDIOIC ACID	32.24	600	JB <i>R2</i>
20.	UNKNOWN HYDROCARBON	36.45	400	J <i>NS</i>

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-001-T101

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT06

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 19 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
100-51-6	Benzyl alcohol	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	bis(2-Chloroisopropyl)ether	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-Di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
65-85-0	Benzoic acid	2000	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-001-T101

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT06

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 19 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	110	J
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	82	J
121-14-2	2,4-Dinitrotoluene	410	U
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	120	J
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	310	J
120-12-7	Anthracene	49	J
84-74-2	Di-n-Butylphthalate	410	U
206-44-0	Fluoranthene	310	J
129-00-0	Pyrene	180	J
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	820	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	68 <del>410</del>	J
117-84-0	Di-n-Octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

144  
00025

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-001-T101

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT06

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 19 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

Number TICs found: 20 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.43	6000	JB
2.	HYDROCARBON (C13H28)	16.95	600	J
3.	HYDROCARBON (C14H30)	18.76	1000	J
4.	HYDROCARBON (C16H34)	19.82	800	J
5.	HYDROCARBON (C15H32)	20.45	2000	J
6.	TRIMETHYLNAPHTHALENE & HC	21.47	600	J
7.	HYDROCARBON (C16H34)	22.04	2000	J
8.	HYDROCARBON (C16H34)	22.77	1000	J
9.	HYDROCARBON (C17H36)	23.55	2000	J
10.	HYDROCARBON (C19H40)	23.63	2000	J
11.	HYDROCARBON (C18H38)	24.96	2000	J
12.	HYDROCARBON (C19H40)	26.33	2000	J
13.	HYDROCARBON (C20H42)	27.64	1000	J
14.	HYDROCARBON (C21H44)	28.84	1000	J
15.	HYDROCARBON (C22H46)	30.01	500	J
16.	UNKNOWN	31.94	900	JB
17.	SUB. HEXANEDIOIC ACID	32.27	2000	JB
18.	UNKNOWN HYDROCARBON	35.31	300	J
19.	UNKNOWN HYDROCARBON	36.47	500	J
20.	UNKNOWN	45.77	500	J

*Handwritten notes:*  
 JB  
 12  
 15  
 2  
 2  
 2  
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1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-003-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT07

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 22 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	U
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
100-51-6	Benzyl alcohol	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	bis(2-Chloroisopropyl)ether	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-Di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
65-85-0	Benzoic acid	2100	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

05-003-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT07

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 22 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl-phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	100	J
120-12-7	Anthracene	430	U
84-74-2	Di-n-Butylphthalate	430	U
206-44-0	Fluoranthene	200	J
129-00-0	Pyrene	160	J
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	860	U
56-55-3	Benzo(a)anthracene	83	J
218-01-9	Chrysene	95	J
117-81-7	bis(2-Ethylhexyl)phthalate	180/430	JB 6/1
117-84-0	Di-n-Octyl phthalate	430	U
205-99-2	Benzo(b)fluoranthene	89	J
207-08-9	Benzo(k)fluoranthene	71	J
50-32-8	Benzo(a)pyrene	79	J
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

180

00028

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

05-003-T001

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

Client: Naval Weapons Station

Matrix: SOIL

Lab Sample ID: 9103L007-008

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: DBAT07

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec. 22 dec.

Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0

Dilution Factor: 1.00

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.41	5000	JB R2
2.	HEXAHYDRO METHANOAZULENE	19.29	500	J N5
3.	UNKNOWN	27.62	300	J
4.	UNKNOWN (C18H300)	27.84	300	J
5.	UNKNOWN	28.25	500	J
6.	UNKNOWN	28.53	300	J
7.	UNKNOWN	29.23	600	J
8.	AROMATIC (C18H18)	30.69	900	J
9.	UNKNOWN	31.39	300	J
10.	OCTAHYDRO PHENANTHRENOL	31.71	1000	J
11.	UNKNOWN	31.96	2000	JB R2
12.	SUB. HEXANEDIOIC ACID	32.31	20000	JB R2
13.	BUTOXY ETHANOL PHOSPHATE	32.41	400	J N5
14.	UNKNOWN	33.14	300	J
15.	UNKNOWN	33.61	300	J
16.	UNKNOWN	35.77	200	J
17.	UNKNOWN	36.40	1000	JB R2
18.	UNKNOWN HYDROCARBON	37.79	800	J
19.	UNKNOWN HYDROCARBON	41.17	500	J
20.	UNKNOWN	41.67	200	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-TP03-001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT08

Level: (low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 32 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	U
108-95-2	Phenol	490	U
111-44-4	bis(2-Chloroethyl)ether	490	U
95-57-8	2-Chlorophenol	490	U
541-73-1	1,3-Dichlorobenzene	490	U
106-46-7	1,4-Dichlorobenzene	490	U
100-51-6	Benzyl alcohol	490	U
95-50-1	1,2-Dichlorobenzene	490	U
95-48-7	2-Methylphenol	490	U
108-60-1	bis(2-Chloroisopropyl)ether	490	U
106-44-5	4-Methylphenol	490	U
621-64-7	N-Nitroso-Di-n-propylamine	490	U
67-72-1	Hexachloroethane	490	U
98-95-3	Nitrobenzene	490	U
78-59-1	Isophorone	490	U
88-75-5	2-Nitrophenol	490	U
105-67-9	2,4-Dimethylphenol	490	U
65-85-0	Benzoic acid	910	J
111-91-1	bis(2-Chloroethoxy)methane	490	U
120-83-2	2,4-Dichlorophenol	490	U
120-82-1	1,2,4-Trichlorobenzene	490	U
91-20-3	Naphthalene	490	U
106-47-8	4-Chloroaniline	490	U
87-68-3	Hexachlorobutadiene	490	U
59-50-7	4-Chloro-3-methylphenol	490	U
91-57-6	2-Methylnaphthalene	490	U
77-47-4	Hexachlorocyclopentadiene	490	U
88-06-2	2,4,6-Trichlorophenol	490	U
95-95-4	2,4,5-Trichlorophenol	2500	U
91-58-7	2-Chloronaphthalene	490	U
88-74-4	2-Nitroaniline	2500	U
131-11-3	Dimethylphthalate	490	U
208-96-8	Acenaphthylene	490	U
606-20-2	2,6-Dinitrotoluene	490	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-TP03-001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L007-010

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAT08

Level: (Low/med) LOW Date Received: 03/22/91

% Moisture: not dec. 32 dec. Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	
99-09-2	3-Nitroaniline	2500	U
83-32-9	Acenaphthene	490	U
51-28-5	2,4-Dinitrophenol	2500	U
100-02-7	4-Nitrophenol	2500	U
132-64-9	Dibenzofuran	490	U
121-14-2	2,4-Dinitrotoluene	490	U
84-66-2	Diethylphthalate	490	U
7005-72-3	4-Chlorophenyl-phenylether	490	U
86-73-7	Fluorene	490	U
100-01-6	4-Nitroaniline	2500	U
534-52-1	4,6-Dinitro-2-methylphenol	2500	U
86-30-6	N-Nitrosodiphenylamine (1)	490	U
101-55-3	4-Bromophenyl-phenylether	490	U
118-74-1	Hexachlorobenzene	490	U
87-86-5	Pentachlorophenol	2500	U
85-01-8	Phenanthrene	250	J
120-12-7	Anthracene	62	J
84-74-2	Di-n-Butylphthalate	490	U
206-44-0	Fluoranthene	350	J
129-00-0	Pyrene	410	J
85-68-7	Butylbenzylphthalate	490	U
91-94-1	3,3'-Dichlorobenzidine	990	U
56-55-3	Benzo(a)anthracene	200	J
218-01-9	Chrysene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	75 490	JB U I
117-84-0	Di-n-Octyl phthalate	490	U
205-99-2	Benzo(b)fluoranthene	190	J
207-08-9	Benzo(k)fluoranthene	210	J
50-32-8	Benzo(a)pyrene	190	J
193-39-5	Indeno(1,2,3-cd)pyrene	490	U
53-70-3	Dibenzo(a,h)anthracene	490	U
191-24-2	Benzo(g,h,i)perylene	490	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

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00031

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-TP03-001

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

Client: Naval Weapons Station

Matrix: SOIL

Lab Sample ID: 9103L007-010

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: DBAT08

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec. 32 dec.

Date Extracted: 03/27/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 04/07/91

GPC Cleanup: (Y/N) Y pH: 6.0

Dilution Factor: 1.00

Number TICs found: 20

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.43	7000	JB <sup>2</sup>
2.	UNKNOWN	15.55	1000	J <sup>NI</sup>
3.	UNKNOWN	16.34	6000	J
4.	UNKNOWN	18.86	1000	J
5.	HYDROCARBON (C10H20)	24.01	800	J
6.	TETRADECA.ACID & UNK.C11H16S	24.42	500	J
7.	TRIMETHYL PENTADECANONE	25.64	500	J
8.	UNKNOWN	28.86	400	J
9.	UNKNOWN	29.04	600	J
10.	UNKNOWN	29.47	900	J
11.	UNKNOWN	31.18	900	J
12.	UNKNOWN	31.96	900	JB <sup>2</sup>
13.	OCTADECENAL	32.60	700	J <sup>NI</sup>
14.	EICOSENE	33.37	1000	J
15.	UNKNOWN	35.48	2000	J
16.	UNKNOWN HYDROCARBON	37.82	1000	J
17.	UNKNOWN HYDROCARBON	41.20	2000	J
18.	OLEAN-ENE	41.69	7000	J
19.	UNKNOWN	42.57	2000	J
20.	HYDROCARBON (C30H50)	46.20	40000	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-004-T201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L007-009

Sample wt/vol: 970 (g/mL) ML Lab File ID: AAAQ74

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
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 <sup>5</sup>
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	52	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	52	U
91-58-7	-----2-Chloronaphthalene	10	U
88-74-4	-----2-Nitroaniline	52	U
131-11-3	-----Dimethylphthalate	10	U
208-96-8	-----Acenaphthylene	10	U
606-20-2	-----2,6-Dinitrotoluene	10	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-004-T201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L007-009

Sample wt/vol: 970 (g/mL) ML Lab File ID: AAAQ74

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	52	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	52	U
100-02-7	4-Nitrophenol	52	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	52	U
534-52-1	4,6-Dinitro-2-methylphenol	52	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	52	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	21	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	UJ 5

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

218

00034

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10-004-T201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L007-009

Sample wt/vol: 970 (g/mL) ML Lab File ID: AAA074

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

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

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 9103L007  
 LAB: R. L. WESTON GULF COAST  
 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 SMD OCS 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 ENA analyses and Part C for Pesticide/PCBs.

Does this package contain:

VOA data?

ENA data?

Pesticide/PCB data?

ACTION: Complete corresponding parts of checklist.

YES NO N/A

PART B: BNA ANALYSES

1.0 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).

2.0 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 Analyzed
			Date Lab Received	Date Extracted	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

*[Handwritten signature]*  
 7-12-91

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("U"), 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").

3.0 Surrogate Recovery (Form II)

3.1 Are the BVA 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 BVA 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 BVA 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 ("U").

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".

YES NO N/A

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".

4.0 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
- b. Med Water
- c. Low Soil
- d. Med Soil

— —  
 Med Wat —   
 — —  
 — —

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  
 $\emptyset$  out of 22                       $\emptyset$  out of 22

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

Water                      Soils  
 $\emptyset$  out of 11                       $\emptyset$  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.

5.0 Blanks (Form IV)

5.1 Is the Method Blank Summary (Form IV) present?

YES	NO	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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5.3 Has a BNA ~~instrument~~ <sup>Method</sup> blank been analyzed for each GS/MS system used.

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 BVAs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample Dilution Factor.

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

6.2 Do any field/rinse blanks have positive BVA results (TCL and/or TIC)?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	-------------------------------------

ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)

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.

*Not submitted or identified*

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

YES NO N/A

	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 Submitted or 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.

				YES	NO	N/A
DATE	TIME	INSTRUMENT	SAMPLE NUMBERS			
		<i>EMM</i>				
		<i>9-12-91</i>				

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

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.

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".

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

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

8.2 Are the BVA 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?

- |  | YES                                 | NO | N/A |
|--|-------------------------------------|----|-----|
| a. Samples and/or fractions as appropriate                               | <input checked="" type="checkbox"/> | —  | —   |
| b. Matrix spikes and matrix spike duplicates (Mass spectra not required) | <input checked="" type="checkbox"/> | —  | —   |
| c. Blanks  | <input checked="" type="checkbox"/> | —  | —   |

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

8.3 Are the response factors shown in the Quant Report?

8.4 Is chromatographic performance acceptable with respect to:

- |                                |                                     |   |                                     |
|--------------------------------|-------------------------------------|---|-------------------------------------|
| Baseline stability             | <input checked="" type="checkbox"/> | — | —                                   |
| Resolution                     | <input checked="" type="checkbox"/> | — | —                                   |
| Peak shape                     | <input checked="" type="checkbox"/> | — | —                                   |
| Full-scale graph (attenuation) | <input checked="" type="checkbox"/> | — | —                                   |
| Other: _____                   | <input type="checkbox"/>            | — | <input checked="" type="checkbox"/> |

*Quant ion*

ACTION: Use professional judgement to determine the acceptability of the data.

8.5 Are the lab-generated standard mass spectra of the identified BVA 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
<u>9.0 Tentatively Identified Compounds (TIC)</u>			
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?	<input checked="" type="checkbox"/>	—	—
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	<input checked="" type="checkbox"/>	—	—
b. Blanks	<input checked="" type="checkbox"/>	—	—
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 <u>identified</u> 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)?	—	<input checked="" type="checkbox"/>	—
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?	<input checked="" type="checkbox"/>	—	—
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	—
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.			

*Aldols not identified.*

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?	—	<input checked="" type="checkbox"/>	—
10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture?	<input checked="" type="checkbox"/>	—	—

	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?

<input checked="" type="checkbox"/>	—	—
-------------------------------------	---	---

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 BVA fraction?

<input checked="" type="checkbox"/>	—	—
-------------------------------------	---	---

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Are response factors stable for BVAs over the concentration range of the calibration (RSD <30%)?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	—
--------------------------	-------------------------------------	---

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?

—	<input checked="" type="checkbox"/>	—
---	-------------------------------------	---

ACTION: Circle all outliers in red.

ACTION: If any BVA 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.)	—	<input checked="" type="checkbox"/>	—

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)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BVA fraction?	<input checked="" type="checkbox"/>	—	—
---	-------------------------------------	---	---

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?	<input checked="" type="checkbox"/>	—	—
--	-------------------------------------	---	---

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

*7-12-91*  
*all DFTPP assessment form.*

---



---



---

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").

13.3 Do any continuing calibration standard compounds have a RRF < 0.05?	—	<input checked="" type="checkbox"/>	—
--	---	-------------------------------------	---

ACTION: Circle all outliers in red.

