0067701

# SAF-F03-007
# 200-PW-2/200-PW-4 OU - QC Sampling
# FINAL DATA PACKAGE

**FAX RESULTS TO:**

Larry Hulstrom N/A
INITIAL/DATE

**VERIFICATION OF CLIENT RECEIPT:**

Phone or CC:Mail to Larry Hulstrom 06/12/03 DEA
INITIAL/DATE

**MAIL COMPLETE COPY OF DATA PACKAGE TO:**

Larry Hulstrom E6-35 SCANNED COPY SENT 06/12/03DEA
INITIAL/DATE

**COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)**

SDG WSCF20030567 SAF-F03-006

☐ Rad only ☐ Chem only ☑ Rad & Chem

☑ Complete ☐ Partial

RECEIVED
NOV 16 2005
EDMC

# SAMPLE DISPOSITION RECORD

ORIGINAL
Dayes

**SDR No.:** F03-022
**Revision No.:** 0
**Date Initiated:** 08/25/2003

**Sample Event Information**

**SAF:** F03-007

**OU:** 200-PW-2/200-PW-4

**Project:** CPP 200 Area

**Sampling Event:** 200-PW-2/200-PW-4 OU - QC Sampling

**Laboratory:** Waste Sampling and Characterization Facility

**Sampling Information**

**Number of Samples:** 4

**ID Numbers:** B16LD9-A, B16WC0, B171B1, B171B2

**Matrix:** WATER

**Collection Date:** 03/19/2003 - 05/21/2003

**Issue Background**

**Class** ☐ Project Data Use ☒ General Laboratory Direction ☐ Validation Direction ☐ General Sample Management Direction

**Type:** Other

**Description:**

Uranium-233/234 Reported As Uranium-234

**Disposition**

**Description:**

Isotopic analysis results for uranium-233 and uranium-234 have been reported by the WSCF laboratory as uranium-234. Because uranium-233 and uranium-234 cannot be isotopically distinguished using standard alpha energy analysis, the laboratory should be reporting results as uranium-233/234. Uranium-234 results reported for the listed samples should have been reported as uranium-233/234.

**Justification:**

Uranium-233 and uranium-234 cannot be isotopically distinguished using alpha energy analysis. The therefore, these results should be reported as uranium-233/234.

**Approval Signatures**

SJ Trent — 10/29/03
**Project Coordinator (Print/Sign Name)** — **Date**

LC Hulstrom — 2/20/04
**Task Manager (Print/Sign Name)** — **Date**



A-6003-640 (03/03)

# SAMPLE DISPOSITION RECORD

ORIGINAL
Dayes

**SDR No.:** F03-027
**Revision No.:** 0
**Date Initiated:** 09/23/2003

**Sample Event Information**

**SAF:** F03-006

**OU:** 200-PW-2/200-PW-4

**Project:** CPP 200 Area

**Sampling Event:** 200-PW-2/200-PW-4 OU - QC Sampling

**Laboratory:** Waste Sampling and Characterization Facility

**Sampling Information**

**Number of Samples:** 2

**ID Numbers:** B16LD9-A, B16WC0

**Matrix:** Water

**Collection Date:** 03/19/2003 - 04/23/2003

**Issue Background**

**Class** ☒ Project Data Use ☐ General Laboratory Direction ☐ Validation Direction ☐ General Sample Management Direction

**Type:** Other

**Description:**

Gamma Spectroscopy Reanalysis

**Disposition**

**Description:**

Several samples required a Gamma Spectroscopy reanalysis because the laboratory did not run all the required quality control analyses.

**Justification:**

Reanalysis required to insure that the Gamma Spectroscopy results would pass the GPP data validation requirements.

**Approval Signatures**

SJ Trent — 01/12/04
**Project Coordinator (Print/Sign Name)** — **Date**

LC Hulstrom — 2/20/04
**Task Manager (Print/Sign Name)** — **Date**



A-6003-640 (03/03)

Fluor Hanford, Inc.
Post Office Box 1000
Richland, Washington 99352

**FLUOR**

# Memorandum

T4180-03-SLF-004

| | | | | |
|---|---|---|---|---|
| To: | S. J. Trent | | Date: | June 9, 2003 |
| From: | S. L. Fitzgerald, Manager<br>WSCF Analytical Services | | Telephone: | 373-7495 |
| | W/Attachments | | W/O Attachments | |
| cc: | T. F. Dale | S3-28 | C. M. Caprio | S3-30 |
| | S. L. Fitzgerald | S3-30 | D. L. Renberger | S3-30 |
| | H. K. Meznarich | S3-30 | L. C. Swanson | E6-35 |
| | J. E. Trechter | S3-30 | File/LB | |
| | M. Neely | S3-30 | | |

Subject: FINAL RESULTS FOR 200-PW-2/200-PW-4 OU– SAMPLE DELIVERY GROUP WSCF20030567- SAF NUMBER F03-007

References: (1) Groundwater Protection Program-Letter of Instruction, FH-EIS-2003-MEN-001, October 31, 2002

(2) HNF-SD-CD-QAPP-017, Rev. 5, Waste Sampling and Characterization Facility Quality Assurance Plan

This letter contains a narrative (Attachment 1) for the sample delivery group (WSCF20030567), the analytical results (Attachment 2) and the sample receipt information (Attachment 3).

slf/ddw

Attachments 3

JUN 2003
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T4180-03-SLF-004

ATTACHMENT 1

**NARRATIVE**

Consisting of 3 pages
Cover page not included

| | |
|---|---|
| **Sample Delivery Group** | **WSCF20030567** |
| **Sample Matrix** | **Water** |
| **Sample Visual** | **Clear** |
| **SAF Number** | **F03-007** |
| **Data Deliverable** | **Summary Report** |

## Introduction

One (1) water sample (B16WC0) from the GPP was received at the WSCF Laboratory on April 23, 2003. The sample was analyzed for those analytes indicated on the attached copy of the chain of custody (COC) form in accordance with the *Groundwater Protection Program- Letter of Instruction*, referenced in the cover letter.

The narrative (Attachment 1) will address sample characteristics, analyses requested and general information in performance of the analytical methods. A Data Summary Report (Attachment 2) includes analytical results, a comment report detailing method abnormalities, tentatively identified peaks if applicable, method references, and Laboratory QC information. Copies of the chain of custody and Request for Sample Analysis forms are included as Attachment 3.

## Analytical Methodology for Requested Analyses

- PCB's by EPA SW-846 Method 8082. Analytical work was performed with no deviations to the approved method.

- ICP-MS Metals by EPA Method 200.8 and ICP-AES Metals by EPA SW-846 Method 6010A. Analytical work was performed with no deviations to the approved methods.

- VOA's by EPA SW-846 Method 8260A. Analytical work was performed with no deviations to the approved method. The 1-Butanol requested under EPA SW-846 Method 8015 was reported under this method. The Benzyl alcohol requested under this method was reported under EPA SW-846 Method 8270B.

- Semi-VOA's by EPA SW-846 Method 8270B. Analytical work was performed with no deviations to the approved method. The Benzyl alcohol requested under EPA SW-846 Method 8260A was reported under this method.

- Alcohols and Glycols by EPA SW-846 Method 8015. Analytical work was performed with no deviations to the approved method. The 1-Butanol requested under this method was reported under EPA SW-846 Method 8260A.

- WTPH-D by WDOE Method NWTPH-Dx. Analytical work was performed with no deviations to the approved method.

- WTPH-G by WDOE Method NWTPH-Gx. Analytical work was performed with no deviations to the approved method.

- IC Anions and NH4 by EPA SW-846 Methods 300.0 and 300.7. Analytical work was performed with no deviations to the approved method for Anions and NH4.

- CN by EPA SW-846 Method 9010. Analytical work was performed with no deviations to the approved method.

- Cr+6 by EPA SW-846 Method 7196. Analytical work was performed with no deviations to the approved method.

- All RadChem analyses ( AEA's, GEA) were run by WSCF internal WDOE accredited procedures. Analytical work was performed with no deviations to the approved method.

**Comments**

PCB's – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-36 for QC details.

ICP-MS and ICP-AES Metals – The hold time(s) for these analyses were met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-23, 2-24, and 2-37 for QC details.

VOA's – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-40 and 2-41 for QC details.

Semi-VOA's – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-32, 2-33, 2-34 and 2-35 for QC details.

Alcohols and Glycols – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-39 for QC details.

WTPH-D – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-29 for details.

WTPH-G – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-38 for details.

IC Anions – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-19 and 2-20 for QC details.

NH4 – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-21 for QC details.

CN – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-25 for QC details.

Cr+6 – The hold time(s) for this analysis was met. A Laboratory Control Sample, Matrix Spike and Matrix Spiked Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-26 for QC details.

RadChem – There are no hold times associated with these methods. Except for GEA, a Laboratory Control Sample and Duplicate were analyzed with each delivery group per the GPP Letter of Instruction. See page(s) 2-22, 2-27, 2-28, 2-30, and 2-31 for QC details.

This Summary Report is in compliance with the SOW, both technically and for completeness. Release of the data contained in this hard copy report has been authorized by the WSCF Laboratory Analytical Manager and Client Services, as verified by the following signature.

Troy Dale
WSCF Production Control

Abbreviations

Hg – Mercury
IC – Ion Chromatography
ICP – Inductively Coupled Plasma
ICP/AES – ICP/Atomic Emission Spectroscopy
ICP/MS – ICP/Mass Spectrometry
Total U – Total Uranium
AT/TB – Total Alpha/Total Beta
AEA – Alpha Energy Analysis
WTPH-G – Total Hydrocarbons-Gasoline
CN - Cyanide
Am – Americium
Cm - Curium
Pu – Plutonium
Np – Neptunium
GEA – Gamma Energy Analysis
H3 – Tritium
Sr – Strontium 89, 90
WTPH-D – Total Hydrocarbons-Diesel
Cr+6 – Hexavalent Chromium
NH4 - Ammonium

T4180-03-SLF-004

ATTACHMENT 2

**ANALYTICAL RESULTS**

Consisting of 41 pages
Cover page not included

# WSCF
# ANALYTICAL RESULTS REPORT

**for**

**Ground Water Protection Program**

**Richland, WA 99352**

**Attention: Steve Trent**

Analytical: _____

Client Services: _____

Contract#: F03-007
Report#: WSCF20030567
Report Date: 30-may-2003
*Report W004/ver. 5.1*
*Ground Water Protection Program*

# WSCF
# ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Recei |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 | TRENT | 7664-41-7 | Ammonia (N) by IC | WATER | LA-503-401 | U | < 4.00e-03 | mg/L | 1.00 | 4.0e-03 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 57-12-5 | Cyanide by Midi/Spectrophotom | WATER | LA-695-402 | U | < 4.00 | ug/L | | 4.0 | 05/06/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 18540-29-9 | Hexavalent chromium | WATER | LA-265-403 | U | < 2.00e-03 | ug/mL | | 2.0e-03 | 05/07/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 540-51-2 | 2-Bromoethanol | WATER | Organics | | 2.00e+04 | ug/L | | 5.0e+03 | 05/06/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 60-29-7 | Diethyl ether | WATER | Organics | U | < 5.00e+03 | ug/L | | 5.0e+03 | 05/06/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 107-21-1 | Ethylene glycol | WATER | Organics | U | < 5.00e+03 | ug/L | | 5.0e+03 | 05/06/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 67-56-1 | Methanol | WATER | Organics | U | < 1.00e+03 | ug/L | | 1.0e+03 | 05/06/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 14596-10-2 | Am-241 by AEA | WATER | LA-508-471 | | 0.210 | pCi/L | | 0.13 | 05/01/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Am-241 by AEA Total Cntg Error | WATER | LA-508-471 | | 48.0 | % | | 0.0 | 05/01/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 24959-67-9 | Bromide (Br) by IC | WATER | LA-533-410 | U | < 0.0450 | mg/L | 1.00 | 0.045 | 04/24/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 16887-00-6 | Chloride (Cl) by IC | WATER | LA-533-410 | U | < 0.0140 | mg/L | 1.00 | 0.014 | 04/24/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 16984-48-8 | Fluoride (F) by IC | WATER | LA-533-410 | U | < 7.00e-03 | mg/L | 1.00 | 7.0e-03 | 04/24/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | NO3-N | Nitrate (N) by IC | WATER | LA-533-410 | U | < 5.00e-03 | mg/L | 1.00 | 5.0e-03 | 04/24/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | NO2-N | Nitrite (N) by IC | WATER | LA-533-410 | U | < 9.00e-03 | mg/L | 1.00 | 9.0e-03 | 04/24/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 14265-44-2 | Phosphate (P) by IC | WATER | LA-533-410 | U | < 0.0130 | mg/L | 1.00 | 0.013 | 04/24/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 14808-79-8 | Sulfate (SO4) by IC | WATER | LA-533-410 | U | < 0.0240 | mg/L | 1.00 | 0.024 | 04/24/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Ac-228 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 1.00e+03 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 14331-83-0 | Ac-228 by GEA | WATER | LA-508-462 | U | 1.27 | pCi/L | | 26 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Am-241 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 309 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 14596-10-2 | Am-241 by GEA | WATER | LA-508-462 | U | -7.43 | pCi/L | | 37 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Bi-212 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 1.00e+03 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 14913-49-6 | Bi-212 by GEA | WATER | LA-508-462 | U | -2.10 | pCi/L | | 59 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Bi-214 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 16.4 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 14733-03-0 | Bi-214 by GEA | WATER | LA-508-462 | | 184 | pCi/L | | 16 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Ce-144 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 1.00e+03 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 14762-78-8 | Ce-144 by GEA | WATER | LA-508-462 | U | -2.15 | pCi/L | | 52 | 04/28/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Co-60 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 194 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/C |

