N60478.AR.000154
NWS EARLE
5090.3a

HEARTLAND ENVIRONMENTAL SERVICES, INC.
P.O. BOX 163 ST. PETERS MO 63376
(314) 278-8232

November 7, 1991

To: Mr. John Williams
Roy F. Weston, Inc.
1 Weston Way
Lionville, PA

From: Paul B. Humburg
Project Manager
Heartland ESI

Subject: Submittal of Analytical Data Validation of the Semivolatile Organics results of sampling conducted for the Coltsneck Naval Weapons Station, Case No. 9108L518. The 1 water sample and 7 soil samples plus 1 MS/MSD was analyzed by Roy F. Weston Laboratory, Lionville.

Samples Reviewed

Soil Samples (all)

CNWS ID	RFW ID	CNWS ID	RFW ID
08-T001-S001	91LE1113-001	08-T002-S001	91LE1113-002
08-T004-S001	91LE1113-003	08-T004-S101	91LE1113-004
08-T005-S001	91LE1113-005	08-T006-S001	91LE1113-006
08-T006-S001MS	91LE1113-006MS	08-T006-S001MSD	91LE1113-006MSD
08-T007-S001	91LE1113-007		

Water Samples (all)

CNWS ID	RFW ID	CNWS ID	RFW ID
08-T007-W201	91LE1086-008		

Heartland ESI has reviewed the data for the samples listed above for the Semivolatile Organics analyses using EPA CLP Organics Protocol 1988 SOW according to Region II requirements. Analytical data in this report were screened to determine usability of results and also to determine contractual compliance relative to the requirements and deliverables of EPA Region II. This screening assumes analytical results are correct as reported and merely provides an interpretation of the reported quality control results. Individual fraction was reviewed as follows:

* Semivolatile Organics by Eugene M. Watson
  Secondary review by Paul B. Humburg

Please refer to the Form I's, Summary of Data Qualifications, and the detailed Data Assessment and Narrative for additional information. Specific comments are provided in the following case narrative.

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, March, 1990, Revision 7. All comments made within this report should be considered when examining the analytical results (Form I's).

Holding Times

All of the samples met the required analysis holding times set forth in the SOW and the Region II Guidelines. No qualifications are needed.

Method Blanks

The two (2) method blanks that were analyzed exhibited contamination for one (1) TIC. All sample TIC results were compared to the associated method blank results.

Specific findings:

1. The following TICs are rejected due to method blank contamination.

Sample ID	TICs rejected
08-T007-W201	1
08-T001-S001	1
08-T002-S001	1
08-T004-S001	1
08-T004-S101	1
08-T005-S001	1
08-T006-S001	1
08-T007-S001	1

Trip Blanks

There was not a trip blank identified with this set of samples.

Tuning

All of the DFTPP tunes in the initial and continuing calibrations met the percent relative abundance criteria of the SOW, Region II, and the Organic Functional Guidelines. No qualifications are needed.

DATA ASSESSMENT AND NARRATIVE

Initial Calibrations

The two (2) initial calibrations in this data package contained two (2) compounds which were not acceptable for %RSD criteria. All of the compounds met the minimum RRF criteria.

Specific findings:

2. For the initial calibration on 08/23/91, the following compound exceeded 30% RSD. No qualifications are required since samples were not analyzed after the initial calibration.
   a) hexachloroethane

3. For the initial calibration on 09/11/91, the following compound exceeded 30% RSD. No qualifications are required since samples were not analyzed after the initial calibration.
   a) hexachlorocyclopentadiene

Continuing Calibrations

The three (3) continuing calibrations in the data package required qualifications due to calibration deficiencies for non criteria compounds. All of the RRFs met the minimum requirements.

Specific findings:

4. For samples SBLKLE1086-MB1 and 08-T007-W201, the continuing calibration on 08/29/91 contained the following compounds with %Ds greater than 25% D, but less than 50% D. Qualify all positive results for these compounds as estimated (J).
   a) benzoic acid
   b) 2,4-dinitrophenol

5. For samples SBLKLE1086-MB1BS and SBLKL1086-MB1BSD, the continuing calibration on 09/04/91 contained the following compounds with %Ds greater than 25% D, but less than 50% D. Qualify all positive results for these compounds as estimated (J).
   a) 2-methylnaphthalene

6. For all the soil samples and the MS/MSD, the continuing calibration on 09/12/91 contained the following compounds with %Ds greater than 25% D, but less than 50% D. Qualify all positive results for these compounds as estimated (J).
   a) 2,4-dinitrophenol
   b) 4,6-dinitro-2-methylphenol

DATA ASSESSMENT AND NARRATIVE

Surrogates

All of the surrogate recoveries for the water and soil samples were within QA/QC limits. No qualifications are required.