ACTION: If any BVA 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").

13.4 Do any compounds have a % difference between initial and continuing calibration RRF > 25%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	—
---	-------------------------------------	--------------------------	---

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

% DIFFERENCE			YES	NO	N/A
25-50	50-90	>90			
'J' positive results, no action for non detects	'J' positive results, 'U' 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".

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
04-002-T001	Perylene-d12	35944	38941	155762
05-001-T001	↓	128442	32038	128150
05-001-T101	Chrysene-d12	171210	40440	161760
↓	Perylene-d12	144719	32038	128150

(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.

5. Field Duplicates

YES NO N/A

15.1 Were any field duplicates submitted for BVA analysis?

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

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.

*Not Submitted or identified*

TOTAL REVIEW

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

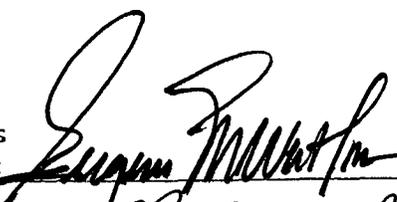
Case No. 91032007 SDG No.        LABORATORY GULF SITE COLTSNECK  
COAST

DATA ASSESSMENT:

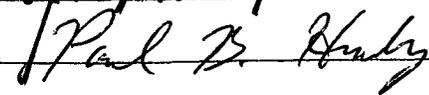
The current functional guidelines for evaluating organic data have been applied.

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: 

Date: 7/12/91

Verified By: 

Date: 7/18/91

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*

*EMW*  
*7-12-91*



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".

Three (3) Blank MS/MSD's were analyzed outside of the 12-hour clock. However all samples and sample MS/MSD's were analyzed within the 12-hour clock. No action is needed

~~SMW  
7-12-91~~

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*

*EMW*  
*7-12-91*

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 dibutylchlorodate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

\* Inst Cal 4-3-91 GCL#4 - NO Samples

Indeno (1,2,3-cd) pyrene - 39.0%, benzo (g,h,i) perylene 36.7%

\* Cont Cal 4-3-91 GCL#1 - 10-004-T201, MS, MSD

J pos (>25% - <50%) 2,4-dinitrophenol, indeno (1,2,3-cd) pyrene, dibenzo (a,h) anthracene

J pos, UJ-NDs (>50% - <90%) benzyl alcohol, benzo (g,h,i) perylene

\* Cont Cal 4-4-91 GCL#4 - 03-004-T001, 04-003-T001, 04-002-T001

J pos (>25% - <50%) 2,4-dinitrophenol, benzo (g,h,i) perylene

\* Cont Cal 4-7-91 GCL#4 - 03-007-T001, MS, MSD, 05-001-T001, 05-001-T101, 05-003-T001, 03-TP03-001

J pos (>25% - <50%) hexa chloro cyclo pentadecane, 2,4-dinitrophenol, benzo (g,h,i) perylene.

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*

*ESM*  
*7-12-91*

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  $\pm 30$  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.

Sample 04-002-T001 - I/US compds associated w/ pyrene-d12  
Sample 05-001-T001 - I/US compds associated w/ pyrene-d12  
Sample 05-001-T101 - I/US compds associated with  
Chrysene - d12  
pyrene - d12.

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  $\pm 0.06$  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.

*Aldol condensation products are not identified on TIC's. All data qualifications will reflect Aldols (A). However, most are rejected due to blank contamination of Aldol.*

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 MS/MSDs for the soil and water analyses yielded acceptable recoveries and RPDs. However, Spike Blanks SBKGB0136-MB1 contained the RPDs that were out of QC limits high. Due to the acceptable sample MS/MSDs, no action will be taken.

DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

*None*

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

*System performance fair - data package is good.  
See narrative*

12. CONTRACT PROBLEMS / NON-COMPLIANCE:

*Did not reanalyze samples with internal standard areas out of QA/QC control limits.*

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.

*None.*

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 91032007

LABORATORY R.F. WESTON - GULF COAST

SDG NO. \_\_\_\_\_

DATA USER R.F. WESTON

SOW 2/88 CUP / REGIONAL

REVIEW COMPLETION DATE 7-12-91

NO. OF SAMPLES 1 WATER 8

SOIL N/A OTHER \_\_\_\_\_

REVIEWER  ESD  ESAT  OTHER, CONTRACT/CONTRACTOR HEARLAND ESI

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	_____	0	_____	_____
2. GC-MS TUNE/ GC PERFORMANCE	_____	0	_____	_____
3. INITIAL CALIBRATIONS	_____	0	_____	_____
4. CONTINUING CALIBRATIONS	_____	0	_____	_____
5. FIELD BLANKS ("F" = not applicable)	_____	F	_____	_____
6. LABORATORY BLANKS	_____	0	_____	_____
7. SURROGATES	_____	0	_____	_____
8. MATRIX SPIKE/DUPLICATES	_____	0	_____	_____
9. REGIONAL QC ("F" = not applicable)	_____	F	_____	_____
10. INTERNAL STANDARDS	_____	M	_____	_____
11. COMPOUND IDENTIFICATION	_____	0	_____	_____
12. COMPOUND QUANTITATION	_____	0	_____	_____
13. SYSTEM PERFORMANCE	_____	0	_____	_____
14. OVERALL ASSESSMENT	_____	X	_____	_____

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: \_\_\_\_\_

*[Handwritten signature]*  
 7-18-91

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

SOP NO: HW-6  
Date: February 1989

Type of Review: GWA REGION II DATA VALIDATION Date: 2-12-91

Project: COLTS NECK NAVAL WEAPONS STATION

Case #: 9103L007

Reviewer's Initials: EMW

Lab Name: R.F. Weston - Gulf Coast

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)	0	0	0	0	0	0	9	0 / 135
II/N (50)	0	0	0	0	0	0	9	0 / 450
VOA (35)								
PEST (20)								
ICM (7)								
TCDD (1)								

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)	0	0	0	0	0	0	9	0 / 135
II/N (50)	0	0	2	7	0	25	9	34 / 450
VOA (35)								
PEST (20)								
ICM (7)								
TCDD (1)								

00061



# HEARTLAND ENVIRONMENTAL SERVICES, INC.

P.O. BOX 163 ST. PETERS MO 63376  
(314) 278-8232

REGION II SVOA DATA VALIDATION  
NAVAL WEAPONS STATION - COLTSNECK  
ROY F. WESTON CASE 9103L043

<u>Coltsneck ID</u>	<u>R.F. Weston ID</u>	<u>Coltsneck ID</u>	<u>R.F. Weston ID</u>
Soil Samples (all)			
10-004-T001	9103L043-001	07-001-T001	9103L043-003
07-001-T001	9103L043-003MS	07-001-T001	9103L043-003MSD
07-007-T001	9103L043-004		

PREPARED BY:

Eugene M. Watson  
Eugene M. Watson

DATE:

7-18-91

VERIFIED BY:

Paul B. Humburg  
Paul B. Humburg

DATE:

7/18/91

00001



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 were met per the 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 of the method blanks that were extracted and analyzed did exhibit contamination for numerous TICs. The TICs found in the blank appeared in all of the samples. Most TICs that were labeled with blank qualifiers "B" are rejected since they are less than 5X the blank value.

Specific Findings:

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

<u>Sample ID</u>	<u>TIC Number</u>
10-004-T001	1,3
07-001-T001	1,12
07-007-T001	1,4

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.



DATA ASSESSMENT AND NARRATIVE

PAGE - 2

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.

In addition, the form 7s contained transcription errors for three (3) of the surrogate compounds, which resulted in incorrect %Ds. Heartland ESI contacted the laboratory and had them resubmit new form 7s that reflected the correct %Ds.

Specific findings:

2. The initial calibration on 04/03/91 on instrument GCL #4 contained the following compounds above 30%RSD. Samples were not analyzed so qualifications are not necessary.
  - a) indeno(1,2,3-c,d)pyrene
  - b) benzo(g,h,i)perylene
  
3. For samples 10-004-T001, 07-001-T001MS, 07-001-T001MSD, and 07-007-T001, the continuing calibration on 04/06/91 on instrument GCL #4 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
  - a) benzo(g,h,i)perylene
  - b) 2,4-dinitrophenol
  - c) dibenzo(a,h)anthracene
  - d) 2,4,6-tribromophenol (surrogate)

\* The data will not be qualified for the surrogate 2,4,6-tribromophenol. All of the surrogate recoveries for the associated samples were within QA/QC limits.
  
4. For the method blank, the continuing calibration on 04/07/91 on instrument GCL #4 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
  - a) benzo(g,h,i)perylene
  - b) 2,4-dinitrophenol
  - c) hexachlorocyclopentadiene
  - d) 2,4,6-tribromophenol (surrogate)

\* The data will not be qualified for the surrogate 2,4,6-tribromophenol. All of the surrogate recoveries for the associated samples were within QA/QC limits.



DATA ASSESSMENT AND NARRATIVE

PAGE - 3

Surrogates

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

Internal Standards

All of the samples exhibited EICP internal standard areas which were within QA/QC limits. No qualifications are needed.

Compound Identification/Quantitation

All of the spectra submitted by the laboratory met the Region II guidelines. No qualifications are needed. However, the laboratory did not identify the Aldol condensation products on the TIC form. Heartland ESI will not qualify or identify these because all of the Aldol condensation products are rejected due to blank contamination. On all future packages, the laboratory must identify Aldol condensation products.

Matrix Spike/Matrix Spike Duplicate

The soil MS/MSD exhibited acceptable recoveries. However, the %RPDs for four compounds are above the advisory limits. Heartland ESI will not qualify the sample since the recoveries were within the advisory limits.

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 less than 5% of the data that is qualified.



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.



SUMMARY OF DATA QUALIFICATIONS

<u>SAMPLE ID</u>	<u>ANALYTE ID</u>	<u>DL</u>	<u>QL</u>	<u>SPECIFIC FINDINGS</u>
All samples	TICs	TICs R		1
All samples	2,4-dinitro- phenol dibenzo(a,h)anthracene benzo(g,h,i)perylene	+	J	3
Method blank	2,4-dinitro- phenol hexachlorocyclopentadiene benzo(g,h,i)perylene	+	J	4

- \* 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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-004-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAS81

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. 12 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
100-51-6	Benzyl alcohol	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	bis(2-Chloroisopropyl)ether	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-Di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
65-85-0	Benzoic acid	1900	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

10-004-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAS81

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. 12 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	1900	U
83-32-9-----	Acenaphthene	380	U
51-28-5-----	2,4-Dinitrophenol	1900	U
100-02-7-----	4-Nitrophenol	1900	U
132-64-9-----	Dibenzofuran	380	U
121-14-2-----	2,4-Dinitrotoluene	380	U
84-66-2-----	Diethylphthalate	380	U
7005-72-3-----	4-Chlorophenyl-phenylether	380	U
86-73-7-----	Fluorene	380	U
100-01-6-----	4-Nitroaniline	1900	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1900	U
86-30-6-----	N-Nitrosodiphenylamine (1)	380	U
101-55-3-----	4-Bromophenyl-phenylether	380	U
118-74-1-----	Hexachlorobenzene	380	U
87-86-5-----	Pentachlorophenol	1900	U
85-01-8-----	Phenanthrene	380	U
120-12-7-----	Anthracene	380	U
84-74-2-----	Di-n-Butylphthalate	380	U
206-44-0-----	Fluoranthene	380	U
129-00-0-----	Pyrene	380	U
85-68-7-----	Butylbenzylphthalate	380	U
91-94-1-----	3,3'-Dichlorobenzidine	760	U
56-55-3-----	Benzo(a)anthracene	380	U
218-01-9-----	Chrysene	380	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	86	J
117-84-0-----	Di-n-Octyl phthalate	380	U
205-99-2-----	Benzo(b)fluoranthene	380	U
207-08-9-----	Benzo(k)fluoranthene	380	U
50-32-8-----	Benzo(a)pyrene	380	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	380	U
53-70-3-----	Dibenzo(a,h)anthracene	380	U
191-24-2-----	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev.

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00008

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

10-004-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: DBAS81

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. 12 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.43	6000	JB <i>R</i>
2.	UNKNOWN	31.94	2000	J
3.	SUB-HEXANEDIOIC ACID	32.29	10000	JB <i>R</i>
4.	UNKNOWN	36.39	1000	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-001-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-003

Sample wt/vol: 30.5 (g/mL) G Lab File ID: DBAS82

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. 10 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

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

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

108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
100-51-6	Benzyl alcohol	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	bis(2-Chloroisopropyl)ether	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-Di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
65-85-0	Benzoic acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U

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1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-001-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-003

Sample wt/vol: 30.5 (g/mL) G Lab File ID: DBAS82

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. 10 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

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

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

99-09-2-----	3-Nitroaniline	1800	U
83-32-9-----	Acenaphthene	360	U
51-28-5-----	2,4-Dinitrophenol	1800	U
100-02-7-----	4-Nitrophenol	1800	U
132-64-9-----	Dibenzofuran	360	U
121-14-2-----	2,4-Dinitrotoluene	360	U
84-66-2-----	Diethylphthalate	360	U
7005-72-3-----	4-Chlorophenyl-phenylether	360	U
86-73-7-----	Fluorene	360	U
100-01-6-----	4-Nitroaniline	1800	U
534-52-1-----	4,6-Dinitro-2-methylphenol	1800	U
86-30-6-----	N-Nitrosodiphenylamine (I)	360	U
101-55-3-----	4-Bromophenyl-phenylether	360	U
118-74-1-----	Hexachlorobenzene	360	U
87-86-5-----	Pentachlorophenol	1800	U
85-01-8-----	Phenanthrene	360	U
120-12-7-----	Anthracene	360	U
84-74-2-----	Di-n-Butylphthalate	360	U
206-44-0-----	Fluoranthene	360	U
129-00-0-----	Pyrene	360	U
85-68-7-----	Butylbenzylphthalate	360	U
91-94-1-----	3,3'-Dichlorobenzidine	730	U
56-55-3-----	Benzo(a)anthracene	360	U
218-01-9-----	Chrysene	360	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	90	J
117-84-0-----	Di-n-Octyl phthalate	360	U
205-99-2-----	Benzo(b)fluoranthene	360	U
207-08-9-----	Benzo(k)fluoranthene	360	U
50-32-8-----	Benzo(a)pyrene	360	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	360	U
53-70-3-----	Dibenzo(a,h)anthracene	360	U
191-24-2-----	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev.