**MDL=Minimum Detection Limit** U - Analyzed for but not detected above limiting criteria.
**RQ=Result Qualifier**

**DF=Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL RESULTS REPORT

2 - 3

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Recei |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 | TRENT | 10198-40-0 | Co-60 by GEA | WATER | LA-508-462 | U | 1.92 | pCi/L | | 7.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Cs-134 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 717 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 13967-70-9 | Cs-134 by GEA | WATER | LA-508-462 | U | -0.616 | pCi/L | | 7.6 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Cs-137 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 100 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 10045-97-3 | Cs-137 by GEA | WATER | LA-508-462 | U | -4.55 | pCi/L | | 7.1 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Eu-152 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 516 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 14683-23-9 | Eu-152 by GEA | WATER | LA-508-462 | U | 2.98 | pCi/L | | 25 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Eu-154 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 102 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 15585-10-1 | Eu-154 by GEA | WATER | LA-508-462 | U | -11.6 | pCi/L | | 20 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Eu-155 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 540 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 14391-16-3 | Eu-155 by GEA | WATER | LA-508-462 | U | -2.81 | pCi/L | | 26 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Nb-94 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 78.0 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 14681-63-1 | Nb-94 by GEA | WATER | LA-508-462 | U | 5.60 | pCi/L | | 8.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Pb-212 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 190 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 15092-94-1 | Pb-212 by GEA | WATER | LA-508-462 | U | -5.49 | pCi/L | | 15 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Pb-214 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 19.6 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 15067-28-4 | Pb-214 by GEA | WATER | LA-508-462 | | 142 | pCi/L | | 18 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Ra-226 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 16.4 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 13982-63-3 | Ra-226 by GEA | WATER | LA-508-462 | | 184 | pCi/L | | 16 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Ra-228 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 1.00e+03 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 15262-20-1 | Ra-228 by GEA | WATER | LA-508-462 | U | 1.27 | pCi/L | | 26 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Ru-103 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 569 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 13968-53-1 | Ru-103 by GEA | WATER | LA-508-462 | U | 0.803 | pCi/L | | 8.1 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Ru-106 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 1.00e+03 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 13967-48-1 | Ru-106 by GEA | WATER | LA-508-462 | U | 3.94 | pCi/L | | 72 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | E,T,C | Sb-125 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 466 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 | TRENT | 14234-35-6 | Sb-125 by GEA | WATER | LA-508-462 | U | -2.96 | pCi/L | | 23 | 04/28/03 | 04/23/03 | 04/23/( |

**MDL=Minimum Detection Limit** U - Analyzed for but not detected above limiting criteria.
**RQ=Result Qualifier**

**DF=Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Recei |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 TRENT | E,T,C | Sn-113 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 324 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 13966-06-8 | Sn-113 by GEA | WATER | LA-508-462 | U | -1.93 | pCi/L | | 10 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | E,T,C | Sn-126 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 94.9 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 15832-50-5 | Sn-126 by GEA | WATER | LA-508-462 | U | 12.5 | pCi/L | | 20 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | E,T,C | Th-234 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 170 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 15065-10-8 | Th-234 by GEA | WATER | LA-508-462 | U | -116 | pCi/L | | 3.1e+02 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | E,T,C | Tl-208 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 581 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 14913-50-9 | Tl-208 by GEA | WATER | LA-508-462 | U | 0.801 | pCi/L | | 8.2 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | E,T,C | U-235 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 203 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 15117-96-1 | U-235 by GEA | WATER | LA-508-462 | U | -16.6 | pCi/L | | 57 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | E,T,C | Zn-65 Rel.% Count Error (GEA) | WATER | LA-508-462 | | 168 | % | | 0.0 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 13982-39-3 | Zn-65 by GEA | WATER | LA-508-462 | U | 6.43 | pCi/L | | 17 | 04/28/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-69-9 | Bismuth by ICP | WATER | LA-505-411 | U | < 100 | ug/L | 1.00 | 1.0e+02 | 05/20/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-~~50-8~~ 42-8 | Boron by ICP D [illegible] 12/11/03 | WATER | LA-505-411 | U | < 102.0 | ug/L | 1.00 | 102.0 | 05/20/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7429-90-5 | Aluminum by ICP-MS | WATER | LA-505-412 | | 17.8 | ug/L | 1.25 | 14 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-36-0 | Antimony by ICP-MS | WATER | LA-505-412 | U | < 0.625 | ug/L | 1.25 | 0.62 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-38-2 | Arsenic by ICP-MS | WATER | LA-505-412 | U | < 0.375 | ug/L | 1.25 | 0.38 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-39-3 | Barium by ICP-MS | WATER | LA-505-412 | U | < 0.250 | ug/L | 1.25 | 0.25 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-41-7 | Beryllium by ICP-MS | WATER | LA-505-412 | U | < 0.375 | ug/L | 1.25 | 0.38 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-43-9 | Cadmium by ICP-MS | WATER | LA-505-412 | U | < 0.125 | ug/L | 1.25 | 0.12 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-47-3 | Chromium by ICP-MS | WATER | LA-505-412 | | 0.999 | ug/L | 1.25 | 0.38 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-48-4 | Cobalt by ICP-MS | WATER | LA-505-412 | U | < 0.250 | ug/L | 1.25 | 0.25 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7440-50-8 | Copper by ICP-MS | WATER | LA-505-412 | | 2.86 | ug/L | 1.25 | 0.62 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7439-92-1 | Lead by ICP-MS | WATER | LA-505-412 | U | < 1.50 | ug/L | 1.25 | 1.5 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7439-96-5 | Manganese by ICP-MS | WATER | LA-505-412 | | 0.589 | ug/L | 1.25 | 0.38 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7439-97-6 | Mercury by ICP-MS | WATER | LA-505-412 | U | < 0.125 | ug/L | 1.25 | 0.12 | 05/02/03 | 04/23/03 | 04/23/( |
| W030000232 | B16WC0 TRENT | 7439-98-7 | Molybdenum by ICP-MS | WATER | LA-505-412 | U | < 0.375 | ug/L | 1.25 | 0.38 | 05/02/03 | 04/23/03 | 04/23/( |

**MDL = Minimum Detection Limit** U - Analyzed for but not detected above limiting criteria.
**RQ = Result Qualifier**

**DF = Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL RESULTS REPORT

0000032
2-5

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Recei |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 | TRENT | 7440-02-0 | Nickel by ICP-MS | WATER | LA-505-412 | | 2.47 | ug/L | 1.25 | 0.62 | 05/02/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 7782-49-2 | Selenium by ICP-MS | WATER | LA-505-412 | U | < 0.375 | ug/L | 1.25 | 0.38 | 05/02/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 7440-22-4 | Silver by ICP-MS | WATER | LA-505-412 | U | < 0.250 | ug/L | 1.25 | 0.25 | 05/02/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 7440-28-0 | Thallium by ICP-MS | WATER | LA-505-412 | U | < 0.125 | ug/L | 1.25 | 0.12 | 05/02/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 7440-29-1 | Thorium by ICP-MS | WATER | LA-505-412 | U | < 0.250 | ug/L | 1.25 | 0.25 | 05/02/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 7440-61-1 | Uranium by ICP-MS | WATER | LA-505-412 | U | < 0.125 | ug/L | 1.25 | 0.12 | 05/02/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 7440-62-2 | Vanadium by ICP-MS | WATER | LA-505-412 | U | < 0.500 | ug/L | 1.25 | 0.50 | 05/02/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 7440-66-6 | Zinc by ICP-MS | WATER | LA-505-412 | U | < 5.00 | ug/L | 1.25 | 5.0 | 05/02/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | TPH-G | Total Pet. Hydrocarbons Gas | WATER | NWTPH | U | < 50.0 | ug/L | | 50 | 05/06/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 12674-11-2 | Aroclor-1016 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 11104-28-2 | Aroclor-1221 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 11141-16-5 | Aroclor-1232 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 53469-21-9 | Aroclor-1242 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 12672-29-6 | Aroclor-1248 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 11097-69-1 | Aroclor-1254 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 11096-82-5 | Aroclor-1260 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 37324-23-5 | Aroclor-1262 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 11100-14-4 | Aroclor-1268 | WATER | LA-523-427 | U | < 0.110 | ug/L | 1.00 | 0.11 | 05/14/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 13981-16-3 | Pu-238 by AEA | WATER | LA-508-471 | U | 0.0140 | pCi/L | | 0.13 | 05/01/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Pu-238 by AEA Total Cntg Error | WATER | LA-508-471 | | 510 | % | | 0.0 | 05/01/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Pu-239/240 AEA Total Cntg Err | WATER | LA-508-471 | | 110 | % | | 0.0 | 05/01/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | PU-239/240 | Pu-239/240 by AEA | WATER | LA-508-471 | U | 0.0240 | pCi/L | | 0.036 | 05/01/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 13982-63-3 | Ra-226 Rel.% Count Error (AEA) | WATER | LA-508-471 | | 55.0 | % | | 0.0 | 05/07/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 13982-63-3 | Ra-226 by AEA | WATER | LA-508-471 | | 0.0800 | pCi/L | | 0.065 | 05/07/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | E,T,C | Ra-228 Rel.% Count Error (GEA) | WATER | LA-508-481 | | 215 | % | | 0.0 | 05/07/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 15262-20-1 | Ra-228 by GEA | WATER | LA-508-481 | U | 1.10 | pCi/L | | 4.6 | 05/07/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 | TRENT | 120-82-1 | 1,2,4-Trichlorobenzene | WATER | LA-523-456 | U | < 3.40 | ug/L | 1.00 | 3.4 | 05/05/03 | 04/23/03 | 04/23/C |

**MDL=Minimum Detection Limit** U - Analyzed for but not detected above limiting criteria.
**RQ=Result Qualifier**

**DF=Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL RESULTS REPORT

2-6

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Recei |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 TRENT | 95-50-1 | 1,2-Dichlorobenzene (SV) | WATER | LA-523-456 | U | < 4.80 | ug/L | 1.00 | 4.8 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 541-73-1 | 1,3-Dichlorobenzene | WATER | LA-523-456 | U | < 6.00 | ug/L | 1.00 | 6.0 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 106-46-7 | 1,4-Dichlorobenzene (SV) | WATER | LA-523-456 | U | < 5.70 | ug/L | 1.00 | 5.7 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 95-95-4 | 2,4,5-Trichlorophenol | WATER | LA-523-456 | U | < 2.20 | ug/L | 1.00 | 2.2 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 88-06-2 | 2,4,6-Trichlorophenol | WATER | LA-523-456 | U | < 2.80 | ug/L | 1.00 | 2.8 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 120-83-2 | 2,4-Dichlorophenol | WATER | LA-523-456 | U | < 1.60 | ug/L | 1.00 | 1.6 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 105-67-9 | 2,4-Dimethylphenol | WATER | LA-523-456 | U | < 4.90 | ug/L | 1.00 | 4.9 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 51-28-5 | 2,4-Dinitrophenol | WATER | LA-523-456 | U | < 3.80 | ug/L | 1.00 | 3.8 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 121-14-2 | 2,4-Dinitrotoluene | WATER | LA-523-456 | U | < 2.10 | ug/L | 1.00 | 2.1 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 606-20-2 | 2,6-Dinitrotoluene | WATER | LA-523-456 | U | < 2.50 | ug/L | 1.00 | 2.5 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 111-76-2 | 2-Butoxyethanol | WATER | LA-523-456 | U | < 3.60 | ug/L | 1.00 | 3.6 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 91-58-7 | 2-Chloronaphthalene | WATER | LA-523-456 | U | < 2.60 | ug/L | 1.00 | 2.6 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 95-57-8 | 2-Chlorophenol | WATER | LA-523-456 | U | < 2.00 | ug/L | 1.00 | 2.0 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 91-57-6 | 2-Methylnaphthalene | WATER | LA-523-456 | U | < 2.20 | ug/L | 1.00 | 2.2 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 95-48-7 | 2-Methylphenol | WATER | LA-523-456 | U | < 2.60 | ug/L | 1.00 | 2.6 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 88-74-4 | 2-Nitroaniline | WATER | LA-523-456 | U | < 2.40 | ug/L | 1.00 | 2.4 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 88-75-5 | 2-Nitrophenol | WATER | LA-523-456 | U | < 2.30 | ug/L | 1.00 | 2.3 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 108-39-4 | 3 & 4 Methylphenol Total | WATER | LA-523-456 | U | < 3.70 | ug/L | 1.00 | 3.7 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 91-94-1 | 3,3'-Dichlorobenzidine | WATER | LA-523-456 | U | < 4.70 | ug/L | 1.00 | 4.7 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 99-09-2 | 3-Nitroaniline | WATER | LA-523-456 | U | < 5.20 | ug/L | 1.00 | 5.2 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 534-52-1 | 4,6-Dinitro-2-methylphenol | WATER | LA-523-456 | U | < 2.00 | ug/L | 1.00 | 2.0 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 101-55-3 | 4-Bromophenyl-phenylether | WATER | LA-523-456 | U | < 2.20 | ug/L | 1.00 | 2.2 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 59-50-7 | 4-Chloro-3-methylphenol | WATER | LA-523-456 | U | < 1.50 | ug/L | 1.00 | 1.5 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 106-47-8 | 4-Chloroaniline | WATER | LA-523-456 | U | < 8.30 | ug/L | 1.00 | 8.3 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 7005-72-3 | 4-Chlorophenyl-phenylether | WATER | LA-523-456 | U | < 2.50 | ug/L | 1.00 | 2.5 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 100-01-6 | 4-Nitroaniline | WATER | LA-523-456 | U | < 3.30 | ug/L | 1.00 | 3.3 | 05/05/03 | 04/23/03 | 04/23/C |
| W030000232 | B16WC0 TRENT | 100-02-7 | 4-Nitrophenol | WATER | LA-523-456 | U | < 1.60 | ug/L | 1.00 | 1.6 | 05/05/03 | 04/23/03 | 04/23/C |