Internal Standards

All of the internal standard EICP areas for the water and soil samples were within QA/QC limits. No qualifications are required.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All of the MS/MSD spike recoveries and %RPDs for the soil samples were within the QA/QC advisory limits. The water BS/BSD contained two (2) recoveries above the advisory limit. These two (2) non compliant recoveries have no impact on the results of the water sample. All of the water BS/BSD %RPDs were within the QA/QC advisory limits. No qualifications are required.

Compound Identification/Quantitation

The water and soil sample results reported by the laboratory were acceptable and did not require qualifications based on identification and quantitation. No qualifications are required.

System Performance and Overall Assessment

The overall system performance was acceptable. The laboratory did not encounter any large problems. Heartland ESI estimates that less than 5% of the data is qualified. Please refer to the Summary of Data Qualifications for a tabulated summary of the data assessment and narrative.

GLOSSARY OF DATA QUALIFIERS

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

K = Result is biased high

L = Result is biased low

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.

HEARTLAND ENVIRONMENTAL
SERVICES, INC.

SUMMARY OF DATA QUALIFICATIONS

SAMPLE ID	ANALYTE ID	DL	QL	SPECIFIC FINDINGS
08-T007-W201, 08-T001-S001, 08-T002-S001, 08-T004-S001, 08-T004-S101, 08-T005-S001, 08-T006-S001, 08-T007-S001	TIC #1	+JB	R	1
SBLKLE1086-MB1, 08-T007-W201	benzoic acid 2,4-dinitrophenol	+	J	4
SBLKLE1086-MB1BS, SBLKLE1086-MB1BSD	2-methyl- naphthalene	+	J	5
All soil samples and the MS/MSD	2,4-dinitro- phenol 4,6-dinitro-2-methylphenol	+	J	6

* DL denotes the Form I qualifier supplied by the laboratory

QL denotes the qualifier used by Heartland ESI

\+ in the DL column denotes a positive result

\- in the DL column denotes a non detect result

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T001-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: J091209

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic acid	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

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T001-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: J091209

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.7 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
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	120	J
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	220	J
129-00-0	Pyrene	210	J
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	740	U
56-55-3	Benzo(a)anthracene	130	J
218-01-9	Chrysene	170	J
117-81-7	bis(2-Ethylhexyl)phthalate	300	J
117-84-0	Di-n-Octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	160	J
207-08-9	Benzo(k)fluoranthene	110	J
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

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

08-T001-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-001

Sample wt/vol: 30.3 (g/mL) G Lab File ID: J091209

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.7 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.	ALDOL CONDENSATE	6.00	300	JAB
2.	ALDOL CONDENSATE	6.54	400	JA
3.	ALDOL CONDENSATE	7.28	300	JA
4.	ALDOL CONDENSATE	8.32	100	JA
5.	UNKNOWN	20.06	400	J NJT
6.	UNKNOWN	23.53	100	J NJT

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T002-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-002

Sample wt/vol: 30.3 (g/mL) G Lab File ID: J091205

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 9 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
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

U U U U U 6 U

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T002-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-002

Sample wt/vol: 30.3 (g/mL) G Lab File ID: J091205

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 9 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
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 (1)	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	720	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	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

1F 0 0 0 0 0 0 1

CLIENT SAMPLE NO.

08-T002-S001

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-002

Sample wt/vol: 30.3 (g/mL) G Lab File ID: J091205

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 9 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.98	300	JAB
2.	ALDOL CONDENSATE	6.50	400	JA
3.	UNKNOWN	20.04	300	J

FORM 1 SV-TIC 12/88 Rev.

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T004-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-003

Sample wt/vol: 30.1 (g/mL) G Lab File ID: J091210

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic acid	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	52	J
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	75	J
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.