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1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

07-001-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-003

Sample wt/vol: 30.5 (g/mL) G Lab File ID: DBAS82

Level: (low/med): LOW Date Received: 03/23/91

% Moisture: not dec. 10 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

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

Number TICs found: 20 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS. NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	<del>UNKNOWN</del>	<del>6.41</del>	<del>6000</del>	<del>JB</del> <i>R1</i>
2.	SUB. CYCLOHEXANEMETHANOL	13.91	300	J
3.	HYDROCARBON (C16H34)	22.02	200	J
4.	HYDROCARBON (C17H34)	23.53	200	J
5.	HYDROCARBON (C19H40)	23.61	200	J
6.	UNKNOWN HYDROCARBON	24.95	200	J
7.	UNKNOWN HYDROCARBON	26.31	200	J
8.	UNKNOWN HYDROCARBON	27.63	200	J
9.	UNKNOWN HYDROCARBON	31.13	200	J
10.	UNKNOWN	31.80	200	J
11.	SUB. AMIDE	31.94	1000	J
12.	<del>SUB. HEXANEDIOIC ACID</del>	<del>32.27</del>	<del>7000</del>	<del>JB</del> <i>R1</i>
13.	UNKNOWN HYDROCARBON	33.25	500	J
14.	UNKNOWN HYDROCARBON	34.24	300	J
15.	UNKNOWN HYDROCARBON	35.30	400	J
16.	UNKNOWN HYDROCARBON	36.46	700	J
17.	UNKNOWN HYDROCARBON	37.78	500	J
18.	UNKNOWN	39.08	300	J
19.	UNKNOWN HYDROCARBON	39.32	300	J
20.	UNKNOWN HYDROCARBON	41.15	300	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-007-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-004

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DBAS85

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. 21 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/Kg</u>	U
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
100-51-6	Benzyl alcohol	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	bis(2-Chloroisopropyl)ether	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-Di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
65-85-0	Benzoic acid	2100	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

07-007-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-004

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DBAS85

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. 21 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----3-Nitroaniline	2100	U
83-32-9-----Acenaphthene	420	U
51-28-5-----2,4-Dinitrophenol	2100	U
100-02-7-----4-Nitrophenol	2100	U
132-64-9-----Dibenzofuran	420	U
121-14-2-----2,4-Dinitrotoluene	420	U
84-66-2-----Diethylphthalate	420	U
7005-72-3-----4-Chlorophenyl-phenylether	420	U
86-73-7-----Fluorene	420	U
100-01-6-----4-Nitroaniline	2100	U
534-52-1-----4,6-Dinitro-2-methylphenol	2100	U
86-30-6-----N-Nitrosodiphenylamine (1)	420	U
101-55-3-----4-Bromophenyl-phenylether	420	U
118-74-1-----Hexachlorobenzene	420	U
87-86-5-----Pentachlorophenol	2100	U
85-01-8-----Phenanthrene	420	U
120-12-7-----Anthracene	420	U
84-74-2-----Di-n-Butylphthalate	49	J
206-44-0-----Fluoranthene	420	U
129-00-0-----Pyrene	420	U
85-68-7-----Butylbenzylphthalate	420	U
91-94-1-----3,3'-Dichlorobenzidine	840	U
56-55-3-----Benzo(a)anthracene	420	U
218-01-9-----Chrysene	420	U
117-81-7-----bis(2-Ethylhexyl)phthalate	110	J
117-84-0-----Di-n-Octyl phthalate	420	U
205-99-2-----Benzo(b)fluoranthene	420	U
207-08-9-----Benzo(k)fluoranthene	420	U
50-32-8-----Benzo(a)pyrene	420	U
193-39-5-----Indeno(1,2,3-cd)pyrene	420	U
53-70-3-----Dibenzo(a,h)anthracene	420	U
191-24-2-----Benzo(g,h,i)perylene	420	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

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00014

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

07-007-T001

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

Client: Naval Weapons Station

Matrix: SOIL Lab Sample ID: 9103L043-004

Sample wt/vol: 30.2 (g/mL) G Lab File ID: DBAS85

Level: (low/med) LOW Date Received: 03/23/91

% Moisture: not dec. 21 dec. Date Extracted: 03/29/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 04/06/91

GPC Cleanup: (Y/N) Y pH: 6.0 Dilution Factor: 1.00

Number TICs found: 6 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	<del>UNKNOWN</del>	<del>6.42</del>	<del>6000</del>	<del>JB</del> <i>R1</i>
2.	UNKNOWN	29.22	600	J
3.	SUB. AMIDE	31.92	900	J
4.	<del>SUB-HEXANEDIOIC ACID</del>	<del>32.25</del>	<del>2000</del>	<del>JB</del> <i>R1</i>
5.	UNKNOWN HYDROCARBON	33.25	300	J
6.	UNKNOWN HYDROCARBON	36.45	200	J

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 91032043  
 LAB: R. F. WESTON - GULF COAST  
 SITE: COLTSNECK NAVAL WEAPONS STATION

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 SMD CCS checklist included with package?

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?

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 ENA analyses and Part C for Pesticide/PCBs.

Does this package contain:

VOA data?

ENA data?

Pesticide/PCB data?

ACTION: Complete corresponding parts of checklist.

PART B: BVA ANALYSES

YES NO N/A

1.0 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).

2.0 Holding Times

2.1 Have any BVA holding times, determined from date of collection to date of extraction, been exceeded?

Samples for BVA 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 Analyzed
			Date Lab Received	Date Extracted	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

*Summary*  
 7-15-91

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("U"), 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").

3.0 Surrogate Recovery (Form II)

3.1 Are the BVA 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 BVA 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 BVA 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 ("U").

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 III?

—  —

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

4.0 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
- b. Med Water
- c. Low Soil
- d. Med Soil

<input type="checkbox"/>	—	<input checked="" type="checkbox"/>
<input type="checkbox"/>	—	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	—	—
<input type="checkbox"/>	—	<input checked="" type="checkbox"/>

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

4.3 How many BVA spike recoveries are outside QC limits?

N/A Water out of 22

0 Soils out of 22 44

*EWJ 7/15/91*

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

N/A Water out of 11

5 Soils out of 11 20

*EWJ 7-15-91*

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
<u>5.0 Blanks (Form IV)</u>			
5.1 Is the Method Blank Summary (Form IV) present?	<input checked="" type="checkbox"/>	___	___
5.2 Frequency of Analysis: for the analysis of BVA 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?	<input checked="" type="checkbox"/>	___	___
5.3 Has a BVA <sup>Method</sup> <del>instrument</del> blank been analyzed for each GS/MS system used.	<input checked="" type="checkbox"/>	___	___
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?	<input checked="" type="checkbox"/>	___	___
ACTION: Use professional judgement to determine the effect on the data.			
<u>6.0 Contamination</u>			
NOTE: "Water blanks" and "distilled water blanks" are validated like any other sample and are <u>not</u> 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 BVAs? When applied as described below, the contaminant concentration in these blanks are multiplied by the sample Dilution Factor.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	___
6.2 Do any field/rinse blanks have positive BVA results (TCL and/or TIC)?	___	<input checked="" type="checkbox"/>	___
ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)			
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.			

*Not Submitted.*

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

YES NO N/A

	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?

YES  NO  N/A  
*Not submitted*

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.

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)?

YES  NO  N/A

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

YES  NO  N/A

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

YES  NO  N/A

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.

				YES	NO	N/A
DATE	TIME	INSTRUMENT	SAMPLE NUMBERS			
		Blank/MS/MSD				
		no action				

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

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.

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".

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

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	<input checked="" type="checkbox"/>	—	—
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	<input checked="" type="checkbox"/>	—	—
c. Blanks	<input checked="" type="checkbox"/>	—	—
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	<input checked="" type="checkbox"/>	—	—
8.4 Is chromatographic performance acceptable with respect to:			
Baseline stability	<input checked="" type="checkbox"/>	—	—
Resolution	<input checked="" type="checkbox"/>	—	—
Peak shape	<input checked="" type="checkbox"/>	—	—
Full-scale graph (attenuation)	<input checked="" type="checkbox"/>	—	—
Other: _____	<input type="checkbox"/>	—	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	—	—
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?	<input checked="" type="checkbox"/>	—	—
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?	<input checked="" type="checkbox"/>	—	—
8.8 Do sample and standard relative ion intensities agree within 20%?	<input checked="" type="checkbox"/>	—	—
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).			

*EMW*  
 7-15-91

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 CROs adjusted to reflect sample dilutions and, for soils, sample moisture?

00024

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 BVA fraction?

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Are response factors stable for BVAs 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 BVA 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").

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.)

YES	NO	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the ENA fraction?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

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

*EMM*  
*2-15-91*

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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").

13.3 Do any continuing calibration standard compounds have a RRF < 0.05?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------

ACTION: Circle all outliers in red.

ACTION: If any ENA 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").

13.4 Do any compounds have a % difference between initial and continuing calibration RRF > 25%?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

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

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

YES NO N/A

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".

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
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

*SM*  
2-15-91

(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.

5) Field Duplicates

YES NO N/A

15.1 Were any field duplicates submitted for BVA analysis?

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

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.

*Not identified or Submitted*

TOTAL REVIEW

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

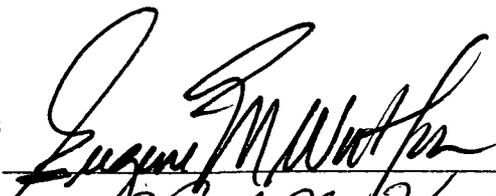
Case No. 91032043 SDG No. — LABORATORY GUIF SITE COLTSNECK  
COAST

DATA ASSESSMENT:

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

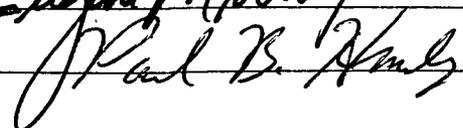
All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "R" (unusable), or "NJ" (presumptive evidence for the presence of the material at an estimated value). All action is detailed on the attached sheets.

Reviewer's  
Signature:



Date: 7/12/1991

Verified By:



Date: 7/18/1991

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*

*[Signature]*  
7-12-91

ATTACHMENT 1  
SOP NO. HW-6

## 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

*916B0151-MB1 - TIC #1 is Aldol cond. product.*

*10-004-T001 - R TIC #1,3*

*07-001-T001 - R TIC #1,12*

*07-007-T001 - R TIC #1,4*

## B) Field or rinse blank contamination

*None submitted*

## C) Water blank contamination

*See above*

## D) Trip blank contamination

*None submitted*

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 - Blank MS/MSD analyzed  
out of 12-hour clock.*

*EMW  
7-15-91*

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*

*EW*  
*7-15-91*

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 dibutylchlorodate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

\* Inst. Cal. 4-3-91 GCL#4 - No Samples

Indeno(1,2,3-cd) pyrene - 39.0%, benzo(g,h,i)perylene 36.7%

\* Cont Cal 4-6-91 GCL#4 Samples 10-004-T001, 07-001-T001, MS, MSD  
07-007-T001

J pos (>25% - <50%) 2,4-dinitrophenol, dibenzo(a,h)anthracene,  
benzo(g,h,i)perylene

2,4,6-Tribromophenol (surv) - 27.4% - no action - all surrogate recoveries were acceptable in the Samples.

\* Cont Cal 4-7-91 GCL#4 Samples - Method blanks, Blank MS/MSD

J pos (>25% - <50%) Hexa chloro cyclopentadiene, 2,4 dinitrophenol,  
benzo(g,h,i)perylene

2,4,6-Tribromophenol (surv) - 28.8% - no action - all surrogate recoveries were acceptable.

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*  
*7-15-91*

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  $\pm 30$  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.

*No Action*

*SMW*  
*7-15-91*

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  $\pm 0.06$  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 is needed for the TCL identification. However, Gulf Coast did not identify Aldof condensation products. All were rejected through ducto blank contamination.*

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.

Sample 07-001-7000 MS/MSD has four compds with  $\pm$ RPDs above QC limits. However, the recoveries are acceptable, so Heartland ESI will not take any action on the samples. The blank MS/MSD contained one compd. with a  $\pm$ RPD that was slightly high. No Action.

DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

*None —*

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

*System performance and data package  
acceptable - See narrative*

12. CONTRACT PROBLEMS  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.

*None .*

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 91032043

LABORATORY R.F. WESTON GULF COAST

SDG NO. \_\_\_\_\_

DATA USER R.F. WESTON

SOW 2/88 CUP / REGION II

REVIEW COMPLETION DATE 7-12-91

NO. OF SAMPLES \_\_\_\_\_ WATER \_\_\_\_\_ SOIL \_\_\_\_\_ OTHER \_\_\_\_\_

REVIEWER [ ] ESD [ ] ESAT  OTHER, CONTRACT/CONTRACTOR HEARTLAND ESI

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	_____	<u>0</u>	_____	_____
2. GC-MS TUNE/ GC PERFORMANCE	_____	<u>0</u>	_____	_____
3. INITIAL CALIBRATIONS	_____	<u>0</u>	_____	_____
4. CONTINUING CALIBRATIONS	_____	<u>0</u>	_____	_____
5. FIELD BLANKS (*F = not applicable)	_____	<u>F</u>	_____	_____
6. LABORATORY BLANKS	_____	<u>0</u>	_____	_____
7. SURROGATES	_____	<u>0</u>	_____	_____
8. MATRIX SPIKE/DUPLICATES	_____	<u>0</u>	_____	_____
9. REGIONAL QC (*F = not applicable)	_____	<u>F</u>	_____	_____
10. INTERNAL STANDARDS	_____	<u>0</u>	_____	_____
11. COMPOUND IDENTIFICATION	_____	<u>0</u>	_____	_____
12. COMPOUND QUANTITATION	_____	<u>0</u>	_____	_____
13. SYSTEM PERFORMANCE	_____	<u>0</u>	_____	_____
14. OVERALL ASSESSMENT	_____	<u>0</u>	_____	_____

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: Very good data package

AREAS OF CONCERN: [Crossed out]

REJECTION SUMMARY FORM

(No. of Compounds/No. of Fractions (Samples))

SOP NO: HW-6  
Date: February 1989

Case #: 9103043

Type of Review: DATA REVIEW II DATA VALIDATION Date: 2-12-91

Project: COLTSANECK NAVAL WEAPONS STATION

Lab Name: A.F. WESTON GULF COAST

Reviewer's Initials: EMW

Number of Samples: \_\_\_\_\_

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)	0	0	0	0	0	0	3	0/45
H/N (50)	0	0	0	0	0	0	3	0/150
VOA (35)								
PEST (20)								
ICM (7)								
TCDD (1)								

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)	0	0	0	0	0	0	3	0/45
H/N (50)	0	0	0	0	0	0	3	0/150
VOA (35)								
PEST (20)								
ICM (7)								
TCDD (1)								

00041



# HEARTLAND ENVIRONMENTAL SERVICES, INC.

P.O. BOX 163 ST. PETERS MO 63376  
(314) 278-8232

REGION II SVOA DATA VALIDATION  
NAVAL WEAPONS STATION - COLTSNECK  
ROY F. WESTON CASE 9103L090

Coltsneck ID R.F. Weston ID

Water Samples (all)

MW10-006-M001 9103L090-001

PREPARED BY: *Eugene M. Watson*  
Eugene M. Watson

DATE: 8-18-91

VERIFIED BY: *Paul B. Humburg*  
Paul B. Humburg

DATE: 7/18/91

00001



## 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 were met per the 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.