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**RQ=Result Qualifier**

**DF=Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL RESULTS REPORT

00000034
2-7

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Recei |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 | TRENT | 83-32-9 | Acenaphthene | WATER | LA-523-456 | U | < 2.80 | ug/L | 1.00 | 2.8 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 208-96-8 | Acenaphthylene | WATER | LA-523-456 | U | < 2.60 | ug/L | 1.00 | 2.6 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 120-12-7 | Anthracene | WATER | LA-523-456 | U | < 2.30 | ug/L | 1.00 | 2.3 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 56-55-3 | Benzo(a)anthracene | WATER | LA-523-456 | U | < 2.40 | ug/L | 1.00 | 2.4 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 50-32-8 | Benzo(a)pyrene | WATER | LA-523-456 | U | < 2.20 | ug/L | 1.00 | 2.2 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 205-99-2 | Benzo(b)fluoranthene | WATER | LA-523-456 | U | < 2.00 | ug/L | 1.00 | 2.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 191-24-2 | Benzo(g,h,i)perylene | WATER | LA-523-456 | U | < 2.90 | ug/L | 1.00 | 2.9 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 207-08-9 | Benzo(k)fluoranthene | WATER | LA-523-456 | U | < 3.20 | ug/L | 1.00 | 3.2 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 100-51-6 | Benzyl alcohol | WATER | LA-523-456 | U | < 2.10 | ug/L | 1.00 | 2.1 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 117-81-7 | Bis (2-Ethylhexyl) phthalate | WATER | LA-523-456 | U | < 3.00 | ug/L | 1.00 | 3.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 108-60-1 | Bis(2-Chloro-1-methylene) | WATER | LA-523-456 | U | < 2.40 | ug/L | 1.00 | 2.4 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 85-68-7 | Butylbenzylphthalate | WATER | LA-523-456 | U | < 2.30 | ug/L | 1.00 | 2.3 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 86-74-8 | Carbazole | WATER | LA-523-456 | U | < 1.60 | ug/L | 1.00 | 1.6 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 218-01-9 | Chrysene | WATER | LA-523-456 | U | < 2.60 | ug/L | 1.00 | 2.6 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 84-74-2 | Di-n-butylphthalate | WATER | LA-523-456 | U | < 2.40 | ug/L | 1.00 | 2.4 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 117-84-0 | Di-n-octylphthalate | WATER | LA-523-456 | U | < 2.90 | ug/L | 1.00 | 2.9 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 53-70-3 | Dibenzo(a,h)anthracene | WATER | LA-523-456 | U | < 3.00 | ug/L | 1.00 | 3.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 132-64-9 | Dibenzofuran | WATER | LA-523-456 | U | < 2.20 | ug/L | 1.00 | 2.2 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 84-66-2 | Diethylphthalate | WATER | LA-523-456 | U | < 7.20 | ug/L | 1.00 | 7.2 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 131-11-3 | Dimethylphthalate | WATER | LA-523-456 | U | < 2.40 | ug/L | 1.00 | 2.4 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 206-44-0 | Fluoranthene | WATER | LA-523-456 | U | < 2.40 | ug/L | 1.00 | 2.4 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 86-73-7 | Fluorene | WATER | LA-523-456 | U | < 2.30 | ug/L | 1.00 | 2.3 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 118-74-1 | Hexachlorobenzene | WATER | LA-523-456 | U | < 2.40 | ug/L | 1.00 | 2.4 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 87-68-3 | Hexachlorobutadiene | WATER | LA-523-456 | U | < 4.10 | ug/L | 1.00 | 4.1 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 77-47-4 | Hexachlorocyclopentadiene | WATER | LA-523-456 | U | < 9.00 | ug/L | 1.00 | 9.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 67-72-1 | Hexachloroethane | WATER | LA-523-456 | U | < 6.30 | ug/L | 1.00 | 6.3 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 193-39-5 | Indeno(1,2,3-cd)pyrene | WATER | LA-523-456 | U | < 3.00 | ug/L | 1.00 | 3.0 | 05/05/03 | 04/23/03 | 04/23/0 |

**MDL=Minimum Detection Limit** U - Analyzed for but not detected above limiting criteria.
**RQ=Result Qualifier**

**DF=Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL RESULTS REPORT

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Receiv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 | TRENT | 78-59-1 | Isophorone | WATER | LA-523-456 | U | < 2.20 | ug/L | 1.00 | 2.2 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 621-64-7 | N-Nitroso-di-n-propylamine | WATER | LA-523-456 | U | < 2.00 | ug/L | 1.00 | 2.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 86-30-6 | N-Nitrosodiphenylamine | WATER | LA-523-456 | U | < 2.60 | ug/L | 1.00 | 2.6 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 91-20-3 | Naphthalene | WATER | LA-523-456 | U | < 2.80 | ug/L | 1.00 | 2.8 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 98-95-3 | Nitrobenzene | WATER | LA-523-456 | U | < 2.30 | ug/L | 1.00 | 2.3 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 87-86-5 | Pentachlorophenol | WATER | LA-523-456 | U | < 2.00 | ug/L | 1.00 | 2.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 85-01-8 | Phenanthrene | WATER | LA-523-456 | U | < 2.50 | ug/L | 1.00 | 2.5 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 108-95-2 | Phenol | WATER | LA-523-456 | U | < 2.00 | ug/L | 1.00 | 2.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 129-00-0 | Pyrene | WATER | LA-523-456 | U | < 2.40 | ug/L | 1.00 | 2.4 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 126-73-8 | Tri-n-butylphosphate | WATER | LA-523-456 | U | < 2.90 | ug/L | 1.00 | 2.9 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 111-44-4 | bis(-2-Chloroethyl)Eth | WATER | LA-523-456 | U | < 3.90 | ug/L | 1.00 | 3.9 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 111-91-1 | bis(2-Chloroethoxy)methane | WATER | LA-523-456 | U | < 2.30 | ug/L | 1.00 | 2.3 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 13966-29-5 | U-234 by AEA | WATER | LA-508-471 | | 0.0900 | pCi/L | | 0.051 | 04/30/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | E,T,C | U-234 by AEA Total Cntg Error | WATER | LA-508-471 | | 54.0 | % | | 0.0 | 04/30/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 15117-96-1 | U-235 by AEA | WATER | LA-508-471 | U | 0.0140 | pCi/L | | 0.043 | 04/30/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | E,T,C | U-235 by AEA Total Cntg Error | WATER | LA-508-471 | | 180 | % | | 0.0 | 04/30/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 24678-82-8 | U-238 by AEA | WATER | LA-508-471 | | 0.0470 | pCi/L | | 0.012 | 04/30/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | E,T,C | U-238 by AEA Total Cntg Error | WATER | LA-508-471 | | 63.0 | % | | 0.0 | 04/30/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 71-55-6 | 1,1,1-Trichloroethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 79-34-5 | 1,1,2,2-Tetrachloroethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 79-00-5 | 1,1,2-Trichloroethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 75-34-3 | 1,1-Dichloroethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 75-35-4 | 1,1-Dichloroethene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 107-06-2 | 1,2-Dichloroethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 540-59-0 | 1,2-Dichloroethene (cis & tran | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 78-87-5 | 1,2-Dichloropropane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 71-36-3 | 1-Butanol | WATER | LA-523-455 | U | < 10.0 | ug/L | 1.00 | 10 | 05/05/03 | 04/23/03 | 04/23/0 |

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**RQ=Result Qualifier**

**DF=Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL RESULTS REPORT

00000036
2-9

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Receiv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 | TRENT | 78-93-3 | 2-Butanone | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 591-78-6 | 2-Hexanone | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 107-87-9 | 2-Pentanone | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 108-10-1 | 4-Methyl-2-pentanone | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 67-64-1 | Acetone | WATER | LA-523-455 | U | < 2.00 | ug/L | 1.00 | 2.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 71-43-2 | Benzene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 75-27-4 | Bromodichloromethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 75-25-2 | Bromoform | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 74-83-9 | Bromomethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 75-15-0 | Carbon Disulfide | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 56-23-5 | Carbon Tetrachloride | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 108-90-7 | Chlorobenzene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 75-00-3 | Chloroethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 67-66-3 | Chloroform | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 74-87-3 | Chloromethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 124-48-1 | Dibromochloromethane | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 100-41-4 | Ethylbenzene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 75-09-2 | Methylene Chloride | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 100-42-5 | Styrene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 127-18-4 | Tetrachloroethene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 108-88-3 | Toluene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 1330-20-7 | Total Xylenes | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 79-01-6 | Trichloroethene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 75-01-4 | Vinyl Chloride | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 10061-01-5 | cis-1,3-Dichloropropene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 104-51-8 | n-Butylbenzene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |
| W030000232 | B16WC0 | TRENT | 10061-02-6 | trans-1,3-Dichloropropene | WATER | LA-523-455 | U | < 1.00 | ug/L | 1.00 | 1.0 | 05/05/03 | 04/23/03 | 04/23/0 |

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**DF=Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL RESULTS REPORT

0000037
2-10

**Attention:** Steve Trent
**Project:** F03-007: 200-PW-2/PW-4

**Group #:** WSCF20030567

| Sample # | Client ID | | CAS # | Test Performed | Matrix | WSCF Method | RQ | Result | Unit | DF | MDL | Analyze | Sample | Receiv |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W030000232 | B16WC0 | TRENT | 8008-20-6 | Kerosene | WATER | NWTPH | U | < 280 | ug/L | 1.00 | 2.8e+02 | 05/06/03 | 04/23/03 | 04/23/0: |
| W030000232 | B16WC0 | TRENT | 68476-34-6 | Total Pet. Hydrocarbons Diesel | WATER | NWTPH | U | < 280 | ug/L | 1.00 | 2.8e+02 | 05/06/03 | 04/23/03 | 04/23/0: |
| W030000232 | B16WC0 | TRENT | 84-15-1 | ortho-Terphenyl | WATER | NWTPH | | 510 | ug/L | 1.00 | 5.7 | 05/06/03 | 04/23/03 | 04/23/0: |

**MDL=Minimum Detection Limit** U - Analyzed for but not detected above limiting criteria.
**RQ=Result Qualifier**

**DF=Dilution Factor**

* - Indicates results that have NOT been validated; + - Indicates more than six qualifier symbols

# WSCF
# ANALYTICAL COMMENT REPORT

00000038
2-11

**Attention:** Steve Trent
**Project Number** F03-007

**Group #:** WSCF20030567

| Sample # | Client ID | | Lab Area | Test | Comment |
|---|---|---|---|---|---|
| | | | VALGROUP | | ICP-MS: High LCS antimony recovery but since there was no antimony present, no flag was issued.<br>TPHD: Diesel recovery in the LCS is below limits, and Kerosene recoveries in the MS/MSD are also below control limits. It is believed that the extracts were concentrated by N2 blowdown rather than KD reflux. Blowdown causes loss of the more volatile kerosene and diesel while the less volatile surrogate,o-Terphenyl, is relatively unaffected. The reporting limit for diesel/kerosene is doubled to account for the potential loss of analyte during concentration but still meets required reporting limits for non-detected target compounds. cgc<br>SVOA: Surrogate Nitrobenzene-d5 is low in the MS at 58%. The SPK-RPD's for Nitrobenzene-d5, 2,4,6-Tribromophenol and 2-Fluorobiphenyl were out of limits. den<br>Sample W030000232 for Ra-226/228 had poor RPD. RPD is not applicable to low level samples.<br>W030000232 for Pu/Am/U had poor RPD. RPD is not applicable to low level samples.<br>PCB: The spike RPD (precision) is slightly greater than control limits for the surrogate, tetrachloro-meta-xylene.cc<br>ICP-AES: The LCS recovery for Bismuth was low (61.8%) but the matrix spikes were satisfactory and the result is acceptable -wwb |
| W030000232 | B16WC0 | TRENT | VALTEST | Anions by Ion Chromatography | IC: A small amount of nitrate-N was detected in the |

Lab Areas: VALGROUP - Group Validation; VALTEST - Test Validation; TESTDATA - Test Data Entry; LOGSAMP - Login for Sample; LOGTEST - Login for Tests

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# WSCF
# ANALYTICAL COMMENT REPORT