08-T004-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-003

Sample wt/vol: 30.1 (g/mL) G Lab File ID: J091210

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.0 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
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	200	J
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	330	J
129-00-0	Pyrene	330	J
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	740	U
56-55-3	Benzo(a)anthracene	150	J
218-01-9	Chrysene	220	J
117-81-7	bis(2-Ethylhexyl)phthalate	160	J
117-84-0	Di-n-Octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	160	J
207-08-9	Benzo(k)fluoranthene	160	J
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

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

08-T004-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-003

Sample wt/vol: 30.1 (g/mL) G Lab File ID: J091210

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.0 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.	ALDOL CONDENSATE	6.02	300	~~JAB~~
2.	ALDOL CONDENSATE	6.54	400	JA
3.	UNKNOWN	8.12	300	J
4.	MOLECULAR SULFUR	15.74	1000	J
5.	UNKNOWN	20.09	800	J
6.	MOLECULAR SULFUR	20.95	10000	J
7.	UNKNOWN	21.44	200	J
8.	UNKNOWN	22.24	300	J
9.	UNKNOWN	22.83	200	J
10.	UNKNOWN	23.07	200	J
11.	UNKNOWN	23.24	200	J
12.	UNKNOWN	23.50	900	J
13.	UNKNOWN	23.61	200	J
14.	UNKNOWN	24.74	300	J
15.	ALKANE	25.07	400	J
16.	UNKNOWN	25.14	300	J
17.	UNKNOWN	25.73	200	J
18.	UNKNOWN	27.45	1000	J
19.	UNKNOWN	29.59	700	J
20.	ALKANE	30.56	2000	J

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T004-S101

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-004

Sample wt/vol: 30.1 (g/mL) G Lab File ID: J091211

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 14 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.9 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
100-51-6	Benzyl alcohol	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	bis(2-Chloroisopropyl)ether	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-Di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
65-85-0	Benzoic acid	1900	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	44	J
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	63	J
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T004-S101

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-004

Sample wt/vol: ~30.1 (g/mL) G Lab File ID: J091211

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 14 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.9 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	210	J
120-12-7	Anthracene	390	U
84-74-2	Di-n-Butylphthalate	390	U
206-44-0	Fluoranthene	300	J
129-00-0	Pyrene	330	J
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	770	U
56-55-3	Benzo(a)anthracene	150	J
218-01-9	Chrysene	200	J
117-81-7	bis(2-Ethylhexyl)phthalate	220	J
117-84-0	Di-n-Octyl phthalate	390	U
205-99-2	Benzo(b)fluoranthene	160	J
207-08-9	Benzo(k)fluoranthene	160	J
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

08-T004-S101

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL

Lab Sample ID: 9108L518-004

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

Lab File ID: J091211

Level: (low/med) LOW

Date Received: 08/21/91

% Moisture: not dec. 14 dec.

Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.9

Dilution Factor: 1.00

Number TICs found: 19

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.99	300	JAB
2.	ALDOL CONDENSATE	6.52	500	JA
3.	ALDOL CONDENSATE	7.27	300	JA
4.	ALDOL CONDENSATE	8.31	200	JA
5.	MOLECULAR SULFUR	15.72	800	J
6.	UNKNOWN	20.06	600	J
7.	MOLECULAR SULFUR	20.91	10000	J
8.	UNKNOWN	22.22	200	J
9.	UNKNOWN	22.85	200	J
10.	UNKNOWN	23.04	200	J
11.	UNKNOWN	23.47	800	J
12.	ALKANE	24.70	300	J
13.	ALKANE	25.04	300	J
14.	UNKNOWN	25.12	200	J
15.	UNKNOWN	26.60	500	J
16.	UNKNOWN	27.42	800	J
17.	UNKNOWN	29.58	800	J
18.	ALKANE	30.54	2000	J
19.	ALKANE	30.79	500	J

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T005-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-005

Sample wt/vol: 30.1 (g/mL) G Lab File ID: J091206

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 11 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.5 Dilution Factor: 1.00

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

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

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T005-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-005

Sample wt/vol: 30.1 (g/mL) G Lab File ID: J091206

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 11 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.5 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
84-74-2	Di-n-Butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	98	J
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

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

08-T005-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-005

Sample wt/vol: 30.1 (g/mL) G Lab File ID: J091206

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 11 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 5.5 Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.03	300	JAB R/
2.	ALDOL CONDENSATE	6.55	400	JA
3.	UNKNOWN	20.09	200	J/UJ

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T006-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-006

Sample wt/vol: 30.2 (g/mL) G Lab File ID: J091207

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.8 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
100-51-6	Benzyl alcohol	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	bis(2-Chloroisopropyl)ether	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-Di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
65-85-0	Benzoic acid	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

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T006-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-006

Sample wt/vol: 30.2 (g/mL) G Lab File ID: J091207

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.8 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
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	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	740	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	J
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

CLIENT SAMPLE NO.