The one method blank that was extracted and analyzed did not exhibit contamination. No qualifications are needed.

### 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.

In addition, the form 7s contained transcription errors for three (3) of the surrogate compounds, which resulted in incorrect %Ds. Heartland ESI contacted the laboratory and had them resubmit new form 7s that reflected the correct %Ds.



DATA ASSESSMENT AND NARRATIVE

PAGE - 2

Calibrations - %RSDs and %Ds (continued)

Specific findings:

1. The initial calibration on 04/03/91 on instrument GCL #4 contained the following compounds above 30%RSD. Samples were not analyzed so qualifications are not necessary.
  - a) indeno(1,2,3-c,d)pyrene
  - b) benzo(g,h,i)perylene
  
2. For sample MW10-006-M001, the continuing calibration on 04/10/91 on instrument GCL #4 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
  - a) benzoic acid
  - b) 2,4-dinitrophenol
  - c) hexachlorocyclopentadiene
  - d) indeno(1,2,3-c,d)pyrene

Surrogates

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

Internal Standards

All of the samples exhibited EICP internal standard areas which were within QA/QC limits. No qualifications are needed.

Compound Identification/Quantitation

All of the spectra submitted by the laboratory met the Region II guidelines. However, the laboratory did not identify two TICs that are VOA TCLs. These two (2) TICs will require qualification.

Specific Findings:

3. For sample MW10-006-M001, TICs #1 and #2 are VOA TCLs. Reject these two (2) TICs.

Matrix Spike/Matrix Spike Duplicate

Due to the absence of a sample MS/MSD, the laboratory extracted and analyzed a blank MS/MSD. All recoveries and %RPDs were acceptable. Heartland ESI will accept the blank MS/MSD analysis.

System Performance and Overall Assessment

The overall performance of the GC/MS system was acceptable. The quality of the data package was very good. Heartland ESI did not find any problems with this data package.

00003



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.



SUMMARY OF DATA QUALIFICATIONS

<u>SAMPLE ID</u>	<u>ANALYTE ID</u>	<u>DL</u>	<u>QL</u>	<u>SPECIFIC FINDINGS</u>
MW10-006-M001	2,4-dinitro- phenol benzoic acid hexachlorocyclopentadiene indeno(1,2,3-c,d)pyrene	+	J	2
MW10-006-M001	TICs #1 & #2	+	R	3

- \* 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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

MW10-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L090-001

Sample wt/vol: 950 (g/mL) ML Lab File ID: DBAT59

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

% Moisture: not dec.        dec. Date Extracted: 04/02/91

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	10	U
111-44-4-----	bis(2-Chloroethyl)ether	10	U
95-57-8-----	2-Chlorophenol	10	U
541-73-1-----	1,3-Dichlorobenzene	10	U
106-46-7-----	1,4-Dichlorobenzene	10	U
100-51-6-----	Benzyl alcohol	10	U
95-50-1-----	1,2-Dichlorobenzene	10	U
95-48-7-----	2-Methylphenol	10	U
108-60-1-----	bis(2-Chloroisopropyl)ether	10	U
106-44-5-----	4-Methylphenol	10	U
621-64-7-----	N-Nitroso-Di-n-propylamine	10	U
67-72-1-----	Hexachloroethane	10	U
98-95-3-----	Nitrobenzene	10	U
78-59-1-----	Isophorone	10	U
88-75-5-----	2-Nitrophenol	10	U
105-67-9-----	2,4-Dimethylphenol	10	U
65-85-0-----	Benzoic acid	52	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	52	U
91-58-7-----	2-Chloronaphthalene	10	U
88-74-4-----	2-Nitroaniline	52	U
131-11-3-----	Dimethylphthalate	10	U
208-96-8-----	Acenaphthylene	10	U
606-20-2-----	2,6-Dinitrotoluene	10	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

MW10-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L090-001

Sample wt/vol: 950 (g/mL) ML Lab File ID: DBAT59

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

% Moisture: not dec.      dec. Date Extracted: 04/02/91

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	52	U
83-32-9-----	Acenaphthene	10	U
51-28-5-----	2,4-Dinitrophenol	52	U
100-02-7-----	4-Nitrophenol	52	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	52	U
534-52-1-----	4,6-Dinitro-2-methylphenol	52	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	52	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	21	U
56-55-3-----	Benzo(a)anthracene	10	U
218-01-9-----	Chrysene	10	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	2	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

FORM 1 SV-2

12/88 Rev.

20

00007



PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 9103L 090

LAB: R.E. WESTON - GULF COAST

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 ENA analyses and Part C for Pesticide/PCBs.

Does this package contain:

VOA data?

ENA data?

Pesticide/PCB data?

ACTION: Complete corresponding parts of checklist.

PART B: BNA ANALYSES

YES NO N/A

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 Analyzed
			Date Lab Received	Date Extracted	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

*EMM*  
 7-11-91

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("U"), 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").

3.0 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

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	-------------------------------------

If yes, were samples reanalyzed?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Were method blanks reanalyzed?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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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 ("U").

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".

4.0 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  \_ \_
- 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.

*Blank Spike*

4.3 How many BVA spike recoveries are outside QC limits?

<u>Water</u>	<u>Soils</u>
<u>0</u> out of 22	<u>N/A</u> out of 22

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

<u>Water</u>	<u>Soils</u>
<u>0</u> out of 11	<u>N/A</u> 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.

5.0 Blanks (Form IV)

YES NO N/A

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 <sup>Method</sup> ~~instrument~~ 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 ENAs? 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.

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

YES NO N/A

Common Phthalate Esters	Sample conc > CRQL but < 10x blank	Sample conc < CRQL & is < 10x blank value	Sample conc > CRQL value & >10x blank value
	Flag sample result with a 'U'; cross out 'B' flag	Reject sample result and report CRQL; cross out 'B' flag	No qualification is needed
Other Contaminants	Sample conc > CRQL but < 5x blank	Sample conc < CRQL & is < 5x blank value	Sample conc > CRQL value & > 5 blank value
	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.

	YES	NO	N/A
DATE			
TIME			
INSTRUMENT			
SAMPLE NUMBERS			

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

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

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.

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.)  YES  NO  N/A

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.)  YES  NO  N/A

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

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

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

8.0 Target Compound List (TCL) Analytes

8.1 Are the Organic Analysis Data Sheets (Form I BVA) present with required header information on each page, for each of the following:

- a. Samples and/or fractions as appropriate  YES  NO  N/A
- b. Matrix spikes and matrix spike duplicates  YES  NO  N/A
- c. Blanks  YES  NO  N/A

	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	<input checked="" type="checkbox"/>	—	—
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	<input checked="" type="checkbox"/>	—	—
c. Blanks	<input checked="" type="checkbox"/>	—	—
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	—
8.4 Is chromatographic performance acceptable with respect to:	<i>Quant ion</i>		
Baseline stability	<input checked="" type="checkbox"/>	—	—
Resolution	<input checked="" type="checkbox"/>	—	—
Peak shape	<input checked="" type="checkbox"/>	—	—
Full-scale graph (attenuation)	<input checked="" type="checkbox"/>	—	—
Other: _____	<input type="checkbox"/>	—	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	—	—
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?	<input checked="" type="checkbox"/>	—	—
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?	<input checked="" type="checkbox"/>	—	—
8.8 Do sample and standard relative ion intensities agree within 20%?	<input checked="" type="checkbox"/>	—	—
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
<b>9.0 Tentatively Identified Compounds (TIC)</b>			
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?	<input checked="" type="checkbox"/>	—	—
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:	<input checked="" type="checkbox"/>	—	—
a. Samples and/or fractions as appropriate	<input checked="" type="checkbox"/>	—	—
b. Blanks	<input checked="" type="checkbox"/>	—	—
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 <u>identified</u> 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)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	—
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?	<input checked="" type="checkbox"/>	—	—
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	<input checked="" type="checkbox"/>	—	—
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?

—	<input checked="" type="checkbox"/>	—
<input type="checkbox"/>	—	<input checked="" type="checkbox"/>

	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?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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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 BVA fraction?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Are response factors stable for BVAs over the concentration range of the calibration (RSD <30%)?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------

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?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------

ACTION: Circle all outliers in red.

ACTION: If any BVA 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.)	—	<input checked="" type="checkbox"/>	—

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)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BVA fraction?	<input checked="" type="checkbox"/>	—	—
---	-------------------------------------	---	---

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?	<input checked="" type="checkbox"/>	—	—
--	-------------------------------------	---	---

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

*EW*  
*4-11-91*

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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").

13.3 Do any continuing calibration standard compounds have a RRF < 0.05?	—	<input checked="" type="checkbox"/>	—
--	---	-------------------------------------	---

ACTION: Circle all outliers in red.

ACTION: If any BVA 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").

13.4 Do any compounds have a % difference between initial and continuing calibration RRF > 25%?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	—
---	-------------------------------------	--------------------------	---

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

% DIFFERENCE			YES	NO	N/A
25-50	50-90	>90			
'J' positive results, no action for non detects	'J' positive results, 'U' 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".

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
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

*9 mm  
7-11-91*

(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.

5. Field Duplicates

YES NO N/A

15.1 Were any field duplicates submitted for BVA analysis?

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

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.

*Not identified or  
Submitted*

TOTAL REVIEW

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

Case No. 91036090 SDG No.      LABORATORY GULF COAST SITE COLTSNECK

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: 7/11/91  
Verified By: Paul B. Hardy Date: 7/18/91

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*  
*7-11-91*

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

*None*

B) Field or rinse blank contamination

*Not submitted or identified.*

C) Water blank contamination

*None*

D) Trip blank contamination

*Not submitted or identified*

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*

*ERM*  
*7-11-91*

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*

*SMW*  
*7-11-91*

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 4-3-91 - No Samples

Indeno (1,2,3-cd) pyrene 39.0%

Benzo (g,h,i) perylene 36.7%

\* Cont Cal 4-10-91 - MW10-006-M001

Pos (>25% - <50%) benzoic acid, hexachloro cyclopentadiene, 2,4-Dinitro phenol, Indeno (1,2,3-c,d) pyrene.

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*  
*7-11-91*

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  $\pm 30$  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.

*No action*

*EWJ  
7-11-91*

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  $\pm 0.06$  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.

*Sample MW10-006-M001*

*Reject TIC #1 and #2*

*TIC #1 - methyl benzene (toluene)*

*TIC #2 - ethyl benzene or dimethyl benzene (xylene)*

*VOA TIC compds.*

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.

*Due to the absence of a MS/MSD, the laboratory analyzed a blank MS/MSD that was extracted with the sample. All recoveries and RSD's are acceptable - No action needed*

*Edw  
7-11-91*

DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

*None*

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

*very good - see narrative*

12. CONTRACT PROBLEMS ~~φ~~ 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.

*None.*

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 91036090

LABORATORY R.L. WESTON GULF COAST

SDG NO. \_\_\_\_\_

DATA USER R.L. WESTON

SOW 2/88 CAP / REGION II

REVIEW COMPLETION DATE 7-11-91

NO. OF SAMPLES \_\_\_\_\_ WATER \_\_\_\_\_ SOIL \_\_\_\_\_ OTHER \_\_\_\_\_

REVIEWER  ESD  ESAT  OTHER, CONTRACT/CONTRACTOR HEARTLAND ESI

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	_____	0	_____	_____
2. GC-MS TUNE/ GC PERFORMANCE	_____	0	_____	_____
3. INITIAL CALIBRATIONS	_____	0	_____	_____
4. CONTINUING CALIBRATIONS	_____	0	_____	_____
5. FIELD BLANKS ("F" = not applicable)	_____	F	_____	_____
6. LABORATORY BLANKS	_____	0	_____	_____
7. SURROGATES	_____	0	_____	_____
8. MATRIX SPIKE/DUPLICATES	_____	0	_____	_____
9. REGIONAL QC ("F" = not applicable)	_____	F	_____	_____
10. INTERNAL STANDARDS	_____	0	_____	_____
11. COMPOUND IDENTIFICATION	_____	0	_____	_____
12. COMPOUND QUANTITATION	_____	0	_____	_____
13. SYSTEM PERFORMANCE	_____	0	_____	_____
14. OVERALL ASSESSMENT	_____	0	_____	_____

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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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

SOP NO: HW-6  
Date: February 1989

Case #: 91036090

Type of Review: DATA REVISION II DATA VALIDATION Date: 7-11-91

Project: CALIFORNIA MARINE WEAPONS STATION

Lab Name: R. F. WESTON - GULF COAST

Reviewer's Initials: EMW

Number of Samples: \_\_\_\_\_

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)	0	0	0	0	0	0	1	1/15
H/N (50)	0	0	0	0	0	0	1	1/50
VOA (35)								
PEST (20)								
ICB (7)								
ICUD (1)								

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)	0	0	0	0	0	0	1	1/15
H/N (50)	0	0	0	0	0	0	1	1/50
VOA (35)								
PEST (20)								
ICB (7)								
ICUD (1)								



# HEARTLAND ENVIRONMENTAL SERVICES, INC.

P.O. BOX 163 ST. PETERS MO 63376  
(314) 278-8232

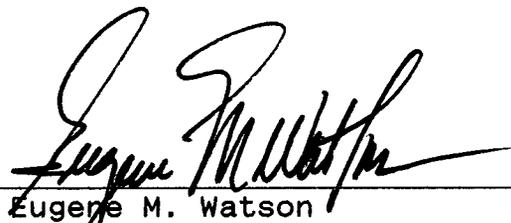
REGION II SVOA DATA VALIDATION  
NAVAL WEAPONS STATION - COLTSNECK  
ROY F. WESTON CASE 9103L008

Colt neck ID    R.F. Weston ID    Coltsneck ID    R.F. Weston ID

Water Samples (all)

19-001-M001	9103L008-001	19-001-M001MS	9103L008-001MS
19-001-M001MSD	9103L008-001MSD	19-002-M001	9103L008-002
19-003-M001	9103L008-003	19-003-M101	9103L008-004
19-003-M201	9103L008-005	19-004-M001	9103L008-006
19-005-M001	9103L008-007	19-006-M001	9103L008-008
04-001-M001	9103L008-009	04-002-M001	9103L008-010
04-002-M101	9103L008-011	04-005-M001	9103L008-012
04-006-M001	9103L008-013	03-001-M001	9103L008-015
03-002-M001	9103L008-016	03-003-M001	9103L008-017
03-004-M001	9103L008-018	03-005-M001	9103L008-019
03-006-M001	9103L008-020	03-007-M001	9103L008-021
03-007-M201	9103L008-022	04-002-M201	9103L008-023

PREPARED BY:

  
Eugene M. Watson

DATE:

7-18-91

VERIFIED BY:

  
Paul B. Humburg

DATE:

7/18/91

00001



## 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 were met per the 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.

The two method blanks that were extracted and analyzed did not exhibit any contamination except for one (1) TIC. The TIC found in one of the blanks did not appear in any of the samples. No qualifications are needed.