**Attention:** Steve Trent
**Project Number** F03-007

**Group #:** WSCF20030567

| Sample # | Client ID | Lab Area | Test | Comment |
|---|---|---|---|---|
| | | | | duplicate although nitrate-N was not detected in the sample. The amount of nitrate-N found in the duplicate was less than that of the lowest calibration level. |

Lab Areas: VALGROUP - Group Validation
LOGSAMP - Login for Sample
VALTEST - Test Validation
LOGTEST - Login for Tests
TESTDATA - Test Data Entry

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# WSCF
# TENTATIVELY IDENTIFIED PEAK REPORT

0000040
Z-13

**Attention:**
**Project Number** :

**Group #:** 20030567

| Sample # | Client ID | Test Name | Peak Name | CAS# | RT | RQ | Result | Units |
|---|---|---|---|---|---|---|---|---|

RQ=Result Qualifier

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# WSCF
# METHOD REFERENCES REPORT

00000041
2 - 14

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

| | | |
|---|---|---|
| **LA-265-403** | LA-265-403: Hexavalent Chromium analysis by Spectrophotometer | |
| | **EPA SW-846 7196** | HEXAVALENT CHROMIUM |
| **LA-503-401** | LA-503-401: ANALYSIS OF CATIONS BY ION CHROMATOGRAPHY | |
| | **EPA-600/4-86-024 300.7** | Dissolved Sodium, Ammonium, Potassium, and Calcium in Wet Deposition by Chemical |
| **LA-505-411** | LA-505-411: ELEMENTAL ANALYSIS BY INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPE | |
| | **EPA SW-846 6010B** | INDUCTIVELY COUPLED PLASMA-ATOMIC EMISSION SPECTROMETRY |
| **LA-505-412** | LA-505-412: DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY | |
| | **EPA-600/R-94-111 200.8** | DETERMINATION OF TRACE ELEMENTS IN WATERS AND WASTES BY INDUCTIVELY COUPLED PLAS |
| **LA-508-462** | Gamma Energy Analysis -- the Genie System -- WSCF | |
| | **None** | No reference to any industry method. |
| **LA-508-471** | LA-508-471: ALPHA ENERGY ANALYZER DATA ACQUISITION AND SYSTEM CHECKOUT USING ALP | |
| | **None** | No reference to any industry method. |
| **LA-508-481** | LA-508-481: GAMMA ENERGY ANALYSIS USING PROCOUNT SOFTWARE | |
| | **None** | No reference to any industry method. |
| **LA-523-427** | LA-523-427: POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY | |
| | **EPA SW-846 3510C** | SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION |
| | **EPA SW-846 3545** | PRESSURIZED FLUID EXTRACTION (PFE) |
| | **EPA SW-846 3665A** | SULFURIC ACID/PERMANGANATE CLEANUP |

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://apweb02/asponlinedocs/wscf/sample%20mgmt/ProcedureMethodCrossReference.pdf. This document includes on-line links to full-text versions of the procedures and methods, where available.

# WSCF
# METHOD REFERENCES REPORT

00000042
2-15

The results provided in this report were generated using the following WSCF Laboratory procedures. For your convenience, this table provides a listing of the regulatory or industry methods that are referenced by each of these WSCF procedures. Please note that the most recent version of the regulatory or industry method is listed here even though the WSCF procedure may reference an older version of the method. Also, a reference to a regulatory or industry method here does not necessarily indicate a verbatim implementation of that method.

| | | |
|---|---|---|
| | **EPA SW-846 8000B** | DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS |
| | **EPA SW-846 8082** | POLYCHLORINATED BIPHENYLS (PCBs) BY GAS CHROMATOGRAPHY |
| **LA-523-455** | LA-523-455: VOLATILE SAMPLE ANALYSIS BY SW-846 | |
| | **EPA SW-846 8000B** | DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS |
| | **EPA SW-846 8260B** | VOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS) |
| **LA-523-456** | LA-523-456: SEMIVOLATILE SAMPLE ANALYSIS BY SW-846, METHOD 8270C | |
| | **EPA SW-846 8000B** | DETERMINATIVE CHROMATOGRAPHIC SEPARATIONS |
| | **EPA SW-846 8270C** | SEMIVOLATILE ORGANIC COMPOUNDS BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS) |
| **LA-533-410** | LA-533-410: ANION ANALYSIS BY ION CHROMATOGRAPHY | |
| | **EPA-600/R-94-111 300** | DETERMINATION OF INORGANIC ANIONS BY ION CHROMATOGRAPHY |
| **LA-695-402** | LA-695-402: DETERMINATION OF CYANIDE BY MIDIDISTILLATION AND SPECTROPHOTOMETRIC | |
| | **EPA-600/4-79-020 335.2** | Cyanide, Total |
| **NWTPH** | NWTPH-Diesel and/or Gasoline | |
| | **WDOE NWTPH-Dx/Gx** | Total Petroleum Hydrocarbons - Diesel/Gasoline |
| **Organics** | Organics - Alcohols, Glycols | |
| | **EPA SW-846 8015B** | Nonhalogenated Organics Using GC/FID |

Note: A complete list of WSCF analytical procedures and referenced regulatory or industry methods is available online at http://apweb02/asponlinedocs/wscf/sample%20mgmt/ProcedureMethodCrossReference.pdf. This document includes on-line links to full-text versions of the procedures and methods, where available.

w13qlog v1 30-may-2003 14:29:20

W13q Worklist/Batch/QC Report for Group# WSCF20030567

| WL# | S# | Batch | QC# | Tray Type | Sample# | Test |
|---|---|---|---|---|---|---|
| 19252 | 2 | 19646 | 22316 | BLANK | | Anions by Ion Chromatography |
| 19252 | 11 | 19646 | 22316 | BLANK | | Anions by Ion Chromatography |
| 19252 | 3 | 19646 | 22316 | LCS | | Anions by Ion Chromatography |
| 19252 | 5 | 19646 | 22316 | DUP | W030000232 | Anions by Ion Chromatography |
| 19252 | 6 | 19646 | 22316 | MS | W030000232 | Anions by Ion Chromatography |
| 19252 | 7 | 19646 | 22316 | MSD | W030000232 | Anions by Ion Chromatography |
| 19252 | 4 | 19646 | 22316 | SAMPLE | W030000232 | Anions by Ion Chromatography |
| 19240 | 1 | 19635 | 22323 | SAMPLE | W030000232 | Gamma Energy Analysis-grd H2O |
| 19284 | 3 | 19673 | 22343 | LCS | | Ammonia (N) by IC |
| 19284 | 6 | 19673 | 22343 | DUP | W030000232 | Ammonia (N) by IC |
| 19284 | 7 | 19673 | 22343 | MS | W030000232 | Ammonia (N) by IC |
| 19284 | 8 | 19673 | 22343 | MSD | W030000232 | Ammonia (N) by IC |
| 19284 | 5 | 19673 | 22343 | SAMPLE | W030000232 | Ammonia (N) by IC |
| 19281 | 1 | 19678 | 22356 | BLANK | | Uranium Isotopics by AEA |
| 19281 | 2 | 19678 | 22356 | LCS | | Uranium Isotopics by AEA |
| 19281 | 3 | 19678 | 22356 | DUP | W030000232 | Uranium Isotopics by AEA |
| 19281 | 4 | 19678 | 22356 | SAMPLE | W030000232 | Uranium Isotopics by AEA |
| 19308 | 1 | 19702 | 22366 | BLANK | | ICP-2008 MS All possible metal |
| 19308 | 3 | 19702 | 22366 | LCS | | ICP-2008 MS All possible metal |
| 19308 | 4 | 19702 | 22366 | MS | W030000232 | ICP-2008 MS All possible metal |
| 19308 | 5 | 19702 | 22366 | MSD | W030000232 | ICP-2008 MS All possible metal |
| 19308 | 10 | 19702 | 22366 | SAMPLE | W030000232 | ICP-2008 MS All possible metal |
| | | | 22393 | BLANK | | Cyanide by Midi/Spectrophotom |
| | | | 22393 | BLNK-PREP | | Cyanide by Midi/Spectrophotom |
| | | | 22393 | DUP | | Cyanide by Midi/Spectrophotom |
| | | | 22393 | LCS | | Cyanide by Midi/Spectrophotom |
| | | | 22393 | LCS-2 | | Cyanide by Midi/Spectrophotom |
| | | | 22393 | MS | W030000232 | Cyanide by Midi/Spectrophotom |
| | | | 22393 | MSD | W030000232 | Cyanide by Midi/Spectrophotom |
| | | | 22393 | SAMPLE | W030000232 | Cyanide by Midi/Spectrophotom |
| | | | 22393 | SPK-RPD | W030000232 | Cyanide by Midi/Spectrophotom |
| | | | 22409 | BLANK | | Hexavalent chromium |
| | | | 22409 | DUP | | Hexavalent chromium |
| | | | 22409 | LCS | | Hexavalent chromium |
| | | | 22409 | MS | W030000232 | Hexavalent chromium |
| | | | 22409 | MSD | W030000232 | Hexavalent chromium |
| | | | 22409 | SAMPLE | W030000232 | Hexavalent chromium |
| | | | 22409 | SPK-RPD | W030000232 | Hexavalent chromium |
| 19257 | 2 | 19650 | 22416 | BLANK | | Ra-226 by AEA and GEA |
| 19257 | 4 | 19650 | 22416 | LCS | | Ra-226 by AEA and GEA |
| 19257 | 6 | 19650 | 22416 | DUP | W030000232 | Ra-226 by AEA and GEA |
| 19257 | 7 | 19650 | 22416 | SAMPLE | W030000232 | Ra-226 by AEA and GEA |
| 19257 | 1 | 19650 | 22416 | BLANK | | Ra-228 by GEA |
| 19257 | 3 | 19650 | 22416 | LCS | | Ra-228 by GEA |
| 19257 | 5 | 19650 | 22416 | DUP | W030000232 | Ra-228 by GEA |
| 19257 | 8 | 19650 | 22416 | SAMPLE | W030000232 | Ra-228 by GEA |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 22439 | BLANK | | WTPH-D TPH Diesel Range (Wa) |
| | | | 22439 | LCS | | WTPH-D TPH Diesel Range (Wa) |
| | | | 22439 | MS | W030000232 | WTPH-D TPH Diesel Range (Wa) |
| | | | 22439 | MSD | W030000232 | WTPH-D TPH Diesel Range (Wa) |
| | | | 22439 | SAMPLE | W030000232 | WTPH-D TPH Diesel Range (Wa) |
| | | | 22439 | SPK-RPD | W030000232 | WTPH-D TPH Diesel Range (Wa) |
| | | | 22439 | SURR | W030000232 | WTPH-D TPH Diesel Range (Wa) |
| 19292 | 1 | 19686 | 22448 | BLANK | | Americium by AEA |
| 19292 | 2 | 19686 | 22448 | LCS | | Americium by AEA |
| 19292 | 3 | 19686 | 22448 | DUP | W030000232 | Americium by AEA |
| 19292 | 4 | 19686 | 22448 | SAMPLE | W030000232 | Americium by AEA |
| 19293 | 1 | 19685 | 22449 | BLANK | | Plutonium Isotopics by AEA |
| 19293 | 2 | 19685 | 22449 | LCS | | Plutonium Isotopics by AEA |
| 19293 | 3 | 19685 | 22449 | DUP | W030000232 | Plutonium Isotopics by AEA |
| 19293 | 4 | 19685 | 22449 | SAMPLE | W030000232 | Plutonium Isotopics by AEA |
| | | | 22458 | BLANK | | SW-846 8270B Semi-Vols |
| | | | 22458 | LCS | | SW-846 8270B Semi-Vols |
| | | | 22458 | MS | W030000232 | SW-846 8270B Semi-Vols |
| | | | 22458 | MSD | W030000232 | SW-846 8270B Semi-Vols |
| | | | 22458 | SAMPLE | W030000232 | SW-846 8270B Semi-Vols |
| | | | 22458 | SPK-RPD | W030000232 | SW-846 8270B Semi-Vols |
| | | | 22458 | SURR | W030000232 | SW-846 8270B Semi-Vols |
| | | | 22507 | BLANK | | PCBs complete list |
| | | | 22507 | LCS | | PCBs complete list |
| | | | 22507 | MS | W030000232 | PCBs complete list |
| | | | 22507 | MSD | W030000232 | PCBs complete list |
| | | | 22507 | SAMPLE | W030000232 | PCBs complete list |
| | | | 22507 | SPK-RPD | W030000232 | PCBs complete list |
| | | | 22507 | SURR | W030000232 | PCBs complete list |
| 19450 | 1 | 19840 | 22554 | BLANK | | ICP Metals Analysis, Grd H20 P |
| 19450 | 2 | 19840 | 22554 | LCS | | ICP Metals Analysis, Grd H20 P |
| 19450 | 4 | 19840 | 22554 | MS | W030000232 | ICP Metals Analysis, Grd H20 P |
| 19450 | 5 | 19840 | 22554 | MSD | W030000232 | ICP Metals Analysis, Grd H20 P |
| 19450 | 3 | 19840 | 22554 | SAMPLE | W030000232 | ICP Metals Analysis, Grd H20 P |
| 19450 | 0 | 19840 | 22554 | SPK-RPD | W030000232 | ICP Metals Analysis, Grd H20 P |
| 19451 | 1 | 19841 | 22555 | BLANK | | NWTPH-GX TPH Gasoline Range |
| 19451 | 2 | 19841 | 22555 | LCS | | NWTPH-GX TPH Gasoline Range |
| 19451 | 4 | 19841 | 22555 | DUP | W030000232 | NWTPH-GX TPH Gasoline Range |
| 19451 | 5 | 19841 | 22555 | MS | W030000232 | NWTPH-GX TPH Gasoline Range |
| 19451 | 6 | 19841 | 22555 | MSD | W030000232 | NWTPH-GX TPH Gasoline Range |
| 19451 | 3 | 19841 | 22555 | SAMPLE | W030000232 | NWTPH-GX TPH Gasoline Range |
| 19451 | 6 | 19841 | 22555 | SPK-RPD | W030000232 | NWTPH-GX TPH Gasoline Range |
| 19456 | 1 | 19847 | 22558 | BLANK | | Alcohols, Glycols - 8015 |
| 19456 | 2 | 19847 | 22558 | LCS | | Alcohols, Glycols - 8015 |
| 19456 | 4 | 19847 | 22558 | MS | W030000232 | Alcohols, Glycols - 8015 |
| 19456 | 5 | 19847 | 22558 | MSD | W030000232 | Alcohols, Glycols - 8015 |
| 19456 | 3 | 19847 | 22558 | SAMPLE | W030000232 | Alcohols, Glycols - 8015 |
| 19456 | 5 | 19847 | 22558 | SPK-RPD | W030000232 | Alcohols, Glycols - 8015 |
| | | | 22561 | BLANK | | VOA Ground Water Protection |
| | | | 22561 | LCS | | VOA Ground Water Protection |
| | | | 22561 | MS | W030000232 | VOA Ground Water Protection |
| | | | 22561 | MSD | W030000232 | VOA Ground Water Protection |