08-T006-S001

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-006

Sample wt/vol: 30.2 (g/mL) G Lab File ID: J091207

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 10 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.8 Dilution Factor: 1.00

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.98	300	~~JAB~~ K/
2.	ALDOL CONDENSATE	7.25	200	JA
3.	UNKNOWN	20.04	100	J NJT

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T007-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-007

Sample wt/vol: 30.9 (g/mL) G Lab File ID: J091208

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 8 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.5 Dilution Factor: 1.00

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

CAS NO.	COMPOUND		
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
100-51-6	Benzyl alcohol	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	bis(2-Chloroisopropyl)ether	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-Di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
65-85-0	Benzoic acid	1800	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T007-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-007

Sample wt/vol: 30.9 (g/mL) G Lab File ID: J091208

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 8 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.5 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	350	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
84-74-2	Di-n-Butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	700	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	79	J
117-84-0	Di-n-Octyl phthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

08-T007-S001

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: SOIL Lab Sample ID: 9108L518-007

Sample wt/vol: 30.9 (g/mL) G Lab File ID: J091208

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. 8 dec. Date Extracted: 08/30/91

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 09/12/91

GPC Cleanup: (Y/N) N pH: 4.5 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.	ALDOL CONDENSATE	6.00	~~200~~	~~JAB~~ K /
2.	ALDOL CONDENSATE	6.52	200	JA
3.	ALDOL CONDENSATE	7.27	200	JA
4.	UNKNOWN	20.06	200	J NJT

1B

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T007-W201

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: WATER Lab Sample ID: 9108L518-008

Sample wt/vol: 970 (g/mL) ML Lab File ID: J082916

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ dec. Date Extracted: 08/23/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 08/29/91

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

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

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

SEMIVOLATILE ORGANICS ANALYSIS SHEET

CLIENT SAMPLE NO.

08-T007-W201

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: WATER Lab Sample ID: 9108L518-008

Sample wt/vol: 970 (g/mL) ML Lab File ID: J082916

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ dec. Date Extracted: 08/23/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 08/29/91

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

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

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

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

08-T007-W201

Lab Name: Roy F. Weston, Inc. Work Order: 1771-15-02-0000

Client: NAVAL WEAPONS/COLTSNECK

Matrix: WATER Lab Sample ID: 9108L518-008

Sample wt/vol: 970 (g/mL) ML Lab File ID: J082916

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ dec. Date Extracted: 08/23/91

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 08/29/91

GPC Cleanup: (Y/N) N pH: 7.0 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.	CYCLOHEXENONE	6.00	4	~~JB~~
2.	UNKNOWN	25.49	4	J

ATTACHMENT 1
SOP NO. HW-6

PAGE __OF__

TOTAL REVIEW

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organics Analysis

Case No. 91BBL518 SDG No. ——— LABORATORY Fweston SITE COLTSNECK
LIONVILLE

DATA ASSESSMENT:

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

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

Reviewer's Signature: [signature] Date: 11 / 6 / 19 91

Verified By: [signature] Date: 11 / 8 / 19 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

11-6-91

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

SBLK-MB
91LE1086-MB1
08-T007-WD01 - R TIC#1

SBLK 91LE1113-MB1
08-T001-S001 - R TIC#1
08-T002-S002
08-T004-S001
08-T004-S101
08-T005-S001
08-T006-S001 - R TIC#1
08-T007-S001

B) Field or rinse blank contamination

Not identified

C) Water blank contamination

See above

D) Trip blank contamination

Not identified

ATTACHMENT 1
SOP NO. HW-6

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
11-7-91

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

1-7-91

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~~ Cont Cal 8-23-91 – No Samples
Hexachloroethane – 38.2% RSD
* Cont Cal 8-29-91 – SBLKLE1086-MB1, 08-T007-W201
J pos (>25% – <50%) Benzoic Acid, 2,4-Dinitrophenol
* Cont Cal 9-4-91 – SBLKLE1086-MB1 BS, BSD
J pos (>25% – <50%) 2-Methylnaphthalene
* Int Cal 9-11-91 – No Samples
Hexachlorocyclopentadiene 36.3% RSD
* Cont Cal 9-12-91 – All soil Samples + QA/QC
J pos (>25% – <50%) 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol

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

11-6-91

DATA ASSESSMENT:

7. INTERNAL STANDARDS PERFORMANCE:

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

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

No Action

11-7-91

DATA ASSESSMENT:

8. COMPOUND IDENTIFICATION:

A) VOLATILE AND SEMI-VOLATILE FRACTIONS:

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

B) PESTICIDE FRACTION:

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

No Action

[illegible]
11-7-91

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 water Blank Spike / Blank Spike Duplicate contained two (2) compounds with recoveries greater than QA/QC advisory limits. No Action required for the water sample. All soil % rec and % RPDs ok.