### 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.

In addition, the form 7s contained transcription errors for three (3) of the surrogate compounds, which resulted in incorrect %Ds. Heartland ESI contacted the laboratory and had them resubmit new form 7s that reflected the correct %Ds.



DATA ASSESSMENT AND NARRATIVE

PAGE - 2

Calibrations - %RSDs and %Ds (continued)

Specific findings:

1. The initial calibration on 04/03/91 on instrument GCL #4 contained the following compounds above 30%RSD. Samples were not analyzed so qualifications are not necessary.
    - a) indeno(1,2,3-c,d)pyrene
    - b) benzo(g,h,i)perylene
  
  2. For samples SBLKB0134-MB1, 19-002-M001, and 19-003-M001, the continuing calibration on 04/03/91 on instrument GCL #4 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
    - a) indeno(1,2,3-c,d)pyrene
    - b) benzo(g,h,i)perylene
  
  3. For samples SBLKB0136-MB1, 04-002-M001, and 04-002-M101, the continuing calibration on 04/03/91 on instrument GCL #1 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
    - a) indeno(1,2,3-c,d)pyrene
    - b) 2,4-dinitrophenol
    - c) dibenzo(a,h)anthracene
  
  4. For samples SBLKB0136-MB1, 04-002-M001, and 04-002-M101, the continuing calibration on 04/03/91 on instrument GCL #1 contained the following compounds above 50% D, but less than 90% D. Qualify all positive result for these compounds as estimated (J) and all non detect results as estimated (UJ).
    - a) benzo(g,h,i)perylene
    - b) benzyl alcohol
  
  5. For samples 04-005-M001, 04-006-M001, 03-001-M001, 03-002-M001, 03-003-M001, 03-004-M001, 03-005-M001, 03-006-M001, 03-007-M001, 03-007-M201, and 04-002-M201, the continuing calibration on 04/04/91 on instrument GCL #1 contained the following compounds above 25% D, but less than 50% D. Qualify all positive result for these compounds as estimated (J).
    - a) indeno(1,2,3-c,d)pyrene
    - b) benzyl alcohol
    - c) dibenzo(a,h)anthracene
    - d) nitrobenzene
    - e) nitrobenzene-d5 (surrogate)
- \* The data will not be qualified for the surrogate nitrobenzene-d5. All of the surrogate recoveries for the associated samples were within QA/QC limits.

00003



DATA ASSESSMENT AND NARRATIVE

PAGE - 3

Calibrations - %RSDs and %Ds (continued)

6. For samples 04-005-M001, 04-006-M001, 03-001-M001, 03-002-M001, 03-003-M001, 03-004-M001, 03-005-M001, 03-006-M001, 03-007-M001, 03-007-M201, and 04-002-M201, the continuing calibration on 04/04/91 on instrument GCL #1 contained the following compounds above 50% D, but less than 90% D. Qualify all positive result for these compounds as estimated (J) and all non detect results as estimated (UJ).
- a) benzo(g,h,i)perylene

Surrogates

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

Internal Standards

All of the EICP internal standard areas for all samples, with the exception of sample 03-005-M001, were with QA/QC limits. Sample 03-005-M001 was not reanalyzed per the CLP protocol, so Heartland ESI must qualify the data.

Specific Findings:

7. For sample 03-005-M001, the following internal standards exhibited EICP areas that were above the upper 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) 1,4-dichlorobenzene-d4
  - b) naphthalene-d8
  - c) acenaphthene-d10
  - d) phenanthrene-d10

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 MS/MSD exhibited acceptable recoveries and %RPDs. However, due to the number of samples present in this case (>20), another sample MS/MSD should have been extracted and analyzed. Heartland ESI will not take any action for this deficiency since blank spikes were extracted and analyzed with the samples.



DATA ASSESSMENT AND NARRATIVE

PAGE - 4

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 less than 5% of the data that is qualified. In addition, Gulf Coast Laboratories must reanalyze all samples that do not meet EICP area criteria for internal standards.



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.



SUMMARY OF DATA QUALIFICATIONS

<u>SAMPLE ID</u>	<u>ANALYTE ID</u>	<u>DL</u>	<u>QL</u>	<u>SPECIFIC FINDINGS</u>
19-002-M001, 19-003-M001	indeno (1,2,3-c,d)pyrene benzo(g,h,i)perylene	+	J	2
04-002-M001, 04-002-M101	indeno (1,2,3-c,d)pyrene 2,4-dinitrophenol dibenzo(a,h)anthracene	+	J	3
04-002-M001, 04-002-M101	benzo(g,h,i)- perylene benzyl alcohol	+/-	J/UJ	4
04-005-M001, 04-006-M001 03-001-M001, 03-002-M001 03-003-M001, 03-004-M001 03-005-M001, 03-006-M001 03-007-M001, 03-007-M201 04-002-M201	indeno (1,2,3-cd)pyrene benzyl alcohol dibenzo(a,h)anthracene nitrobenzene	+	J	5
04-005-M001, 04-006-M001 03-001-M001, 03-002-M001 03-003-M001, 03-004-M001 03-005-M001, 03-006-M001 03-007-M001, 03-007-M201 04-002-M201	benzo(g,h,i) perylene	+/-	J/UJ	6
03-005-M001	all compounds associated with the internal standards: 1,4-dichlorobenzene-d4 naphthalene-d8 acenaphthene-d10 phenanthrene-d10	+/-	J/UJ	7

\* 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

18  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS40

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	ug/L
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
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

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS40

Level: (low/med): LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
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 I SV-2

12/88 Rev.

58

00009

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

19-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-001

Sample wt/vol: 990 (g/mL) ML Lab File ID: DBAS40

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 8 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	32.19	8	J
2.	UNKNOWN HYDROCARBON	33.22	10	J
3.	UNKNOWN HYDROCARBON	34.24	20	J
4.	UNKNOWN HYDROCARBON	35.28	20	J
5.	UNKNOWN HYDROCARBON	36.43	20	J
6.	UNKNOWN HYDROCARBON	37.75	20	J
7.	UNKNOWN HYDROCARBON	39.30	9	J
8.	UNKNOWN HYDROCARBON	41.12	5	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-002

Sample wt/vol: 900 (g/mL) ML Lab File ID: DBAS25

Level: (low/med) LOW Date Received: 03/22/91

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

Extraction: (SepF/Cont/Sonic) SEPF Date Analyzed: 04/03/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	ug/L
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	bis(2-Chloroisopropyl)ether	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic acid	56	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	1	J
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	56	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	56	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-002

Sample wt/vol: 900 (g/mL) ML Lab File ID: DBAS25

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	56	U
83-32-9-----	Acenaphthene	11	U
51-28-5-----	2,4-Dinitrophenol	56	U
100-02-7-----	4-Nitrophenol	56	U
132-64-9-----	Dibenzofuran	11	U
121-14-2-----	2,4-Dinitrotoluene	11	U
84-66-2-----	Diethylphthalate	11	U
7005-72-3-----	4-Chlorophenyl-phenylether	11	U
86-73-7-----	Fluorene	11	U
100-01-6-----	4-Nitroaniline	56	U
534-52-1-----	4,6-Dinitro-2-methylphenol	56	U
86-30-6-----	N-Nitrosodiphenylamine (1)	11	U
101-55-3-----	4-Bromophenyl-phenylether	11	U
118-74-1-----	Hexachlorobenzene	11	U
87-86-5-----	Pentachlorophenol	56	U
85-01-8-----	Phenanthrene	11	U
120-12-7-----	Anthracene	11	U
84-74-2-----	Di-n-Butylphthalate	11	U
206-44-0-----	Fluoranthene	11	U
129-00-0-----	Pyrene	11	U
85-68-7-----	Butylbenzylphthalate	11	U
91-94-1-----	3,3'-Dichlorobenzidine	22	U
56-55-3-----	Benzo(a)anthracene	11	U
218-01-9-----	Chrysene	11	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	2	J
117-84-0-----	Di-n-Octyl phthalate	11	U
205-99-2-----	Benzo(b)fluoranthene	11	U
207-08-9-----	Benzo(k)fluoranthene	11	U
50-32-8-----	Benzo(a)pyrene	11	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	11	U
53-70-3-----	Dibenzo(a,h)anthracene	11	U
191-24-2-----	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

73

00012

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

19-002-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-002

Sample wt/vol: 900 (g/mL) ML

Lab File ID: DBAS25

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/03/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	36.32	7	J/J
2.	UNKNOWN HYDROCARBON	36.40	6	J/J

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-003-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-003

Sample wt/vol: 950 (g/mL) ML Lab File ID: DBAS26

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	U
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	52	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	52	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	52	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-003-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-003

Sample wt/vol: 950 (g/mL) ML Lab File ID: DBAS26

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	52	U
83-32-9-----	Acenaphthene	10	U
51-28-5-----	2,4-Dinitrophenol	52	U
100-02-7-----	4-Nitrophenol	52	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	52	U
534-52-1-----	4,6-Dinitro-2-methylphenol	52	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	52	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	21	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  
FORM 1 SV-2

12/88 Rev. 84

00015

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

19-003-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-003

Sample wt/vol: 950 (g/mL) ML Lab File ID: DBAS26

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-003-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-004

Sample wt/vol: 860. (g/mL) ML Lab File ID: DBAS43

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

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	58	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	58	U
91-58-7-----	2-Chloronaphthalene	12	U
88-74-4-----	2-Nitroaniline	58	U
131-11-3-----	Dimethylphthalate	12	U
208-96-8-----	Acenaphthylene	12	U
606-20-2-----	2,6-Dinitrotoluene	12	U

IC  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-003-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-004

Sample wt/vol: 860 (g/mL) ML Lab File ID: DBAS43

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	58	U
83-32-9-----	Acenaphthene	12	U
51-28-5-----	2,4-Dinitrophenol	58	U
100-02-7-----	4-Nitrophenol	58	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	58	U
534-52-1-----	4,6-Dinitro-2-methylphenol	58	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	58	U
85-01-8-----	Phenanthrene	12	U
120-12-7-----	Anthracene	12	U
84-74-2-----	Di-n-Butylphthalate	12	U
206-44-0-----	Fluoranthene	12	U
129-00-0-----	Pyrene	12	U
85-68-7-----	Butylbenzylphthalate	12	U
91-94-1-----	3,3'-Dichlorobenzidine	23	U
56-55-3-----	Benzo(a)anthracene	12	U
218-01-9-----	Chrysene	12	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	12	U
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.

92

00018

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

19-003-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-004

Sample wt/vol: 860 (g/mL) ML Lab File ID: DBAS43

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-003-M201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-005

Sample wt/vol: 880 (g/mL) ML Lab File ID: DBAS44

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) ug/L

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

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-003-M201

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-005

Sample wt/vol: 880 (g/mL) ML

Lab File ID: DBAS44

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	57	U
83-32-9-----	Acenaphthene	11	U
51-28-5-----	2,4-Dinitrophenol	57	U
100-02-7-----	4-Nitrophenol	57	U
132-64-9-----	Dibenzofuran	11	U
121-14-2-----	2,4-Dinitrotoluene	11	U
84-66-2-----	Diethylphthalate	11	U
7005-72-3-----	4-Chlorophenyl-phenylether	11	U
86-73-7-----	Fluorene	11	U
100-01-6-----	4-Nitroaniline	57	U
534-52-1-----	4,6-Dinitro-2-methylphenol	57	U
86-30-6-----	N-Nitrosodiphenylamine (1)	11	U
101-55-3-----	4-Bromophenyl-phenylether	11	U
118-74-1-----	Hexachlorobenzene	11	U
87-86-5-----	Pentachlorophenol	57	U
85-01-8-----	Phenanthrene	11	U
120-12-7-----	Anthracene	11	U
84-74-2-----	Di-n-Butylphthalate	11	U
206-44-0-----	Fluoranthene	11	U
129-00-0-----	Pyrene	11	U
85-68-7-----	Butylbenzylphthalate	11	U
91-94-1-----	3,3'-Dichlorobenzidine	23	U
56-55-3-----	Benzo(a)anthracene	11	U
218-01-9-----	Chrysene	11	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	11	U
117-84-0-----	Di-n-Octyl phthalate	11	U
205-99-2-----	Benzo(b)fluoranthene	11	U
207-08-9-----	Benzo(k)fluoranthene	11	U
50-32-8-----	Benzo(a)pyrene	11	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	11	U
53-70-3-----	Dibenzo(a,h)anthracene	11	U
191-24-2-----	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev. 99

00021

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

19-003-M201

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-005

Sample wt/vol: 880 (g/mL) ML

Lab File ID: DBAS44

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-004-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-006

Sample wt/vol: 900 (g/mL) ML Lab File ID: DBAS45

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	bis(2-Chloroisopropyl)ether	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic acid	56	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	56	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	56	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-004-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-006

Sample wt/vol: 900 (g/mL) ML Lab File ID: DBAS45

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2	-----3-Nitroaniline	56	U
83-32-9	-----Acenaphthene	11	U
51-28-5	-----2,4-Dinitrophenol	56	U
100-02-7	-----4-Nitrophenol	56	U
132-64-9	-----Dibenzofuran	11	U
121-14-2	-----2,4-Dinitrotoluene	11	U
84-66-2	-----Diethylphthalate	11	U
7005-72-3	-----4-Chlorophenyl-phenylether	11	U
86-73-7	-----Fluorene	11	U
100-01-6	-----4-Nitroaniline	56	U
534-52-1	-----4,6-Dinitro-2-methylphenol	56	U
86-30-6	-----N-Nitrosodiphenylamine (1)	11	U
101-55-3	-----4-Bromophenyl-phenylether	11	U
118-74-1	-----Hexachlorobenzene	11	U
87-86-5	-----Pentachlorophenol	56	U
85-01-8	-----Phenanthrene	11	U
120-12-7	-----Anthracene	11	U
84-74-2	-----Di-n-Butylphthalate	11	U
206-44-0	-----Fluoranthene	11	U
129-00-0	-----Pyrene	11	U
85-68-7	-----Butylbenzylphthalate	11	U
91-94-1	-----3,3'-Dichlorobenzidine	22	U
56-55-3	-----Benzo(a)anthracene	11	U
218-01-9	-----Chrysene	11	U
117-81-7	-----bis(2-Ethylhexyl)phthalate	11	U
117-84-0	-----Di-n-Octyl phthalate	11	U
205-99-2	-----Benzo(b)fluoranthene	11	U
207-08-9	-----Benzo(k)fluoranthene	11	U
50-32-8	-----Benzo(a)pyrene	11	U
193-39-5	-----Indeno(1,2,3-cd)pyrene	11	U
53-70-3	-----Dibenzo(a,h)anthracene	11	U
191-24-2	-----Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

106

00024

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

19-004-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-006

Sample wt/vol: 900 (g/mL) ML Lab File ID: DBAS45

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

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



1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-005-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-007