| | | | |
|---|---|---|---|
| 22561 | SAMPLE | W030000232 | VOA Ground Water Protection |
| 22561 | SPK-RPD | W030000232 | VOA Ground Water Protection |
| 22561 | SURR | W030000232 | VOA Ground Water Protection |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| DUP | Bromide (Br) by IC | 24959-67-9 | n/a | RPD | 04/24/03 | 0.000 | 20.000 |
| DUP | Chloride (Cl) by IC | 16887-00-6 | n/a | RPD | 04/24/03 | 0.000 | 20.000 |
| DUP | Fluoride (F) by IC | 16984-48-8 | n/a | RPD | 04/24/03 | 0.000 | 20.000 |
| DUP | Nitrite (N) by IC | NO2-N | n/a | RPD | 04/24/03 | 0.000 | 20.000 |
| DUP | Nitrate (N) by IC | NO3-N | n/a | RPD | 04/24/03 | 0.000 | 20.000 |
| DUP | Phosphate (P) by IC | 14265-44-2 | n/a | RPD | 04/24/03 | 0.000 | 20.000 |
| DUP | Sulfate (SO4) by IC | 14808-79-8 | n/a | RPD | 04/24/03 | 0.000 | 20.000 |
| MS | Bromide (Br) by IC | 24959-67-9 | 102.513 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MS | Chloride (Cl) by IC | 16887-00-6 | 102.020 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MS | Fluoride (F) by IC | 16984-48-8 | 104.499 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MS | Nitrite (N) by IC | NO2-N | 97.222 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MS | Nitrate (N) by IC | NO3-N | 102.242 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MS | Phosphate (P) by IC | 14265-44-2 | 102.711 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MS | Sulfate (SO4) by IC | 14808-79-8 | 100.000 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MSD | Bromide (Br) by IC | 24959-67-9 | 103.015 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MSD | Chloride (Cl) by IC | 16887-00-6 | 102.020 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MSD | Fluoride (F) by IC | 16984-48-8 | 105.112 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MSD | Nitrite (N) by IC | NO2-N | 95.040 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MSD | Nitrate (N) by IC | NO3-N | 102.466 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MSD | Phosphate (P) by IC | 14265-44-2 | 103.128 | % Recov | 04/24/03 | 75.000 | 125.000 |
| MSD | Sulfate (SO4) by IC | 14808-79-8 | 101.015 | % Recov | 04/24/03 | 75.000 | 125.000 |

BATCH QC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BLANK | Bromide (Br) by IC | 24959-67-9 | <4.50e-2 | mg/L | 04/24/03 | 0.000 | 300.000 |
| BLANK | Bromide (Br) by IC | 24959-67-9 | <4.50e-2 | mg/L | 04/25/03 | 0.000 | 300.000 |
| BLANK | Chloride (Cl) by IC | 16887-00-6 | <1.40e-2 | mg/L | 04/25/03 | 0.000 | 300.000 |
| BLANK | Chloride (Cl) by IC | 16887-00-6 | <1.40e-2 | mg/L | 04/24/03 | 0.000 | 300.000 |
| BLANK | Fluoride (F) by IC | 16984-48-8 | <7.00e-3 | mg/L | 04/24/03 | 0.000 | 300.000 |
| BLANK | Fluoride (F) by IC | 16984-48-8 | <7.00e-3 | mg/L | 04/25/03 | 0.000 | 300.000 |
| BLANK | Nitrite (N) by IC | NO2-N | <9.00e-3 | mg/L | 04/24/03 | 0.000 | 300.000 |
| BLANK | Nitrite (N) by IC | NO2-N | <9.00e-3 | mg/L | 04/25/03 | 0.000 | 300.000 |
| BLANK | Nitrate (N) by IC | NO3-N | <5.00e-3 | mg/L | 04/24/03 | 0.000 | 300.000 |
| BLANK | Nitrate (N) by IC | NO3-N | <5.00e-3 | mg/L | 04/25/03 | 0.000 | 300.000 |
| BLANK | Phosphate (P) by IC | 14265-44-2 | <1.30e-2 | mg/L | 04/24/03 | 0.000 | 300.000 |
| BLANK | Phosphate (P) by IC | 14265-44-2 | <1.30e-2 | mg/L | 04/25/03 | 0.000 | 300.000 |
| BLANK | Sulfate (SO4) by IC | 14808-79-8 | <2.40e-2 | mg/L | 04/24/03 | 0.000 | 300.000 |
| BLANK | Sulfate (SO4) by IC | 14808-79-8 | <2.40e-2 | mg/L | 04/25/03 | 0.000 | 300.000 |
| LCS | Bromide (Br) by IC | 24959-67-9 | 108.978 | % Recov | 04/24/03 | 80.000 | 120.000 |
| LCS | Chloride (Cl) by IC | 16887-00-6 | 105.500 | % Recov | 04/24/03 | 80.000 | 120.000 |
| LCS | Fluoride (F) by IC | 16984-48-8 | 109.422 | % Recov | 04/24/03 | 80.000 | 120.000 |
| LCS | Nitrite (N) by IC | NO2-N | 105.882 | % Recov | 04/24/03 | 80.000 | 120.000 |
| LCS | Nitrate (N) by IC | NO3-N | 107.991 | % Recov | 04/24/03 | 80.000 | 120.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Anions by Ion Chromatography

SAF Number: F03-007
Sample Date:
Receive Date:

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| LCS | Phosphate (P) by IC | 14265-44-2 | 104.462 | % Recov | 04/24/03 | 80.000 | 120.000 |
| LCS | Sulfate (SO4) by IC | 14808-79-8 | 106.516 | % Recov | 04/24/03 | 80.000 | 120.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Ammonia (N) by IC

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| Lab ID: W030000232 | | | | | | | |
| BATCH QC ASSOCIATED WITH SAMPLE | | | | | | | |
| DUP | Ammonia (N) by IC | 7664-41-7 | n/a | RPD | 04/28/03 | 0.000 | 20.000 |
| MS | Ammonia (N) by IC | 7664-41-7 | 101.843 | % Recov | 04/28/03 | 75.000 | 125.000 |
| MSD | Ammonia (N) by IC | 7664-41-7 | 100.873 | % Recov | 04/28/03 | 75.000 | 125.000 |
| BATCH QC | | | | | | | |
| LCS | Ammonia (N) by IC | 7664-41-7 | 97.829 | % Recov | 04/28/03 | 80.000 | 120.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Uranium Isotopics by AEA

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit | |
|---|---|---|---|---|---|---|---|---|
| Lab ID: W030000232 | | | | | | | | |
| BATCH QC ASSOCIATED WITH SAMPLE | | | | | | | | |
| DUP | U-238 by AEA | 24678-82-8 | 76.471 | RPD | 04/30/03 | 0.000 | 20.000 | * |
| BATCH QC | | | | | | | | |
| BLANK | U-238 by AEA | 24678-82-8 | 2.3e-02 | pCi/L | 04/30/03 | -100.000 | 100.000 | |
| LCS | U-238 by AEA | 24678-82-8 | 112.100 | % Recov | 04/30/03 | 75.000 | 125.000 | |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232
BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| MS | Silver by ICP-MS | 7440-22-4 | 103.250 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Aluminum by ICP-MS | 7429-90-5 | 100.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Arsenic by ICP-MS | 7440-38-2 | 102.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Barium by ICP-MS | 7440-39-3 | 106.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Beryllium by ICP-MS | 7440-41-7 | 96.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Cadmium by ICP-MS | 7440-43-9 | 99.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Cobalt by ICP-MS | 7440-48-4 | 105.250 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Chromium by ICP-MS | 7440-47-3 | 103.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Copper by ICP-MS | 7440-50-8 | 104.250 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Mercury by ICP-MS | 7439-97-6 | 109.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Manganese by ICP-MS | 7439-96-5 | 105.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Molybdenum by ICP-MS | 7439-98-7 | 106.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Nickel by ICP-MS | 7440-02-0 | 104.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Lead by ICP-MS | 7439-92-1 | 104.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Antimony by ICP-MS | 7440-36-0 | 115.250 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Selenium by ICP-MS | 7782-49-2 | 97.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Thorium by ICP-MS | 7440-29-1 | 106.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Thallium by ICP-MS | 7440-28-0 | 101.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Uranium by ICP-MS | 7440-61-1 | 105.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Vanadium by ICP-MS | 7440-62-2 | 104.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MS | Zinc by ICP-MS | 7440-66-6 | 103.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Silver by ICP-MS | 7440-22-4 | 106.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Aluminum by ICP-MS | 7429-90-5 | 100.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Arsenic by ICP-MS | 7440-38-2 | 100.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Barium by ICP-MS | 7440-39-3 | 106.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Beryllium by ICP-MS | 7440-41-7 | 95.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Cadmium by ICP-MS | 7440-43-9 | 101.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Cobalt by ICP-MS | 7440-48-4 | 105.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Chromium by ICP-MS | 7440-47-3 | 104.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Copper by ICP-MS | 7440-50-8 | 106.250 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Mercury by ICP-MS | 7439-97-6 | 111.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Manganese by ICP-MS | 7439-96-5 | 103.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Molybdenum by ICP-MS | 7439-98-7 | 105.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Nickel by ICP-MS | 7440-02-0 | 103.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Lead by ICP-MS | 7439-92-1 | 104.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Antimony by ICP-MS | 7440-36-0 | 118.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Selenium by ICP-MS | 7782-49-2 | 96.750 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Thorium by ICP-MS | 7440-29-1 | 109.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Thallium by ICP-MS | 7440-28-0 | 102.000 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Uranium by ICP-MS | 7440-61-1 | 105.500 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Vanadium by ICP-MS | 7440-62-2 | 104.250 | % Recov | 05/02/03 | 70.000 | 130.000 |
| MSD | Zinc by ICP-MS | 7440-66-6 | 106.000 | % Recov | 05/02/03 | 70.000 | 130.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: ICP-2008 MS All possible metal