EMM

11-7-91

ATTACHMENT 1
SOP NO. HW-6

PAGE__OF__

DATA ASSESSMENT:

10. OTHER QC DATA OUT OF SPECIFICATION:

None

11. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT:

System performance and overall quality is good. See case narrative.

12. CONTRACT PROBLEMS__X__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

SWM
11-7-91

DPO [ ] ACTION [ ] FYI

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO. 91084518 LABORATORY R.F. WESTON - LIONVILLE

SDG NO. — DATA USER R.F. WESTON / NAVY

SOW 2/88 Revs REVIEW COMPLETION DATE 11-6-91

NO. OF SAMPLES 1 WATER 7 SOIL ____ OTHER

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

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

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: ____

489

Attachment 3

REJECTION SUMMARY FORM

(No. of Compounds/No. of Fractions (Samples))

SOP NO: HW-6
Date: February 1989

Type of Review: CLP BNA / REGION II

Date: 11-6-91

Case #: 9108C578

Project: COLTS NECK NAVAL WEAPONS STATION

Lab Name: RF WESTON - LIONVILLE

Reviewer's Initials: [illegible]

Number of Samples: 8

Analytes Rejected Due to Exceeding Review Criteria:

	Surrogates	Holding Time	Calibration	Contamination	ID	Other (TIC contamination)	Total # Samples	Total # Rejected/ Total # in all Samples
Acids (15)	0	0	0	0	0	0	8	0/120
B/N (50)	0	0	0	0	0	8	8	8/400
VOA (35)								
PEST (20)								
PCB (7)								
TCDD (1)								

Analytes Estimated Due to Exceeding Review Criteria for:

Acids (15)	0	0	0	0	0	0	8	0/120
B/N (50)	0	0	0	0	0	0	8	0/400
VOA (35)								
PEST (20)								
PCB (7)								
TCDD (1)								

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 91081518

LAB: R.F. WESTON - LIONVILLE

SITE: COLDNECK NAVAL WEAPONS STATION

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

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

Does this package contain:

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

ACTION: Complete corresponding parts of checklist.

	YES	NO	N/A

PART B: BNA ANALYSES

0 Traffic Reports and Laboratory Narrative

1.1 Are the Traffic Report Forms present for all samples? [✓] ___ ___

ACTION: If no, contact lab for replacement of missing or illegible copies.

1.2 Do the Traffic Reports or Lab Narrative indicate any problems with sample receipt, condition of samples, analytical problems or special notations affecting the quality of the data? ___ [✓] ___

ACTION: Use professional judgement to evaluate the effect on the quality of the data.

ACTION: If any sample analyzed as a soil contains more than 50% water, all data should be flagged as estimated (J).

0 Holding Times

2.1 Have any BNA holding times, determined from date of collection to date of extraction, been exceeded? ___ [✓] ___

Samples for BNA analysis, both soils and waters, must be extracted within seven days of the date of collection. Extracts must be analyzed within 40 days of the date of extraction.

Table of Holding Time Violations

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

11-6-91

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

	YES	NO	N/A
If analyses were done more than 14 days beyond holding time, either on the first analysis or upon reanalysis, the reviewer must use professional judgement to determine the reliability of the data and the effects of additional storage on the sample results. The reviewer may determine that non-detect data are unusable ("R").			
.0 Surrogate Recovery (Form II)			
3.1 Are the BNA Surrogate Recovery Summaries (Form II) present for each of the following matrices:			
a. Low Water	✓		
b. Med Water			✓
c. Low Soil	✓		
d. Med Soil			✓
3.2 Are all the BNA samples listed on the appropriate Surrogate Recovery Summaries for each of the following matrices:			
a. Low Water	✓		
b. Med Water			✓
c. Low Soil	✓		
d. Med Soil			✓
ACTION: Call lab for explanation / resubmittals. If missing deliverables are unavailable, document effect on data under "Conclusions" section of reviewer narrative.			
3.3 Were outliers marked correctly with an asterisk?			✓
ACTION: Circle all outliers in red.			
3.4 Were two or more base-neutral OR acid surrogate recoveries out of specification for any sample or method blank?			✓
If yes, were samples reanalyzed?			✓
Were method blanks reanalyzed?			✓