Sample wt/vol: 900 (g/mL) ML

Lab File ID: DBAS46

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.      dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	56	U
83-32-9-----	Acenaphthene	11	U
51-28-5-----	2,4-Dinitrophenol	56	U
100-02-7-----	4-Nitrophenol	56	U
132-64-9-----	Dibenzofuran	11	U
121-14-2-----	2,4-Dinitrotoluene	11	U
84-66-2-----	Diethylphthalate	11	U
7005-72-3-----	4-Chlorophenyl-phenylether	11	U
86-73-7-----	Fluorene	11	U
100-01-6-----	4-Nitroaniline	56	U
534-52-1-----	4,6-Dinitro-2-methylphenol	56	U
86-30-6-----	N-Nitrosodiphenylamine (1)	11	U
101-55-3-----	4-Bromophenyl-phenylether	11	U
118-74-1-----	Hexachlorobenzene	11	U
87-86-5-----	Pentachlorophenol	56	U
85-01-8-----	Phenanthrene	11	U
120-12-7-----	Anthracene	11	U
84-74-2-----	Di-n-Butylphthalate	11	U
206-44-0-----	Fluoranthene	11	U
129-00-0-----	Pyrene	11	U
85-68-7-----	Butylbenzylphthalate	11	U
91-94-1-----	3,3'-Dichlorobenzidine	22	U
56-55-3-----	Benzo(a)anthracene	11	U
218-01-9-----	Chrysene	11	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	11	U
117-84-0-----	Di-n-Octyl phthalate	11	U
205-99-2-----	Benzo(b)fluoranthene	11	U
207-08-9-----	Benzo(k)fluoranthene	11	U
50-32-8-----	Benzo(a)pyrene	11	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	11	U
53-70-3-----	Dibenzo(a,h)anthracene	11	U
191-24-2-----	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

113

00027

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

19-005-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-007

Sample wt/vol: 900 (g/mL) ML

Lab File ID: DBAS46

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-008

Sample wt/vol: 1000 (g/mL) ML Lab File ID: DBAS47

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	ug/L
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	50	U
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

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

19-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-008

Sample wt/vol: 1000 (g/mL) ML Lab File ID: DBAS47

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

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

FORM 1 SV-2

12/88 Rev. 120

00030

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

19-006-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-008

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

Lab File ID: DBAS47

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.      dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.:

04-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-009

Sample wt/vol: 940 (g/mL) ML Lab File ID: DBAS48

Level: (low/med) LOW Date Received: 03/22/91

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

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	U
108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	bis(2-Chloroisopropyl)ether	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic acid	53	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	53	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	53	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-009

Sample wt/vol: 940 (g/mL) ML Lab File ID: DBAS48

Level: (low/med) LOW Date Received: 03/22/91

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

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 04/05/91

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2	3-Nitroaniline	53	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	53	U
100-02-7	4-Nitrophenol	53	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	53	U
534-52-1	4,6-Dinitro-2-methylphenol	53	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	53	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	21	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-Octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev.

128

00033

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-010

Sample wt/vol: 960 (g/mL) ML Lab File ID: AAAQ77

Level: (low/med) LOW Date Received: 03/22/91

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

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

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

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

108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	52	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	52	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	52	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-010

Sample wt/vol: 960 (g/mL) ML Lab File ID: AAAQ77

Level: (low/med) LOW Date Received: 03/22/91

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

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

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

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

99-09-2-----	3-Nitroaniline	52	U
83-32-9-----	Acenaphthene	10	U
51-28-5-----	2,4-Dinitrophenol	52	U
100-02-7-----	4-Nitrophenol	52	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	52	U
534-52-1-----	4,6-Dinitro-2-methylphenol	52	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	52	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	21	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 <i>J 4</i>

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev. 136

00036

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-010

Sample wt/vol: 960 (g/mL) ML Lab File ID: AAAQ77

Level: (low/med) LOW Date Received: 03/22/91

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

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

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

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-011

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AAAQ78

Level: (low/med) LOW Date Received: 03/22/91

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

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

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

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

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

4

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1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-011

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AAAQ78

Level: (low/med) LOW Date Received: 03/22/91

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

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

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

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

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	UJ 4

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev.

143

00039

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-002-M101

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-011

Sample wt/vol: 1000 (g/mL) ML Lab File ID: AAAQ78

Level: (low/med) LOW Date Received: 03/22/91

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

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

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.	UNKNOWN HYDROCARBON	33.07	5	J <i>✓</i>
2.	UNKNOWN HYDROCARBON	34.03	6	J ↓
3.	UNKNOWN HYDROCARBON	35.03	8	J ↓
4.	UNKNOWN HYDROCARBON	36.13	5	J ↓

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-005-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-012

Sample wt/vol: 900 (g/mL) ML Lab File ID: AAAQ83

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:

CAS NO.                      COMPOUND                      (ug/L or ug/Kg) ug/L

108-95-2-----	Phenol	11	U
111-44-4-----	bis(2-Chloroethyl)ether	11	U
95-57-8-----	2-Chlorophenol	11	U
541-73-1-----	1,3-Dichlorobenzene	11	U
106-46-7-----	1,4-Dichlorobenzene	11	U
100-51-6-----	Benzyl alcohol	11	U
95-50-1-----	1,2-Dichlorobenzene	11	U
95-48-7-----	2-Methylphenol	11	U
108-60-1-----	bis(2-Chloroisopropyl)ether	11	U
106-44-5-----	4-Methylphenol	11	U
621-64-7-----	N-Nitroso-Di-n-propylamine	11	U
67-72-1-----	Hexachloroethane	11	U
98-95-3-----	Nitrobenzene	11	U
78-59-1-----	Isophorone	11	U
88-75-5-----	2-Nitrophenol	11	U
105-67-9-----	2,4-Dimethylphenol	11	U
65-85-0-----	Benzoic acid	56	U
111-91-1-----	bis(2-Chloroethoxy)methane	11	U
120-83-2-----	2,4-Dichlorophenol	11	U
120-82-1-----	1,2,4-Trichlorobenzene	11	U
91-20-3-----	Naphthalene	11	U
106-47-8-----	4-Chloroaniline	11	U
87-68-3-----	Hexachlorobutadiene	11	U
59-50-7-----	4-Chloro-3-methylphenol	11	U
91-57-6-----	2-Methylnaphthalene	11	U
77-47-4-----	Hexachlorocyclopentadiene	11	U
88-06-2-----	2,4,6-Trichlorophenol	11	U
95-95-4-----	2,4,5-Trichlorophenol	56	U
91-58-7-----	2-Chloronaphthalene	11	U
88-74-4-----	2-Nitroaniline	56	U
131-11-3-----	Dimethylphthalate	11	U
208-96-8-----	Acenaphthylene	11	U
606-20-2-----	2,6-Dinitrotoluene	11	U

IC  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-005-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-012

Sample wt/vol: 900 (g/mL) ML Lab File ID: AAAQ83

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	56	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	56	U
100-02-7	4-Nitrophenol	56	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	56	U
534-52-1	4,6-Dinitro-2-methylphenol	56	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	56	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	22	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	J
117-84-0	Di-n-Octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	UI 6

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev. 154

00042

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO:

04-005-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-012

Sample wt/vol: 900 (g/mL) ML

Lab File ID: AAA083

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-013

Sample wt/vol: 920 (g/mL) ML Lab File ID: AAAQ84

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	11	U
111-44-4-----	bis(2-Chloroethyl)ether	11	U
95-57-8-----	2-Chlorophenol	11	U
541-73-1-----	1,3-Dichlorobenzene	11	U
106-46-7-----	1,4-Dichlorobenzene	11	U
100-51-6-----	Benzyl alcohol	11	U
95-50-1-----	1,2-Dichlorobenzene	11	U
95-48-7-----	2-Methylphenol	11	U
108-60-1-----	bis(2-Chloroisopropyl)ether	11	U
106-44-5-----	4-Methylphenol	11	U
621-64-7-----	N-Nitroso-Di-n-propylamine	11	U
67-72-1-----	Hexachloroethane	11	U
98-95-3-----	Nitrobenzene	11	U
78-59-1-----	Isophorone	11	U
88-75-5-----	2-Nitrophenol	11	U
105-67-9-----	2,4-Dimethylphenol	11	U
65-85-0-----	Benzoic acid	54	U
111-91-1-----	bis(2-Chloroethoxy)methane	11	U
120-83-2-----	2,4-Dichlorophenol	11	U
120-82-1-----	1,2,4-Trichlorobenzene	11	U
91-20-3-----	Naphthalene	11	U
106-47-8-----	4-Chloroaniline	11	U
87-68-3-----	Hexachlorobutadiene	11	U
59-50-7-----	4-Chloro-3-methylphenol	11	U
91-57-6-----	2-Methylnaphthalene	11	U
77-47-4-----	Hexachlorocyclopentadiene	11	U
88-06-2-----	2,4,6-Trichlorophenol	11	U
95-95-4-----	2,4,5-Trichlorophenol	54	U
91-58-7-----	2-Chloronaphthalene	11	U
88-74-4-----	2-Nitroaniline	54	U
131-11-3-----	Dimethylphthalate	11	U
208-96-8-----	Acenaphthylene	11	U
606-20-2-----	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-013

Sample wt/vol: 920 (g/mL) ML Lab File ID: AAAQ84

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

CONCENTRATION UNITS:

(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	54	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	54	U
100-02-7	4-Nitrophenol	54	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	54	U
534-52-1	4,6-Dinitro-2-methylphenol	54	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	54	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	22	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-Octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U 6

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev. 162

00045

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-013

Sample wt/vol: 920 (g/mL) ML Lab File ID: AAAQ84

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

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

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-001-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-015

Sample wt/vol: 970 (g/mL) ML Lab File ID: AAAQ85

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	ug/L
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	52	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	52	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	52	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-001-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-015

Sample wt/vol: 970 (g/mL) ML

Lab File ID: AAAQ85

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc): SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	52	U
83-32-9-----	Acenaphthene	10	U
51-28-5-----	2,4-Dinitrophenol	52	U
100-02-7-----	4-Nitrophenol	52	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	52	U
534-52-1-----	4,6-Dinitro-2-methylphenol	52	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	52	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	21	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 J 6

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

169

00048

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-001-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-015

Sample wt/vol: 970 (g/mL) ML

Lab File ID: AAAQ85

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	HEXADECANOIC ACID	26.07	5	J
2.	UNKNOWN	28.29	20	J
3.	UNKNOWN	35.03	9	J

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-016

Sample wt/vol: 770 (g/mL) ML Lab File ID: AAAQ86

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	13	U
111-44-4	bis(2-Chloroethyl)ether	13	U
95-57-8	2-Chlorophenol	13	U
541-73-1	1,3-Dichlorobenzene	13	U
106-46-7	1,4-Dichlorobenzene	13	U
100-51-6	Benzyl alcohol	13	U
95-50-1	1,2-Dichlorobenzene	13	U
95-48-7	2-Methylphenol	13	U
108-60-1	bis(2-Chloroisopropyl)ether	13	U
106-44-5	4-Methylphenol	13	U
621-64-7	N-Nitroso-Di-n-propylamine	13	U
67-72-1	Hexachloroethane	13	U
98-95-3	Nitrobenzene	13	U
78-59-1	Isophorone	13	U
88-75-5	2-Nitrophenol	13	U
105-67-9	2,4-Dimethylphenol	13	U
65-85-0	Benzoic acid	65	U
111-91-1	bis(2-Chloroethoxy)methane	13	U
120-83-2	2,4-Dichlorophenol	13	U
120-82-1	1,2,4-Trichlorobenzene	13	U
91-20-3	Naphthalene	13	U
106-47-8	4-Chloroaniline	13	U
87-68-3	Hexachlorobutadiene	13	U
59-50-7	4-Chloro-3-methylphenol	13	U
91-57-6	2-Methylnaphthalene	13	U
77-47-4	Hexachlorocyclopentadiene	13	U
88-06-2	2,4,6-Trichlorophenol	13	U
95-95-4	2,4,5-Trichlorophenol	65	U
91-58-7	2-Chloronaphthalene	13	U
88-74-4	2-Nitroaniline	65	U
131-11-3	Dimethylphthalate	13	U
208-96-8	Acenaphthylene	13	U
606-20-2	2,6-Dinitrotoluene	13	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-016

Sample wt/vol: 770 (g/mL) ML Lab File ID: AAAQ86

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2	3-Nitroaniline	65	U
83-32-9	Acenaphthene	13	U
51-28-5	2,4-Dinitrophenol	65	U
100-02-7	4-Nitrophenol	65	U
132-64-9	Dibenzofuran	13	U
121-14-2	2,4-Dinitrotoluene	13	U
84-66-2	Diethylphthalate	13	U
7005-72-3	4-Chlorophenyl-phenylether	13	U
86-73-7	Fluorene	13	U
100-01-6	4-Nitroaniline	65	U
534-52-1	4,6-Dinitro-2-methylphenol	65	U
86-30-6	N-Nitrosodiphenylamine (1)	13	U
101-55-3	4-Bromophenyl-phenylether	13	U
118-74-1	Hexachlorobenzene	13	U
87-86-5	Pentachlorophenol	65	U
85-01-8	Phenanthrene	13	U
120-12-7	Anthracene	13	U
84-74-2	Di-n-Butylphthalate	13	U
206-44-0	Fluoranthene	13	U
129-00-0	Pyrene	13	U
85-68-7	Butylbenzylphthalate	13	U
91-94-1	3,3'-Dichlorobenzidine	26	U
56-55-3	Benzo(a)anthracene	13	U
218-01-9	Chrysene	13	U
117-81-7	bis(2-Ethylhexyl)phthalate	13	U
117-84-0	Di-n-Octyl phthalate	13	U
205-99-2	Benzo(b)fluoranthene	13	U
207-08-9	Benzo(k)fluoranthene	13	U
50-32-8	Benzo(a)pyrene	13	U
193-39-5	Indeno(1,2,3-cd)pyrene	13	U
53-70-3	Dibenzo(a,h)anthracene	13	U
191-24-2	Benzo(g,h,i)perylene	13	UJ 6

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

180

00051

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-002-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-016

Sample wt/vol: 770 (g/mL) ML Lab File ID: AAA086

Level: (low/med) LOW Date Received: 03/20/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 1 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	34.97	5	<u>JNF</u>

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-003-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-017