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| BATCH QC | | | | | | | |
| BLANK | Silver by ICP-MS | 7440-22-4 | <0.250 | ug/L | 05/02/03 | -0.440 | 0.440 |
| BLANK | Aluminum by ICP-MS | 7429-90-5 | <13.8 | ug/L | 05/02/03 | -24.200 | 24.200 |
| BLANK | Arsenic by ICP-MS | 7440-38-2 | <0.375 | ug/L | 05/02/03 | -0.660 | 0.660 |
| BLANK | Barium by ICP-MS | 7440-39-3 | <0.250 | ug/L | 05/02/03 | -0.440 | 0.440 |
| BLANK | Beryllium by ICP-MS | 7440-41-7 | <0.375 | ug/L | 05/02/03 | -0.660 | 0.660 |
| BLANK | Cadmium by ICP-MS | 7440-43-9 | <0.125 | ug/L | 05/02/03 | -0.220 | 0.220 |
| BLANK | Cobalt by ICP-MS | 7440-48-4 | <0.250 | ug/L | 05/02/03 | -0.440 | 0.440 |
| BLANK | Chromium by ICP-MS | 7440-47-3 | <0.375 | ug/L | 05/02/03 | -0.660 | 0.660 |
| BLANK | Copper by ICP-MS | 7440-50-8 | <0.625 | ug/L | 05/02/03 | -1.100 | 1.100 |
| BLANK | Mercury by ICP-MS | 7439-97-6 | <0.125 | ug/L | 05/02/03 | -0.220 | 0.220 |
| BLANK | Manganese by ICP-MS | 7439-96-5 | <0.375 | ug/L | 05/02/03 | -0.660 | 0.660 |
| BLANK | Molybdenum by ICP-MS | 7439-98-7 | <0.375 | ug/L | 05/02/03 | -0.660 | 0.660 |
| BLANK | Nickel by ICP-MS | 7440-02-0 | <0.625 | ug/L | 05/02/03 | -1.100 | 1.100 |
| BLANK | Lead by ICP-MS | 7439-92-1 | <1.50 | ug/L | 05/02/03 | -2.640 | 2.640 |
| BLANK | Antimony by ICP-MS | 7440-36-0 | 1.48 | ug/L | 05/02/03 | -1.100 | 1.100 |
| BLANK | Selenium by ICP-MS | 7782-49-2 | <0.375 | ug/L | 05/02/03 | -0.660 | 0.660 |
| BLANK | Thorium by ICP-MS | 7440-29-1 | 0.332 | ug/L | 05/02/03 | -0.440 | 0.440 |
| BLANK | Thallium by ICP-MS | 7440-28-0 | <0.125 | ug/L | 05/02/03 | -0.220 | 0.220 |
| BLANK | Uranium by ICP-MS | 7440-61-1 | <0.125 | ug/L | 05/02/03 | -0.220 | 0.220 |
| BLANK | Vanadium by ICP-MS | 7440-62-2 | <0.500 | ug/L | 05/02/03 | -0.880 | 0.880 |
| BLANK | Zinc by ICP-MS | 7440-66-6 | <5.00 | ug/L | 05/02/03 | -8.800 | 8.800 |
| LCS | Silver by ICP-MS | 7440-22-4 | 103.750 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Aluminum by ICP-MS | 7429-90-5 | 91.250 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Arsenic by ICP-MS | 7440-38-2 | 101.250 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Barium by ICP-MS | 7440-39-3 | 103.750 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Beryllium by ICP-MS | 7440-41-7 | 98.250 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Cadmium by ICP-MS | 7440-43-9 | 101.750 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Cobalt by ICP-MS | 7440-48-4 | 102.250 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Chromium by ICP-MS | 7440-47-3 | 101.500 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Copper by ICP-MS | 7440-50-8 | 101.750 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Mercury by ICP-MS | 7439-97-6 | 102.500 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Manganese by ICP-MS | 7439-96-5 | 103.000 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Molybdenum by ICP-MS | 7439-98-7 | 103.750 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Nickel by ICP-MS | 7440-02-0 | 101.000 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Lead by ICP-MS | 7439-92-1 | 102.000 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Antimony by ICP-MS | 7440-36-0 | 118.250 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Selenium by ICP-MS | 7782-49-2 | 99.000 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Thorium by ICP-MS | 7440-29-1 | 104.750 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Thallium by ICP-MS | 7440-28-0 | 98.500 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Uranium by ICP-MS | 7440-61-1 | 103.000 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Vanadium by ICP-MS | 7440-62-2 | 101.750 | % Recov | 05/02/03 | 85.000 | 115.000 |
| LCS | Zinc by ICP-MS | 7440-66-6 | 101.000 | % Recov | 05/02/03 | 85.000 | 115.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Cyanide by Midi/Spectrophotom

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| MS | Cyanide by Midi/Spectrophotom | 57-12-5 | 101.000 | % Recov | 05/06/03 | 75.000 | 125.000 |
| MSD | Cyanide by Midi/Spectrophotom | 57-12-5 | 102.080 | % Recov | 05/06/03 | 75.000 | 125.000 |
| SPK-RPD | Cyanide by Midi/Spectrophotom | 57-12-5 | 1.064 | Ratio | 05/06/03 | 0.000 | 20.000 |

BATCH QC

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| BLANK | Cyanide by Midi/Spectrophotom | 57-12-5 | 1.431 | Ratio | 05/06/03 | -4.000 | 4.000 |
| BLNK-PREP | Cyanide by Midi/Spectrophotom | 57-12-5 | 1.859 | Ratio | 05/06/03 | -4.000 | 4.000 |
| DUP | Cyanide by Midi/Spectrophotom | 57-12-5 | n/a | Ratio | 05/06/03 | 0.000 | 20.000 |
| LCS | Cyanide by Midi/Spectrophotom | 57-12-5 | 86.640 | % Recov | 05/06/03 | 85.000 | 115.000 |
| LCS-2 | Cyanide by Midi/Spectrophotom | 57-12-5 | n/a | % Recov | 05/06/03 | 80.000 | 120.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Hexavalent chromium

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| MS | Hexavalent chromium | 18540-29-9 | 102.811 | % Recov | 05/07/03 | 85.000 | 115.000 |
| MSD | Hexavalent chromium | 18540-29-9 | 106.827 | % Recov | 05/07/03 | 85.000 | 115.000 |
| SPK-RPD | Hexavalent chromium | 18540-29-9 | 3.831 | RPD | 05/07/03 | 0.000 | 20.000 |

BATCH QC

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| BLANK | Hexavalent chromium | 18540-29-9 | <0.002 | Ratio | 05/07/03 | 0.000 | 2.000 |
| DUP | Hexavalent chromium | 18540-29-9 | n/a | RPD | 05/07/03 | 0.000 | 15.000 |
| LCS | Hexavalent chromium | 18540-29-9 | 103.441 | %Recove | 05/07/03 | 80.000 | 120.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Ra-226 by AEA and GEA

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit | |
|---|---|---|---|---|---|---|---|---|
| Lab ID: W030000232 | | | | | | | | |
| BATCH QC ASSOCIATED WITH SAMPLE | | | | | | | | |
| DUP | Ra-226 by AEA | 13982-63-3 | 140.426 | RPD | 05/07/03 | 0.000 | 20.000 | * |
| BATCH QC | | | | | | | | |
| BLANK | Ra-226 by AEA | 13982-63-3 | 2.5e-02 | pCi/L | 05/07/03 | 0.000 | 1000.000 | |
| LCS | Ra-226 by AEA | 13982-63-3 | 117.000 | % Recov | 05/07/03 | 75.000 | 125.000 | |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Ra-228 by GEA

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit | |
|---|---|---|---|---|---|---|---|---|
| Lab ID: W030000232 | | | | | | | | |
| BATCH QC ASSOCIATED WITH SAMPLE | | | | | | | | |
| DUP | Ra-228 by GEA | 15262-20-1 | 54.335 | RPD | 05/07/03 | 0.000 | 20.000 | * |
| BATCH QC | | | | | | | | |
| BLANK | Ra-228 by GEA | 15262-20-1 | -4.0e-01 | mg/L | 05/07/03 | 0.000 | 1000.000 | * |
| LCS | Ra-228 by GEA | 15262-20-1 | 107.000 | % Recov | 05/07/03 | 75.000 | 125.000 | |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: WTPH-D TPH Diesel Range (Wa)

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit | |
|---|---|---|---|---|---|---|---|---|
| MS | Kerosene | 8008-20-6 | 58.600 | %Recove | 05/06/03 | 70.000 | 130.000 | * |
| MS | ortho-Terphenyl | 84-15-1 | 92.700 | % Recov | 05/06/03 | 70.000 | 130.000 | |
| MSD | Kerosene | 8008-20-6 | 56.800 | %Recove | 05/06/03 | 70.000 | 130.000 | * |
| MSD | ortho-Terphenyl | 84-15-1 | 102.000 | % Recov | 05/06/03 | 70.000 | 130.000 | |
| SPK-RPD | Kerosene | 8008-20-6 | 3.120 | RPD | 05/06/03 | 0.000 | 20.000 | |
| SPK-RPD | ortho-Terphenyl | 84-15-1 | 9.553 | RPD | 05/06/03 | 0.000 | 20.000 | |
| SURR | ortho-Terphenyl | 84-15-1 | 89.100 | % Recov | 05/06/03 | 70.000 | 130.000 | |

BATCH QC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BLANK | Kerosene | 8008-20-6 | < 250 | ug/L | 05/06/03 | -999.000 | 999.000 | |
| BLANK | ortho-Terphenyl | 84-15-1 | 463.17 | % Recov | 05/06/03 | 70.000 | 130.000 | |
| BLANK | Total Pet. Hydrocarbons Diesel | 68476-34-6 | < 250 | mg/L | 05/06/03 | 0.000 | 300.000 | |
| LCS | ortho-Terphenyl | 84-15-1 | 82.800 | % Recov | 05/06/03 | 70.000 | 130.000 | |
| LCS | Total Pet. Hydrocarbons Diesel | 68476-34-6 | 64.100 | % Recov | 05/06/03 | 80.000 | 120.000 | * |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Americium by AEA

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit | |
|---|---|---|---|---|---|---|---|---|
| Lab ID: W030000232 | | | | | | | | |
| BATCH QC ASSOCIATED WITH SAMPLE | | | | | | | | |
| DUP | Am-241 by AEA | 14596-10-2 | 80.000 | RPD | 05/01/03 | 0.000 | 20.000 | * |
| BATCH QC | | | | | | | | |
| BLANK | Am-241 by AEA | 14596-10-2 | 2.2e+01 | pCi/L | 05/05/03 | -100.000 | 100.000 | |
| LCS | Am-241 by AEA | 14596-10-2 | 84.000 | % Recov | 05/05/03 | 75.000 | 125.000 | |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Plutonium Isotopics by AEA

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit | |
|---|---|---|---|---|---|---|---|---|
| Lab ID: W030000232 | | | | | | | | |
| BATCH QC ASSOCIATED WITH SAMPLE | | | | | | | | |
| DUP | Pu-239/240 by AEA | PU-239/240 | 199.992 | RPD | 05/01/03 | 0.000 | 20.000 | * |
| BATCH QC | | | | | | | | |
| BLANK | Pu-239/240 by AEA | PU-239/240 | 2.8e-02 | pCi/L | 05/01/03 | -100.000 | 100.000 | |
| LCS | Pu-239/240 by AEA | PU-239/240 | 100.200 | % Recov | 05/01/03 | 75.000 | 125.000 | |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232
BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| MS | 1,2,4-Trichlorobenzene | 120-82-1 | 68.100 | % Recov | 05/05/03 | 50.000 | 120.000 |
| MS | 1,4-Dichlorobenzene (SV) | 106-46-7 | 75.900 | % Recov | 05/05/03 | 41.000 | 113.000 |
| MS | 2,4-Dinitrotoluene | 121-14-2 | 86.200 | % Recov | 05/05/03 | 65.000 | 109.000 |
| MS | 2-Fluorophenol Surr | 367-12-4 | 65.600 | % Recov | 05/05/03 | 50.000 | 110.000 |
| MS | Acenaphthene | 83-32-9 | 74.100 | % Recov | 05/05/03 | 62.000 | 112.000 |
| MS | 4-Chloro-3-methylphenol | 59-50-7 | 66.500 | % Recov | 05/05/03 | 59.000 | 115.000 |
| MS | 2-Chlorophenol | 95-57-8 | 75.500 | % Recov | 05/05/03 | 69.000 | 111.000 |
| MS | N-Nitroso-di-n-propylamine | 621-64-7 | 80.000 | % Recov | 05/05/03 | 69.000 | 115.000 |
| MS | 2-Fluorobiphenyl Surr | 321-60-8 | 64.700 | % Recov | 05/05/03 | 58.000 | 109.000 |
| MS | Phenol | 108-95-2 | 66.500 | % Recov | 05/05/03 | 59.000 | 115.000 |
| MS | Nitrobenzene-d5 Surr | 4165-60-0 | 58.100 | % Recov | 05/05/03 | 60.000 | 118.000 |
| MS | 4-Nitrophenol | 100-02-7 | 76.700 | % Recov | 05/05/03 | 32.000 | 130.000 |
| MS | Pentachlorophenol | 87-86-5 | 79.500 | % Recov | 05/05/03 | 51.000 | 121.000 |
| MS | Phenol-d5 Surr | 4165-62-2 | 62.300 | % Recov | 05/05/03 | 59.000 | 116.000 |
| MS | Pyrene | 129-00-0 | 72.700 | % Recov | 05/05/03 | 58.000 | 116.000 |
| MS | 2,4,6-Tribromophenol Surr | 118-79-6 | 75.900 | % Recov | 05/05/03 | 60.000 | 120.000 |
| MS | Terphenyl-d14 Surr | 98904-43-9 | 79.400 | % Recov | 05/05/03 | 60.000 | 120.000 |
| MSD | 1,2,4-Trichlorobenzene | 120-82-1 | 79.600 | % Recov | 05/05/03 | 50.000 | 120.000 |
| MSD | 1,4-Dichlorobenzene (SV) | 106-46-7 | 82.400 | % Recov | 05/05/03 | 41.000 | 113.000 |
| MSD | 2,4-Dinitrotoluene | 121-14-2 | 73.700 | % Recov | 05/05/03 | 65.000 | 109.000 |
| MSD | 2-Fluorophenol Surr | 367-12-4 | 61.900 | % Recov | 05/05/03 | 50.000 | 110.000 |
| MSD | Acenaphthene | 83-32-9 | 84.200 | % Recov | 05/05/03 | 62.000 | 112.000 |
| MSD | 4-Chloro-3-methylphenol | 59-50-7 | 76.400 | % Recov | 05/05/03 | 59.000 | 115.000 |
| MSD | 2-Chlorophenol | 95-57-8 | 74.100 | % Recov | 05/05/03 | 69.000 | 111.000 |
| MSD | N-Nitroso-di-n-propylamine | 621-64-7 | 83.300 | % Recov | 05/05/03 | 69.000 | 115.000 |
| MSD | 2-Fluorobiphenyl Surr | 321-60-8 | 80.900 | % Recov | 05/05/03 | 58.000 | 109.000 |
| MSD | Phenol | 108-95-2 | 67.400 | % Recov | 05/05/03 | 59.000 | 115.000 |
| MSD | Nitrobenzene-d5 Surr | 4165-60-0 | 78.300 | % Recov | 05/05/03 | 60.000 | 118.000 |
| MSD | 4-Nitrophenol | 100-02-7 | 86.600 | % Recov | 05/05/03 | 32.000 | 130.000 |
| MSD | Pentachlorophenol | 87-86-5 | 100.000 | % Recov | 05/05/03 | 51.000 | 121.000 |
| MSD | Phenol-d5 Surr | 4165-62-2 | 65.700 | % Recov | 05/05/03 | 59.000 | 116.000 |
| MSD | Pyrene | 129-00-0 | 80.100 | % Recov | 05/05/03 | 58.000 | 116.000 |
| MSD | 2,4,6-Tribromophenol Surr | 118-79-6 | 93.200 | % Recov | 05/05/03 | 60.000 | 120.000 |
| MSD | Terphenyl-d14 Surr | 98904-43-9 | 77.800 | % Recov | 05/05/03 | 60.000 | 120.000 |
| SPK-RPD | 1,2,4-Trichlorobenzene | 120-82-1 | 15.572 | RPD | 05/05/03 | 0.000 | 25.000 |
| SPK-RPD | 1,4-Dichlorobenzene (SV) | 106-46-7 | 8.212 | RPD | 05/05/03 | 0.000 | 25.000 |
| SPK-RPD | 2,4-Dinitrotoluene | 121-14-2 | 10.722 | RPD | 05/05/03 | 0.000 | 25.000 |
| SPK-RPD | 2-Fluorophenol Surr | 367-12-4 | 94.360 | % Recov | 05/05/03 | 50.000 | 110.000 |
| SPK-RPD | Acenaphthene | 83-32-9 | 12.761 | RPD | 05/05/03 | 0.000 | 25.000 |
| SPK-RPD | 4-Chloro-3-methylphenol | 59-50-7 | 13.856 | RPD | 05/05/03 | 0.000 | 25.000 |
| SPK-RPD | 2-Chlorophenol | 95-57-8 | 1.872 | RPD | 05/05/03 | 0.000 | 25.000 |
| SPK-RPD | N-Nitroso-di-n-propylamine | 621-64-7 | 4.042 | RPD | 05/05/03 | 0.000 | 25.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