ACTION: If all BNA surrogate recoveries are > 10% but two within the base-neutral or acid fraction do not meet SOW specifications, for the affected fraction only (i.e. base-neutral OR acid compounds):

1. Flag all positive results as estimated ("J").
2. Flag all non-detects as estimated detection limits ("UJ").

	YES	NO	N/A
If any base-neutral or acid surrogate has a recovery of <10% : 1. Flag all positive results for that fraction (i.e. all acid or base-neutral compounds) "J". 2. Flag all non-detects for that fraction "R". Professional judgement should be used to qualify data that have method blank surrogate recoveries out of specification in both original and re-analyses. Check the internal standard areas.			
3.5 Are there any transcription/calculation errors between raw data and Form II? ACTION: If large errors exist, call lab for explanation / resubmittal, make any necessary corrections and note errors under "Conclusions".		✓	✗ EMW 11-6-91

.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 65+BD	✓		
b. Med Water			✓
c. Low Soil	✓		
d. Med Soil			✓

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

4.3 How many BNA spike recoveries are outside QC limits?

Water	Soils
2 out of 22	Ø out of 22

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

Water	Soils
Ø out of 11	Ø out of 11

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

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

YES NO N/A

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

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

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

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

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

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

Not identified.

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

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

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

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

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

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

DATE	TIME	INSTRUMENT	SAMPLE NUMBERS

11-7-91

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

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

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

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

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

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

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

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

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:

	YES	NO	N/A
a. Samples and/or fractions as appropriate	✓		
b. Matrix spikes and matrix spike duplicates	✓		
c. Blanks	✓		

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

	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 "R" qualifier to all identified TIC compounds on Form I, Part B.			
9.3 Are any TCL compounds (from any fraction) listed as TIC compounds (example: 1,2-dimethylbenzene is xylene—a VOA TCL—and should not be reported as a TIC)?		✓	
ACTION: Flag with "R" any TCL compound listed as a TIC.			
9.4 Are all ions present in the reference mass spectrum with a relative intensity greater than 10% also present in the sample mass spectrum?	✓		
9.5 Do TIC and "best match" standard relative ion intensities agree within 20%?	✓		
ACTION: Use professional judgement to determine acceptability of TIC identifications. If it is determined that an incorrect identification was made, change identification to "unknown" or to some less specific identification (example: "C3 substituted benzene") as appropriate.			
10.0 Compound Quantitation and Reported Detection Limits			
10.1 Are there any transcription / calculation errors in Form I results? Check at least two positive values. Verify that the correct internal standard, quantitation ion, and RRF were used to calculate Form I result. Were any errors found?		✓	
10.2 Are the CRQLs adjusted to reflect sample dilutions and, for soils, sample moisture?	✓		

	YES	NO	N/A

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

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQL data from the diluted sample analysis). Replace concentrations that exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with data from the analysis of diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including any in the summary package.

11.0 Standards Data (GC/MS)

	YES	NO	N/A
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)

	YES	NO	N/A
12.1 Are the Initial Calibration Forms (Form VI) present and complete for the BNA fraction?	[✓]	___	___

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

	YES	NO	N/A
12.2 Are response factors stable for BNAs over the concentration range of the calibration (RSD <30%)?	[ ]	[✓]	___

ACTION: Circle all outliers in red.

ACTION: When RSD >30%, non-detects may be qualified using professional judgement. Flag all positive results "J". When RSD >90%, flag all non-detects as unusable ("R"). (Region II policy.)

	YES	NO	N/A
12.3 Do any compounds have a RRF < 0.05?	___	[✓]	___

ACTION: Circle all outliers in red.

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

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

ACTION: Circle errors in red.

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

13.0 GC/MS Continuing Calibration (Form VII)

13.1 Are the Continuing Calibration Forms (Form VII) present and complete for the BNA fraction?	✓		
13.2 Has a continuing calibration standard been analyzed for every twelve hours of sample analysis per instrument?	✓		

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

_____

_____

_____

11-7-91

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?		✓	

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%?	✓		

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

YES NO N/A

% DIFFERENCE

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

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

ACTION: Circle errors in red.

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

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

(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
5.0 Field Duplicates			
15.1 Were any field duplicates submitted for BNA analysis?	[ ]		✓

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

Not identified.

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