Sample wt/vol: 920 (g/mL) ML

Lab File ID: AAAQ87

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

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

108-95-2-----	Phenol	11	U
111-44-4-----	bis(2-Chloroethyl)ether	11	U
95-57-8-----	2-Chlorophenol	11	U
541-73-1-----	1,3-Dichlorobenzene	11	U
106-46-7-----	1,4-Dichlorobenzene	11	U
100-51-6-----	Benzyl alcohol	11	U
95-50-1-----	1,2-Dichlorobenzene	11	U
95-48-7-----	2-Methylphenol	11	U
108-60-1-----	bis(2-Chloroisopropyl)ether	11	U
106-44-5-----	4-Methylphenol	11	U
621-64-7-----	N-Nitroso-Di-n-propylamine	11	U
67-72-1-----	Hexachloroethane	11	U
98-95-3-----	Nitrobenzene	11	U
78-59-1-----	Isophorone	11	U
88-75-5-----	2-Nitrophenol	11	U
105-67-9-----	2,4-Dimethylphenol	11	U
65-85-0-----	Benzoic acid	54	U
111-91-1-----	bis(2-Chloroethoxy)methane	11	U
120-83-2-----	2,4-Dichlorophenol	11	U
120-82-1-----	1,2,4-Trichlorobenzene	11	U
91-20-3-----	Naphthalene	11	U
106-47-8-----	4-Chloroaniline	11	U
87-68-3-----	Hexachlorobutadiene	11	U
59-50-7-----	4-Chloro-3-methylphenol	11	U
91-57-6-----	2-Methylnaphthalene	11	U
77-47-4-----	Hexachlorocyclopentadiene	11	U
88-06-2-----	2,4,6-Trichlorophenol	11	U
95-95-4-----	2,4,5-Trichlorophenol	54	U
91-58-7-----	2-Chloronaphthalene	11	U
88-74-4-----	2-Nitroaniline	54	U
131-11-3-----	Dimethylphthalate	11	U
208-96-8-----	Acenaphthylene	11	U
606-20-2-----	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-003-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-017

Sample wt/vol: 920 (g/mL) ML Lab File ID: AAA087

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----3-Nitroaniline	54	U
83-32-9-----Acenaphthene	11	U
51-28-5-----2,4-Dinitrophenol	54	U
100-02-7-----4-Nitrophenol	54	U
132-64-9-----Dibenzofuran	11	U
121-14-2-----2,4-Dinitrotoluene	11	U
84-66-2-----Diethylphthalate	11	U
7005-72-3-----4-Chlorophenyl-phenylether	11	U
86-73-7-----Fluorene	11	U
100-01-6-----4-Nitroaniline	54	U
534-52-1-----4,6-Dinitro-2-methylphenol	54	U
86-30-6-----N-Nitrosodiphenylamine (1)	11	U
101-55-3-----4-Bromophenyl-phenylether	11	U
118-74-1-----Hexachlorobenzene	11	U
87-86-5-----Pentachlorophenol	54	U
85-01-8-----Phenanthrene	11	U
120-12-7-----Anthracene	11	U
84-74-2-----Di-n-Butylphthalate	11	U
206-44-0-----Fluoranthene	11	U
129-00-0-----Pyrene	11	U
85-68-7-----Butylbenzylphthalate	11	U
91-94-1-----3,3'-Dichlorobenzidine	22	U
56-55-3-----Benzo(a)anthracene	11	U
218-01-9-----Chrysene	11	U
117-81-7-----bis(2-Ethylhexyl)phthalate	11	U
117-84-0-----Di-n-Octyl phthalate	11	U
205-99-2-----Benzo(b)fluoranthene	11	U
207-08-9-----Benzo(k)fluoranthene	11	U
50-32-8-----Benzo(a)pyrene	11	U
193-39-5-----Indeno(1,2,3-cd)pyrene	11	U
53-70-3-----Dibenzo(a,h)anthracene	11	U
191-24-2-----Benzo(g,h,i)perylene	11	U J 6

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev.

188

00054

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-003-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-017

Sample wt/vol: 920 (g/mL) ML

Lab File ID: AAAQ87

Level: (low/med) LOW

Date Received: 03/20/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 6

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	31.21	10	J <i>ms</i>
2.	UNKNOWN	32.66	9	J
3.	UNKNOWN	34.00	10	J
4.	UNKNOWN	34.86	5	J
5.	UNKNOWN	35.39	9	J
6.	UNKNOWN	37.00	5	J ↓

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-004-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-018

Sample wt/vol: 920 (g/mL) ML Lab File ID: AAAQ88

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	10	J
100-51-6	Benzyl alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	bis(2-Chloroisopropyl)ether	11	U
106-44-5	4-Methylphenol	52	
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic acid	54	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	74	
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	5	J
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	54	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	54	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-004-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-018

Sample wt/vol: 920 (g/mL) ML

Lab File ID: AAAQ88

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

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

99-09-2	3-Nitroaniline	54	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	54	U
100-02-7	4-Nitrophenol	54	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	4	J
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	54	U
534-52-1	4,6-Dinitro-2-methylphenol	54	U
86-30-6	N-Nitrosodiphenylamine (1)	1	J
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachlorophenol	54	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	22	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-Octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	U J 6

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev. 201

00057

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-005-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-019

Sample wt/vol: 890 (g/mL) ML Lab File ID: AAAQ89

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	11	U
111-44-4	bis(2-Chloroethyl)ether	11	U
95-57-8	2-Chlorophenol	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
100-51-6	Benzyl alcohol	11	U
95-50-1	1,2-Dichlorobenzene	11	U
95-48-7	2-Methylphenol	11	U
108-60-1	bis(2-Chloroisopropyl)ether	11	U
106-44-5	4-Methylphenol	11	U
621-64-7	N-Nitroso-Di-n-propylamine	11	U
67-72-1	Hexachloroethane	11	U
98-95-3	Nitrobenzene	11	U
78-59-1	Isophorone	11	U
88-75-5	2-Nitrophenol	11	U
105-67-9	2,4-Dimethylphenol	11	U
65-85-0	Benzoic acid	56	U
111-91-1	bis(2-Chloroethoxy)methane	11	U
120-83-2	2,4-Dichlorophenol	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
91-20-3	Naphthalene	11	U
106-47-8	4-Chloroaniline	11	U
87-68-3	Hexachlorobutadiene	11	U
59-50-7	4-Chloro-3-methylphenol	11	U
91-57-6	2-Methylnaphthalene	11	U
77-47-4	Hexachlorocyclopentadiene	11	U
88-06-2	2,4,6-Trichlorophenol	11	U
95-95-4	2,4,5-Trichlorophenol	56	U
91-58-7	2-Chloronaphthalene	11	U
88-74-4	2-Nitroaniline	56	U
131-11-3	Dimethylphthalate	11	U
208-96-8	Acenaphthylene	11	U
606-20-2	2,6-Dinitrotoluene	11	U



IF  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-005-M001

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-019

Sample wt/vol: 890 (g/mL) ML

Lab File ID: AAA089

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	34.86	10	J <i>AL</i>

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-020

Sample wt/vol: 960 (g/mL) ML Lab File ID: AAAQ90

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
100-51-6	Benzyl alcohol	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	bis(2-Chloroisopropyl)ether	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-Di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
65-85-0	Benzoic acid	52	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	52	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	52	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-020

Sample wt/vol: 960 (g/mL) ML Lab File ID: AAAQ90

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2	3-Nitroaniline	52	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	52	U
100-02-7	4-Nitrophenol	52	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	52	U
534-52-1	4,6-Dinitro-2-methylphenol	52	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	52	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	21	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

UJ 6

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev.

247

00062

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-006-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-020

Sample wt/vol: 960 (g/mL) ML Lab File ID: AAAQ90

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 2 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	30.65	7	J <u>✓</u>
2.	UNKNOWN	34.85	9	J <u>↓</u>

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-007-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-021

Sample wt/vol: 940 (g/mL) ML Lab File ID: AAAQ91

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	ug/L	U
108-95-2	Phenol	11		U
111-44-4	bis(2-Chloroethyl)ether	11		U
95-57-8	2-Chlorophenol	11		U
541-73-1	1,3-Dichlorobenzene	11		U
106-46-7	1,4-Dichlorobenzene	11		U
100-51-6	Benzyl alcohol	11		U
95-50-1	1,2-Dichlorobenzene	11		U
95-48-7	2-Methylphenol	11		U
108-60-1	bis(2-Chloroisopropyl)ether	11		U
106-44-5	4-Methylphenol	11		U
621-64-7	N-Nitroso-Di-n-propylamine	11		U
67-72-1	Hexachloroethane	11		U
98-95-3	Nitrobenzene	11		U
78-59-1	Isophorone	11		U
88-75-5	2-Nitrophenol	11		U
105-67-9	2,4-Dimethylphenol	11		U
65-85-0	Benzoic acid	53		U
111-91-1	bis(2-Chloroethoxy)methane	11		U
120-83-2	2,4-Dichlorophenol	11		U
120-82-1	1,2,4-Trichlorobenzene	11		U
91-20-3	Naphthalene	11		U
106-47-8	4-Chloroaniline	11		U
87-68-3	Hexachlorobutadiene	11		U
59-50-7	4-Chloro-3-methylphenol	11		U
91-57-6	2-Methylnaphthalene	11		U
77-47-4	Hexachlorocyclopentadiene	11		U
88-06-2	2,4,6-Trichlorophenol	11		U
95-95-4	2,4,5-Trichlorophenol	53		U
91-58-7	2-Chloronaphthalene	11		U
88-74-4	2-Nitroaniline	53		U
131-11-3	Dimethylphthalate	11		U
208-96-8	Acenaphthylene	11		U
606-20-2	2,6-Dinitrotoluene	11		U

1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-007-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-021

Sample wt/vol: 940 (g/mL) ML Lab File ID: AAAQ91

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>ug/L</u>	
99-09-2	3-Nitroaniline	53	U
83-32-9	Acenaphthene	11	U
51-28-5	2,4-Dinitrophenol	53	U
100-02-7	4-Nitrophenol	53	U
132-64-9	Dibenzofuran	11	U
121-14-2	2,4-Dinitrotoluene	11	U
84-66-2	Diethylphthalate	11	U
7005-72-3	4-Chlorophenyl-phenylether	11	U
86-73-7	Fluorene	11	U
100-01-6	4-Nitroaniline	53	U
534-52-1	4,6-Dinitro-2-methylpheno1	53	U
86-30-6	N-Nitrosodiphenylamine (1)	11	U
101-55-3	4-Bromophenyl-phenylether	11	U
118-74-1	Hexachlorobenzene	11	U
87-86-5	Pentachloropheno1	53	U
85-01-8	Phenanthrene	11	U
120-12-7	Anthracene	11	U
84-74-2	Di-n-Butylphthalate	11	U
206-44-0	Fluoranthene	11	U
129-00-0	Pyrene	11	U
85-68-7	Butylbenzylphthalate	11	U
91-94-1	3,3'-Dichlorobenzidine	21	U
56-55-3	Benzo(a)anthracene	11	U
218-01-9	Chrysene	11	U
117-81-7	bis(2-Ethylhexyl)phthalate	11	U
117-84-0	Di-n-Octyl phthalate	11	U
205-99-2	Benzo(b)fluoranthene	11	U
207-08-9	Benzo(k)fluoranthene	11	U
50-32-8	Benzo(a)pyrene	11	U
193-39-5	Indeno(1,2,3-cd)pyrene	11	U
53-70-3	Dibenzo(a,h)anthracene	11	U
191-24-2	Benzo(g,h,i)perylene	11	UJ 6

(1) - Cannot be separated from Diphenylamine

FORM 1 SV-2

12/88 Rev. 257

00065

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-007-M001

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-021

Sample wt/vol: 940 (g/mL) ML Lab File ID: AAAQ91

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	34.86	6	<i>JPL</i>



1C  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

03-007-M201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-022

Sample wt/vol: 880 (g/mL) ML Lab File ID: AAAQ92

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	57	U
83-32-9-----	Acenaphthene	11	U
51-28-5-----	2,4-Dinitrophenol	57	U
100-02-7-----	4-Nitrophenol	57	U
132-64-9-----	Dibenzofuran	11	U
121-14-2-----	2,4-Dinitrotoluene	11	U
84-66-2-----	Diethylphthalate	11	U
7005-72-3-----	4-Chlorophenyl-phenylether	11	U
86-73-7-----	Fluorene	11	U
100-01-6-----	4-Nitroaniline	57	U
534-52-1-----	4,6-Dinitro-2-methylphenol	57	U
86-30-6-----	N-Nitrosodiphenylamine (1)	11	U
101-55-3-----	4-Bromophenyl-phenylether	11	U
118-74-1-----	Hexachlorobenzene	11	U
87-86-5-----	Pentachlorophenol	57	U
85-01-8-----	Phenanthrene	11	U
120-12-7-----	Anthracene	11	U
84-74-2-----	Di-n-Butylphthalate	11	U
206-44-0-----	Fluoranthene	11	U
129-00-0-----	Pyrene	11	U
85-68-7-----	Butylbenzylphthalate	11	U
91-94-1-----	3,3'-Dichlorobenzidine	23	U
56-55-3-----	Benzo(a)anthracene	11	U
218-01-9-----	Chrysene	11	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	11	U
117-84-0-----	Di-n-Octyl phthalate	11	U
205-99-2-----	Benzo(b)fluoranthene	11	U
207-08-9-----	Benzo(k)fluoranthene	11	U
50-32-8-----	Benzo(a)pyrene	11	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	11	U
53-70-3-----	Dibenzo(a,h)anthracene	11	U
191-24-2-----	Benzo(g,h,i)perylene	11	U <i>6</i>

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev.