| QC Type | Analyte | | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit | |
|---|---|---|---|---|---|---|---|---|---|
| SPK-RPD | 2-Fluorobiphenyl | Surr | 321-60-8 | 125.039 | % Recov | 05/05/03 | 58.000 | 109.000 | * |
| SPK-RPD | Phenol | | 108-95-2 | 1.344 | RPD | 05/05/03 | 0.000 | 16.000 | |
| SPK-RPD | Nitrobenzene-d5 | Surr | 4165-60-0 | 134.768 | % Recov | 05/05/03 | 60.000 | 118.000 | * |
| SPK-RPD | 4-Nitrophenol | | 100-02-7 | 12.125 | RPD | 05/05/03 | 0.000 | 25.000 | |
| SPK-RPD | Pentachlorophenol | | 87-86-5 | 22.841 | RPD | 05/05/03 | 0.000 | 25.000 | |
| SPK-RPD | Phenol-d5 | Surr | 4165-62-2 | 105.457 | % Recov | 05/05/03 | 59.000 | 116.000 | |
| SPK-RPD | Pyrene | | 129-00-0 | 9.686 | RPD | 05/05/03 | 0.000 | 25.000 | |
| SPK-RPD | 2,4,6-Tribromophenol | Surr | 118-79-6 | 122.793 | % Recov | 05/05/03 | 60.000 | 120.000 | * |
| SPK-RPD | Terphenyl-d14 | Surr | 98904-43-9 | 97.985 | % Recov | 05/05/03 | 60.000 | 120.000 | |
| SURR | 2-Fluorophenol | Surr | 367-12-4 | 64.100 | % Recov | 05/05/03 | 50.000 | 110.000 | |
| SURR | 2-Fluorobiphenyl | Surr | 321-60-8 | 80.200 | % Recov | 05/05/03 | 58.000 | 109.000 | |
| SURR | Nitrobenzene-d5 | Surr | 4165-60-0 | 75.800 | % Recov | 05/05/03 | 60.000 | 118.000 | |
| SURR | Phenol-d5 | Surr | 4165-62-2 | 76.900 | % Recov | 05/05/03 | 59.000 | 116.000 | |
| SURR | 2,4,6-Tribromophenol | Surr | 118-79-6 | 81.300 | % Recov | 05/05/03 | 60.000 | 120.000 | |
| SURR | Terphenyl-d14 | Surr | 98904-43-9 | 91.900 | % Recov | 05/05/03 | 60.000 | 120.000 | |

## BATCH QC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BLANK | 1,2-Dichlorobenzene (SV) | | 95-50-1 | < 4.2 | ug/L | 05/05/03 | | |
| BLANK | 1,2,4-Trichlorobenzene | | 120-82-1 | < 3.0 | ug/L | 05/05/03 | | |
| BLANK | 1,3-Dichlorobenzene | | 541-73-1 | < 5.2 | ug/L | 05/05/03 | | |
| BLANK | 1,4-Dichlorobenzene (SV) | | 106-46-7 | < 5.0 | ug/L | 05/05/03 | | |
| BLANK | 2,4-Dichlorophenol | | 120-83-2 | < 1.4 | ug/L | 05/05/03 | | |
| BLANK | 2,4-Dinitrotoluene | | 121-14-2 | < 1.8 | ug/L | 05/05/03 | | |
| BLANK | 2,4,5-Trichlorophenol | | 95-95-4 | < 1.9 | ug/L | 05/05/03 | | |
| BLANK | 2,4,6-Trichlorophenol | | 88-06-2 | < 2.4 | ug/L | 05/05/03 | | |
| BLANK | 2,4-Dimethylphenol | | 105-67-9 | < 4.3 | ug/L | 05/05/03 | | |
| BLANK | 2,6-Dinitrotoluene | | 606-20-2 | < 2.2 | ug/L | 05/05/03 | | |
| BLANK | 2-Butoxyethanol | | 111-76-2 | < 3.1 | mg/L | 05/05/03 | | |
| BLANK | 2-Chloronaphthalene | | 91-58-7 | < 2.3 | ug/L | 05/05/03 | | |
| BLANK | 2-Fluorophenol | Surr | 367-12-4 | 63.800 | % Recov | 05/05/03 | 50.000 | 110.000 |
| BLANK | 2-Methylnaphthalene | | 91-57-6 | < 1.9 | ug/L | 05/05/03 | | |
| BLANK | 2-Methylphenol | | 95-48-7 | < 2.3 | ug/L | 05/05/03 | | |
| BLANK | 2-Nitroaniline | | 88-74-4 | < 2.1 | mg/L | 05/05/03 | | |
| BLANK | 2-Nitrophenol | | 88-75-5 | < 2.0 | ug/L | 05/05/03 | | |
| BLANK | 3 & 4 Methylphenol Total | | 108-39-4 | < 3.2 | ug/L | 05/05/03 | 0.000 | 5.000 |
| BLANK | 3-Nitroaniline | | 99-09-2 | < 4.5 | mg/L | 05/05/03 | | |
| BLANK | 4,6-Dinitro-2-methylphenol | | 534-52-1 | < 1.7 | ug/L | 05/05/03 | | |
| BLANK | 4-Bromophenyl-phenylether | | 101-55-3 | < 1.9 | ug/L | 05/05/03 | | |
| BLANK | 4-Chlorophenyl-phenylether | | 7005-72-3 | < 2.2 | ug/L | 05/05/03 | | |
| BLANK | Acenaphthene | | 83-32-9 | < 2.4 | ug/L | 05/05/03 | | |
| BLANK | Acenaphthylene | | 208-96-8 | < 2.3 | ug/L | 05/05/03 | | |
| BLANK | Anthracene | | 120-12-7 | < 2.0 | ug/L | 05/05/03 | | |
| BLANK | bis(-2-Chloroethyl)Eth | | 111-44-4 | < 3.4 | mg/L | 05/05/03 | | |
| BLANK | Benzo(a)anthracene | | 56-55-3 | < 2.1 | ug/L | 05/05/03 | | |
| BLANK | Benzo(b)fluoranthene | | 205-99-2 | < 1.7 | ug/L | 05/05/03 | | |
| BLANK | Benzo(g,h,i)perylene | | 191-24-2 | < 2.5 | ug/L | 05/05/03 | | |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F03-007
Sample Date:
Receive Date:

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| BLANK | Benzo(a)pyrene | 50-32-8 | < 1.9 | ug/L | 05/05/03 | | |
| BLANK | bis(2-Chloroethoxy)methane | 111-91-1 | < 2.0 | ug/L | 05/05/03 | | |
| BLANK | Bis (2-Ethylhexyl) phthalate | 117-81-7 | < 2.6 | mg/L | 05/05/03 | | |
| BLANK | Bis(2-Chloro-1-methylene) | 108-60-1 | < 2.1 | ug/L | 05/05/03 | 0.000 | 10.000 |
| BLANK | Benzyl alcohol | 100-51-6 | < 1.8 | mg/L | 05/05/03 | | |
| BLANK | Benzo(k)fluoranthene | 207-08-9 | < 2.8 | ug/L | 05/05/03 | | |
| BLANK | Butylbenzylphthalate | 85-68-7 | < 2.0 | mg/L | 05/05/03 | | |
| BLANK | Carbazole | 86-74-8 | < 1.4 | mg/L | 05/05/03 | | |
| BLANK | 4-Chloroaniline | 106-47-8 | < 7.2 | mg/L | 05/05/03 | | |
| BLANK | 4-Chloro-3-methylphenol | 59-50-7 | < 1.3 | ug/L | 05/05/03 | | |
| BLANK | 2-Chlorophenol | 95-57-8 | < 1.7 | ug/L | 05/05/03 | | |
| BLANK | Chrysene | 218-01-9 | < 2.3 | ug/L | 05/05/03 | | |
| BLANK | 3,3'-Dichlorobenzidine | 91-94-1 | < 4.1 | ug/L | 05/05/03 | | |
| BLANK | Dibenzo(a,h)anthracene | 53-70-3 | < 2.6 | ug/L | 05/05/03 | | |
| BLANK | Dibenzofuran | 132-64-9 | < 1.9 | mg/L | 05/05/03 | | |
| BLANK | Di-n-butylphthalate | 84-74-2 | < 2.1 | mg/L | 05/05/03 | | |
| BLANK | Diethylphthalate | 84-66-2 | < 6.3 | mg/L | 05/05/03 | | |
| BLANK | Dimethylphthalate | 131-11-3 | < 2.1 | mg/L | 05/05/03 | | |
| BLANK | 2,4-Dinitrophenol | 51-28-5 | < 3.3 | ug/L | 05/05/03 | | |
| BLANK | Di-n-octylphthalate | 117-84-0 | < 2.5 | mg/L | 05/05/03 | | |
| BLANK | N-Nitroso-di-n-propylamine | 621-64-7 | < 1.7 | ug/L | 05/05/03 | | |
| BLANK | 2-Fluorobiphenyl Surr | 321-60-8 | 74.600 | % Recov | 05/05/03 | 58.000 | 109.000 |
| BLANK | Fluorene | 86-73-7 | < 2.0 | ug/L | 05/05/03 | | |
| BLANK | Fluoranthene | 206-44-0 | < 2.1 | ug/L | 05/05/03 | | |
| BLANK | Hexachlorobenzene | 118-74-1 | < 2.1 | ug/L | 05/05/03 | | |
| BLANK | Hexachlorobutadiene | 87-68-3 | < 3.6 | ug/L | 05/05/03 | | |
| BLANK | Hexachlorocyclopentadiene | 77-47-4 | < 7.8 | ug/L | 05/05/03 | | |
| BLANK | Hexachloroethane | 67-72-1 | < 5.5 | ug/L | 05/05/03 | | |
| BLANK | Indeno(1,2,3-cd)pyrene | 193-39-5 | < 2.6 | ug/L | 05/05/03 | | |
| BLANK | Isophorone | 78-59-1 | < 1.9 | mg/L | 05/05/03 | | |
| BLANK | Phenol | 108-95-2 | < 1.7 | ug/L | 05/05/03 | | |
| BLANK | Naphthalene | 91-20-3 | < 2.4 | ug/L | 05/05/03 | | |
| BLANK | Nitrobenzene-d5 Surr | 4165-60-0 | 79.000 | % Recov | 05/05/03 | 60.000 | 118.000 |
| BLANK | Nitrobenzene | 98-95-3 | < 2.0 | ug/L | 05/05/03 | | |
| BLANK | 4-Nitrophenol | 100-02-7 | < 1.4 | ug/L | 05/05/03 | | |
| BLANK | 4-Nitroaniline | 100-01-6 | < 2.9 | mg/L | 05/05/03 | | |
| BLANK | N-Nitrosodiphenylamine | 86-30-6 | < 2.3 | ug/L | 05/05/03 | | |
| BLANK | Pentachlorophenol | 87-86-5 | < 1.7 | ug/L | 05/05/03 | | |
| BLANK | Phenanthrene | 85-01-8 | < 2.2 | ug/L | 05/05/03 | | |
| BLANK | Phenol-d5 Surr | 4165-62-2 | 62.500 | % Recov | 05/05/03 | 59.000 | 116.000 |
| BLANK | Pyrene | 129-00-0 | < 2.1 | ug/L | 05/05/03 | | |
| BLANK | Tri-n-butylphosphate | 126-73-8 | < 2.5 | mg/L | 05/05/03 | | |
| BLANK | 2,4,6-Tribromophenol Surr | 118-79-6 | 82.300 | % Recov | 05/05/03 | 60.000 | 120.000 |
| BLANK | Terphenyl-d14 Surr | 98904-43-9 | 95.600 | % Recov | 05/05/03 | 60.000 | 120.000 |
| LCS | 1,2,4-Trichlorobenzene | 120-82-1 | 69.500 | % Recov | 05/05/03 | 46.000 | 107.000 |
| LCS | 1,4-Dichlorobenzene (SV) | 106-46-7 | 73.300 | % Recov | 05/05/03 | 42.000 | 111.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: SW-846 8270B Semi-Vols