265

00068

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

03-007-M201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-022

Sample wt/vol: 880 (g/mL) ML Lab File ID: AAAQ92

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

Number TICs found: 6 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON	33.03	10	J <i>AS</i>
2.	UNKNOWN HYDROCARBON	33.98	10	J
3.	UNKNOWN HYDROCARBON	34.96	20	J
4.	UNKNOWN HYDROCARBON	36.06	10	J
5.	UNKNOWN HYDROCARBON	37.33	9	J
6.	UNKNOWN HYDROCARBON	38.81	6	J ↓

1B  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-M201

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

Client: Naval Weapons Station

Matrix: WATER Lab Sample ID: 9103L008-023

Sample wt/vol: 940 (g/mL) ML Lab File ID: AAAQ93

Level: (low/med) LOW Date Received: 03/22/91

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

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

GPC Cleanup: (Y/N) N pH: 6.0 Dilution Factor: 1.00

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

108-95-2-----	Phenol	11	U
111-44-4-----	bis(2-Chloroethyl)ether	11	U
95-57-8-----	2-Chlorophenol	11	U
541-73-1-----	1,3-Dichlorobenzene	11	U
106-46-7-----	1,4-Dichlorobenzene	11	U
100-51-6-----	Benzyl alcohol	11	U
95-50-1-----	1,2-Dichlorobenzene	11	U
95-48-7-----	2-Methylphenol	11	U
108-60-1-----	bis(2-Chloroisopropyl)ether	11	U
106-44-5-----	4-Methylphenol	11	U
621-64-7-----	N-Nitroso-Di-n-propylamine	11	U
67-72-1-----	Hexachloroethane	11	U
98-95-3-----	Nitrobenzene	11	U
78-59-1-----	Isophorone	11	U
88-75-5-----	2-Nitrophenol	11	U
105-67-9-----	2,4-Dimethylphenol	11	U
65-85-0-----	Benzoic acid	53	U
111-91-1-----	bis(2-Chloroethoxy)methane	11	U
120-83-2-----	2,4-Dichlorophenol	11	U
120-82-1-----	1,2,4-Trichlorobenzene	11	U
91-20-3-----	Naphthalene	11	U
106-47-8-----	4-Chloroaniline	11	U
87-68-3-----	Hexachlorobutadiene	11	U
59-50-7-----	4-Chloro-3-methylphenol	11	U
91-57-6-----	2-Methylnaphthalene	11	U
77-47-4-----	Hexachlorocyclopentadiene	11	U
88-06-2-----	2,4,6-Trichlorophenol	11	U
95-95-4-----	2,4,5-Trichlorophenol	53	U
91-58-7-----	2-Chloronaphthalene	11	U
88-74-4-----	2-Nitroaniline	53	U
131-11-3-----	Dimethylphthalate	11	U
208-96-8-----	Acenaphthylene	11	U
606-20-2-----	2,6-Dinitrotoluene	11	U

IC  
SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

04-002-M201

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-023

Sample wt/vol: 940 (g/mL) ML

Lab File ID: AAAQ93

Level: (Low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

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

99-09-2-----	3-Nitroaniline	53	U
83-32-9-----	Acenaphthene	11	U
51-28-5-----	2,4-Dinitrophenol	53	U
100-02-7-----	4-Nitrophenol	53	U
132-64-9-----	Dibenzofuran	11	U
121-14-2-----	2,4-Dinitrotoluene	11	U
84-66-2-----	Diethylphthalate	11	U
7005-72-3-----	4-Chlorophenyl-phenylether	11	U
86-73-7-----	Fluorene	11	U
100-01-6-----	4-Nitroaniline	53	U
534-52-1-----	4,6-Dinitro-2-methylphenol	53	U
86-30-6-----	N-Nitrosodiphenylamine (1)	11	U
101-55-3-----	4-Bromophenyl-phenylether	11	U
118-74-1-----	Hexachlorobenzene	11	U
87-86-5-----	Pentachlorophenol	53	U
85-01-8-----	Phenanthrene	11	U
120-12-7-----	Anthracene	11	U
84-74-2-----	Di-n-Butylphthalate	11	U
206-44-0-----	Fluoranthene	11	U
129-00-0-----	Pyrene	11	U
85-68-7-----	Butylbenzylphthalate	11	U
91-94-1-----	3,3'-Dichlorobenzidine	21	U
56-55-3-----	Benzo(a)anthracene	11	U
218-01-9-----	Chrysene	11	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	11	U
117-84-0-----	Di-n-Octyl phthalate	11	U
205-99-2-----	Benzo(b)fluoranthene	11	U
207-08-9-----	Benzo(k)fluoranthene	11	U
50-32-8-----	Benzo(a)pyrene	11	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	11	U
53-70-3-----	Dibenzo(a,h)anthracene	11	U
191-24-2-----	Benzo(g,h,i)perylene	11	U <sup>6</sup>

(1) - Cannot be separated from Diphenylamine  
FORM 1 SV-2

12/88 Rev.

278

00071

1F  
SEMIVOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

04-002-M201

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

Client: Naval Weapons Station

Matrix: WATER

Lab Sample ID: 9103L008-023

Sample wt/vol: 940 (g/mL) ML

Lab File ID: AAAQ93

Level: (low/med) LOW

Date Received: 03/22/91

% Moisture: not dec.        dec.

Date Extracted: 03/22/91

Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed: 04/04/91

GPC Cleanup: (Y/N) N pH: 6.0

Dilution Factor: 1.00

Number TICs found: 0

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

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

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 91032008  
 LAB: R.F. WESTON - GULF COAST  
 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.

*EMW*  
*4/7-16-91*

1.2 Was SMD OCS 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 ENA analyses and Part C for Pesticide/PCBs.

Does this package contain:

VOA data?

ENA data?

Pesticide/PCB data?

ACTION: Complete corresponding parts of checklist.

PART B: BVA ANALYSES

YES NO N/A

1.0 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).

1.0 Holding Times

2.1 Have any BVA holding times, determined from date of collection to date of extraction, been exceeded?

Samples for BVA 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
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

ACTION: If holding times are exceeded, flag all positive results as estimated ("J") and sample quantitation limits as estimated ("U"), 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").

4.0 Surrogate Recovery (Form II)

3.1 Are the BVA 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 BVA 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 BVA 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 ("U").

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".

4.0 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
- b. Med Water
- c. Low Soil
- d. Med Soil

— —  
 Water   
 —   
 —

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  
 out of 22 N/A out of 22

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

Water Soils  
 out of 11 N/A 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
<u>5.0 Blanks (Form IV)</u>			
5.1 Is the Method Blank Summary (Form IV) present?	<input checked="" type="checkbox"/>	___	___
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?	<input checked="" type="checkbox"/>	___	___
5.3 Has a BNA <sup>Method</sup> <del>instrument</del> blank been analyzed for each GS/MS system used.	<input checked="" type="checkbox"/>	___	___
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?	<input checked="" type="checkbox"/>	___	___
ACTION: Use professional judgement to determine the effect on the data.			
<u>6.0 Contamination</u>			
NOTE: "Water blanks" and "distilled water blanks" are validated like any other sample and are <u>not</u> 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.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	___
6.2 Do any field/rinse blanks have positive BNA results (TCL and/or TIC)?	___	<input checked="" type="checkbox"/>	___
ACTION: Prepare a list of the samples associated with each of the contaminated blanks. (Attach a separate sheet.)			
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.			

*Not identified or submitted.*

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?

YES  NO  N/A

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 or Submitted.*

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)?

YES  NO  N/A

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

YES  NO  N/A

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

YES  NO  N/A

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
		<del>7-16-91</del>	

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

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.

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".

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

8.1 Are the Organic Analysis Data Sheets (Form I BVA) 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	<input checked="" type="checkbox"/>	—	—
b. Matrix spikes and matrix spike duplicates (Mass spectra not required)	<input checked="" type="checkbox"/>	—	—
c. Blanks	<input checked="" type="checkbox"/>	—	—
ACTION: If any data are missing, take action specified in 3.2 above.			
8.3 Are the response factors shown in the Quant Report?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	—
8.4 Is chromatographic performance acceptable with respect to:	<i>Quant ions</i>		
Baseline stability	<input checked="" type="checkbox"/>	—	—
Resolution	<input checked="" type="checkbox"/>	—	—
Peak shape	<input checked="" type="checkbox"/>	—	—
Full-scale graph (attenuation)	<input checked="" type="checkbox"/>	—	—
Other: _____	<input type="checkbox"/>	—	<input checked="" type="checkbox"/>
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?	<input checked="" type="checkbox"/>	—	—
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?	<input checked="" type="checkbox"/>	—	—
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?	<input checked="" type="checkbox"/>	—	—
8.8 Do sample and standard relative ion intensities agree within 20%?	<input checked="" type="checkbox"/>	—	—
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
<u>9.0 Tentatively Identified Compounds (TIC)</u>			
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?	<input checked="" type="checkbox"/>	—	—
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	<input checked="" type="checkbox"/>	—	—
b. Blanks	<input checked="" type="checkbox"/>	—	—
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 <u>identified</u> 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)?	—	<input checked="" type="checkbox"/>	—
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?	<input checked="" type="checkbox"/>	—	—
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	<input checked="" type="checkbox"/>	—	—
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.			
<u>10.0 Compound Quantitation and Reported Detection Limits</u>			
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?	—	<input checked="" type="checkbox"/>	—
10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture?	<input checked="" type="checkbox"/>	—	—

	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?

<input checked="" type="checkbox"/>	—	—
-------------------------------------	---	---

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

### 12.0 GC/MS Initial Calibration (Form VI)

etc.

12.1 Are the Initial Calibration Forms (Form VI) present and complete for the BVA fraction?

<input checked="" type="checkbox"/>	—	—
-------------------------------------	---	---

ACTION: If any calibration standard forms are missing, take action specified in 3.2 above.

12.2 Are response factors stable for BVAs over the concentration range of the calibration (RSD <30%)?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	—
--------------------------	-------------------------------------	---

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?

—	<input checked="" type="checkbox"/>	—
---	-------------------------------------	---

ACTION: Circle all outliers in red.

ACTION: If any BVA 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").

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.)

YES	NO	N/A
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BVA fraction?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

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

~~\_\_\_\_\_~~  
~~\_\_\_\_\_~~  
~~\_\_\_\_\_~~

*EMM*  
*4-16-91*

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").

13.3 Do any continuing calibration standard compounds have a RRF < 0.05?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------

ACTION: Circle all outliers in red.

ACTION: If any BVA 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").

13.4 Do any compounds have a % difference between initial and continuing calibration RRF > 25%?

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------

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

% DIFFERENCE			YES	NO	N/A
25-50	50-90	>90			
'J' positive results, no action for non detects	'J' positive results, 'U' 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.)

✓                    
*EMM*  
 7-16-91

ACTION: Circle errors in red.

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

10 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
03-005-M001	DCB	48766	9307	37226
↓	NPT	163961	38989	155956
↓	ANT	88958	20469	81876
↓	PHW	152654	36195	144780

(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

5 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.

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.

*Not identified or Submitted.*

TOTAL REVIEW

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

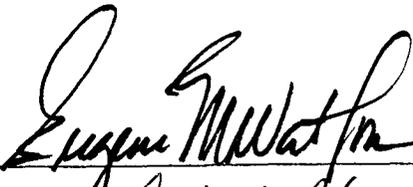
Case No. 9/03L008 SDG No. — LABORATORY Gulf Coast SITE COLTSNECK

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:



Date: 7/16/1991

Verified By:



Date: 7/18/1991

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*  
*7-16-91*

ATTACHMENT 1  
SOP NO. HW-6

## 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 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

*Blank 41660136-MBI- TIC RT. 31.04*

*No Action needed*

## B) Field or rinse blank contamination

*Not identified or submitted*

## C) Water blank contamination

*See above*

## D) Trip blank contamination

*Not identified or submitted*

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*

*EMM*  
*7-16-91*

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*

*ERM*  
*7-16-91*

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 dibutylchlorodate must not exceed 10%. Percent D must be within 15% on the quantitation column and 20% on the confirmation column.

- \* *Int. Cal. 4-3-91 GCL #4 - No Samples*  
*Indeno (1,2,3-cd) pyrene - 39.0%, benzo (g,h,i) perylene 36.7%*
- \* *Cont Cal 4-3-91 GCL #4 Samples SBK B0134-MB1, 19-002-M001, 19-003-M001*  
*I pos (>25% - <50%) Indeno (1,2,3-c,d) pyrene, benzo (g,h,i) perylene*
- \* *Cont Cal 4-3-91 GCL #1 Samples SBK B0136-MB1, 04-002-M001, 04-002-M101*  
*I pos (>25% - <50%) 2,4-Dinitrophenol, Indeno (1,2,3-cd) pyrene, dibenzo (a,h)-anthracene*
- I pos, UJ NDs (>50% - <90%) benzo (g,h,i) perylene, benzyl alcohol*
- \* *Cont Cal 4-4-91 GCL #1 Samples 04-005-M001, 04-006-M001, 03-001-M001, 03-002-M001, 03-003-M001, 03-004-M001, 03-005-M001, 03-006-M001, 03-007-M001, 03-007-M201, 04-002-M201*  
*I pos (>25% - <50%) benzyl alcohol, nitro benzene, Indeno (1,2,3-cd) pyrene, dibenzo (a,h) anthracene, nitro benzene - d5 (surr)*  
*no action on surr compd - all surr within QC limits*
- I pos, UJ NDs (>50% - <90%) benzo (g,h,i) perylene*

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*

*EMW*  
*7-16-91*

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  $\pm 30$  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.

*for Sample 03-005-M001 - I/O all empds  
associated with internal stds:*

*1,4-dichlorobenzene-d4*

*Naphthalene-d8*

*Acenaphthene-d10*

*Phenanthrene-d10*

*All EICP areas above upper control limit.  
Sample was not reanalyzed per protocol.*

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  $\pm 0.06$  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*

*EMM*  
*7-16-91*

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 sample 19-001-M001 MS/MSD yielded acceptable recoveries. However, the one set of blank MS/MSD did have 3 RPD's above the advisory limits. No action is needed for the blank MS/MSD. The laboratory did not extract another sample MS/MSD as required per protocol. This will be noted in the case narrative.

DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

*None*

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

*System performance and data package was very good. See case narrative.*

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.

*None.*

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 9103L008

LABORATORY GULF COAST

SDG NO. \_\_\_\_\_

DATA USER R. F. WESTON

SOW 2/88 CUP/REGION II

REVIEW COMPLETION DATE 7-16-91

NO. OF SAMPLES 22 WATER N/A SOIL N/A OTHER \_\_\_\_\_

REVIEWER [ ] ESD [ ] ESAT  OTHER, CONTRACT/CONTRACTOR HEARTLAND ESI

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	_____	<u>0</u>	_____	_____
2. GC-MS TUNE/ GC PERFORMANCE	_____	<u>0</u>	_____	_____
3. INITIAL CALIBRATIONS	_____	<u>0</u>	_____	_____
4. CONTINUING CALIBRATIONS	_____	<u>X</u>	_____	_____
5. FIELD BLANKS (*F = not applicable)	_____	<u>F</u>	_____	_____
6. LABORATORY BLANKS	_____	<u>0</u>	_____	_____
7. SURROGATES	_____	<u>0</u>	_____	_____
8. MATRIX SPEKE/DUPLICATES	_____	<u>0</u>	_____	_____
9. REGIONAL QC (*F = not applicable)	_____	<u>F</u>	_____	_____
10. INTERNAL STANDARDS	_____	<u>X</u>	_____	_____
11. COMPOUND IDENTIFICATION	_____	<u>0</u>	_____	_____
12. COMPOUND QUANTITATION	_____	<u>0</u>	_____	_____
13. SYSTEM PERFORMANCE	_____	<u>0</u>	_____	_____
14. OVERALL ASSESSMENT	_____	<u>X</u>	_____	_____

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: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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

SOP NO: HW-6  
Date: February 1989

Type of Review: DATA REGION II DATA VALIDATION Date: 7-16-91

Project: COLTS NECK NAVAL WEAPONS STATION

Case #: 9103C00K

Reviewer's Initials: JMN

Lab Name: R.F. WESTON GULF COAST

Number of Samples: 22

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	Other	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)	0	0	0	0	0	0	22	0 / 330
B/N (50)	0	0	0	0	0	0	22	0 / 1100
VOA (35)								
PEST (20)								
ICB (7)								
TCDD (1)								

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)	0	0	0	0	0	15	22	15 / 330
B/N (50)	0	0	15	0	0	37	22	52 / 1100
VOA (35)								
PEST (20)								
ICB (7)								
TCDD (1)								

8600