SAF Number: F03-007
Sample Date:
Receive Date:

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| LCS | 2,4-Dinitrotoluene | 121-14-2 | 65.900 | % Recov | 05/05/03 | 59.000 | 106.000 |
| LCS | 2-Fluorophenol Surr | 367-12-4 | 63.900 | % Recov | 05/05/03 | 50.000 | 110.000 |
| LCS | Acenaphthene | 83-32-9 | 70.400 | % Recov | 05/05/03 | 61.000 | 116.000 |
| LCS | 4-Chloro-3-methylphenol | 59-50-7 | 78.900 | % Recov | 05/05/03 | 61.000 | 106.000 |
| LCS | 2-Chlorophenol | 95-57-8 | 70.100 | % Recov | 05/05/03 | 66.000 | 106.000 |
| LCS | N-Nitroso-di-n-propylamine | 621-64-7 | 80.500 | % Recov | 05/05/03 | 71.000 | 114.000 |
| LCS | 2-Fluorobiphenyl Surr | 321-60-8 | 70.500 | % Recov | 05/05/03 | 58.000 | 109.000 |
| LCS | Phenol | 108-95-2 | 72.900 | % Recov | 05/05/03 | 67.000 | 105.000 |
| LCS | Nitrobenzene-d5 Surr | 4165-60-0 | 60.300 | % Recov | 05/05/03 | 60.000 | 118.000 |
| LCS | 4-Nitrophenol | 100-02-7 | 82.000 | % Recov | 05/05/03 | 32.000 | 118.000 |
| LCS | Pentachlorophenol | 87-86-5 | 86.100 | % Recov | 05/05/03 | 62.000 | 114.000 |
| LCS | Phenol-d5 Surr | 4165-62-2 | 63.900 | % Recov | 05/05/03 | 59.000 | 116.000 |
| LCS | Pyrene | 129-00-0 | 70.000 | % Recov | 05/05/03 | 66.000 | 118.000 |
| LCS | 2,4,6-Tribromophenol Surr | 118-79-6 | 85.000 | % Recov | 05/05/03 | 60.000 | 120.000 |
| LCS | Terphenyl-d14 Surr | 98904-43-9 | 83.600 | % Recov | 05/05/03 | 60.000 | 120.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: PCBs complete list

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|---|
| MS | Aroclor-1254 | | 11097-69-1 | 99.200 | % Recov | 05/15/03 | 75.000 | 125.000 |
| MS | Decachlorobiphenyl | Surr | 2051-24-3 | 120.000 | % Recov | 05/15/03 | 50.000 | 150.000 |
| MS | Tetrachloro-m-xylene | Surr | 877-09-8 | 79.900 | % Recov | 05/15/03 | 50.000 | 150.000 |
| MSD | Aroclor-1254 | | 11097-69-1 | 92.400 | % Recov | 05/14/03 | 75.000 | 125.000 |
| MSD | Decachlorobiphenyl | Surr | 2051-24-3 | 122.000 | % Recov | 05/14/03 | 50.000 | 150.000 |
| MSD | Tetrachloro-m-xylene | Surr | 877-09-8 | 102.000 | % Recov | 05/14/03 | 50.000 | 150.000 |
| SPK-RPD | Aroclor-1254 | | 11097-69-1 | 7.098 | RPD | 05/15/03 | 0.000 | 25.000 |
| SPK-RPD | Decachlorobiphenyl | Surr | 2051-24-3 | 1.653 | RPD | 05/15/03 | 0.000 | 20.000 |
| SPK-RPD | Tetrachloro-m-xylene | Surr | 877-09-8 | 24.299 | RPD | 05/15/03 | 0.000 | 20.000 |
| SURR | Decachlorobiphenyl | Surr | 2051-24-3 | 101.000 | % Recov | 05/14/03 | 50.000 | 150.000 |
| SURR | Tetrachloro-m-xylene | Surr | 877-09-8 | 76.200 | % Recov | 05/14/03 | 50.000 | 150.000 |

BATCH QC

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BLANK | Aroclor-1016 | | 12674-11-2 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Aroclor-1221 | | 11104-28-2 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Aroclor-1232 | | 11141-16-5 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Aroclor-1242 | | 53469-21-9 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Aroclor-1248 | | 12672-29-6 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Aroclor-1254 | | 11097-69-1 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Aroclor-1260 | | 11096-82-5 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Aroclor-1262 | | 37324-23-5 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Aroclor-1268 | | 11100-14-4 | < 0.10 | ug/L | 05/15/03 | | |
| BLANK | Decachlorobiphenyl | Surr | 2051-24-3 | 96.700 | % Recov | 05/15/03 | 50.000 | 150.000 |
| BLANK | Tetrachloro-m-xylene | Surr | 877-09-8 | 87.800 | % Recov | 05/15/03 | 50.000 | 150.000 |
| LCS | Aroclor-1254 | | 11097-69-1 | 82.500 | % Recov | 05/14/03 | 70.000 | 130.000 |
| LCS | Decachlorobiphenyl | Surr | 2051-24-3 | 97.700 | % Recov | 05/14/03 | 50.000 | 150.000 |
| LCS | Tetrachloro-m-xylene | Surr | 877-09-8 | 77.400 | % Recov | 05/14/03 | 50.000 | 150.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: ICP Metals Analysis, Grd H20 P

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| MS | Boron by ICP | 7440-50-8 | 109.400 | % Recov | 05/20/03 | 70.000 | 130.000 |
| MS | Bismuth by ICP | 7440-69-9 | 122.800 | % Recov | 05/20/03 | 75.000 | 125.000 |
| MSD | Boron by ICP | 7440-50-8 | 108.800 | % Recov | 05/20/03 | 75.000 | 125.000 |
| MSD | Bismuth by ICP | 7440-69-9 | 122.700 | % Recov | 05/20/03 | 75.000 | 125.000 |
| SPK-RPD | Boron by ICP | 7440-50-8 | 0.906 | RPD | 05/20/03 | 0.000 | 20.000 |
| SPK-RPD | Bismuth by ICP | 7440-69-9 | 1.442 | RPD | 05/20/03 | 0.000 | 20.000 |

BATCH QC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BLANK | Boron by ICP | 7440-50-8 | 0.0015 | ug/L | 05/20/03 | -10.000 | 10.000 |
| BLANK | Bismuth by ICP | 7440-69-9 | 0.003 | Ratio | 05/20/03 | -6.000 | 6.000 |
| LCS | Boron by ICP | 7440-50-8 | 106.100 | % Recov | 05/20/03 | 85.000 | 115.000 |
| LCS | Bismuth by ICP | 7440-69-9 | 61.790 | % Recov | 05/20/03 | 80.000 | 120.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: NWTPH-GX TPH Gasoline Range

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| DUP | Total Pet. Hydrocarbons Gas | TPH-G | n/a | RPD | 05/06/03 | 0.000 | 20.000 |
| MS | Total Pet. Hydrocarbons Gas | TPH-G | 100.000 | % Recov | 05/06/03 | 75.000 | 125.000 |
| MSD | Total Pet. Hydrocarbons Gas | TPH-G | 103.000 | % Recov | 05/06/03 | 75.000 | 125.000 |
| SPK-RPD | Total Pet. Hydrocarbons Gas | TPH-G | 2.956 | RPD | 05/06/03 | 0.000 | 20.000 |

BATCH QC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BLANK | Total Pet. Hydrocarbons Gas | TPH-G | <50 | mg/L | 05/06/03 | 0.000 | 300.000 |
| LCS | Total Pet. Hydrocarbons Gas | TPH-G | 109.000 | %rec | 05/06/03 | 80.000 | 120.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: Alcohols, Glycols - 8015

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| MS | 2-Bromoethanol | 540-51-2 | 100.000 | %Recove | 05/06/03 | 70.000 | 125.000 |
| MS | Diethyl ether | 60-29-7 | 85.000 | %Recove | 05/06/03 | 75.000 | 125.000 |
| MS | Ethylene glycol | 107-21-1 | 84.000 | %Recove | 05/06/03 | 75.000 | 125.000 |
| MS | Methanol | 67-56-1 | 118.000 | %Recove | 05/06/03 | 75.000 | 125.000 |
| MSD | 2-Bromoethanol | 540-51-2 | 92.000 | %Recove | 05/06/03 | 70.000 | 125.000 |
| MSD | Diethyl ether | 60-29-7 | 99.000 | %Recove | 05/06/03 | 75.000 | 125.000 |
| MSD | Ethylene glycol | 107-21-1 | 89.000 | %Recove | 05/06/03 | 75.000 | 125.000 |
| MSD | Methanol | 67-56-1 | 108.000 | %Recove | 05/06/03 | 75.000 | 125.000 |
| SPK-RPD | 2-Bromoethanol | 540-51-2 | 8.333 | RPD | 05/06/03 | 0.000 | 20.000 |
| SPK-RPD | Diethyl ether | 60-29-7 | 15.217 | RPD | 05/06/03 | 0.000 | 20.000 |
| SPK-RPD | Ethylene glycol | 107-21-1 | 5.780 | RPD | 05/06/03 | 0.000 | 20.000 |
| SPK-RPD | Methanol | 67-56-1 | 8.850 | RPD | 05/06/03 | 0.000 | 20.000 |

BATCH QC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BLANK | 2-Bromoethanol | 540-51-2 | 102 | ug/Kg | 05/06/03 | 0.000 | 10.000 |
| BLANK | Diethyl ether | 60-29-7 | <5000 | ug/L | 05/06/03 | 0.000 | 10.000 |
| BLANK | Ethylene glycol | 107-21-1 | <5000 | ug/L | 05/06/03 | 0.000 | 5.000 |
| BLANK | Methanol | 67-56-1 | <1000 | ug/L | 05/06/03 | 0.000 | 10.000 |
| LCS | 2-Bromoethanol | 540-51-2 | 90.000 | %Recove | 05/06/03 | 70.000 | 130.000 |
| LCS | Diethyl ether | 60-29-7 | 82.000 | %Recove | 05/06/03 | 70.000 | 130.000 |
| LCS | Ethylene glycol | 107-21-1 | 99.000 | %Recove | 05/06/03 | 70.000 | 130.000 |
| LCS | Methanol | 67-56-1 | 117.000 | %Recove | 05/06/03 | 70.000 | 130.000 |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F03-007
Sample Date: 04/23/03
Receive Date: 04/23/03

Lab ID: W030000232

BATCH QC ASSOCIATED WITH SAMPLE

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| MS | 1,1-Dichloroethene | 75-35-4 | 92.000 | % Recov | 05/05/03 | 63.000 | 117.000 |
| MS | Benzene | 71-43-2 | 104.000 | % Recov | 05/05/03 | 75.000 | 129.000 |
| MS | 4-Bromofluorobenzene Surr | 460-00-4 | 98.000 | % Recov | 05/05/03 | 84.000 | 116.000 |
| MS | Chlorobenzene | 108-90-7 | 108.000 | % Recov | 05/05/03 | 79.000 | 119.000 |
| MS | 1,2-Dichloroethane-d4 Surr | 17060-07-0 | 104.000 | % Recov | 05/05/03 | 82.000 | 136.000 |
| MS | Toluene-d8 Surr | 2037-26-5 | 102.000 | % Recov | 05/05/03 | 89.000 | 119.000 |
| MS | Toluene | 108-88-3 | 104.000 | % Recov | 05/05/03 | 76.000 | 120.000 |
| MS | Trichloroethene | 79-01-6 | 104.000 | % Recov | 05/05/03 | 73.000 | 123.000 |
| MSD | 1,1-Dichloroethene | 75-35-4 | 88.000 | % Recov | 05/05/03 | 63.000 | 117.000 |
| MSD | Benzene | 71-43-2 | 104.000 | % Recov | 05/05/03 | 75.000 | 129.000 |
| MSD | 4-Bromofluorobenzene Surr | 460-00-4 | 98.000 | % Recov | 05/05/03 | 84.000 | 116.000 |
| MSD | Chlorobenzene | 108-90-7 | 104.000 | % Recov | 05/05/03 | 79.000 | 119.000 |
| MSD | 1,2-Dichloroethane-d4 Surr | 17060-07-0 | 104.000 | % Recov | 05/05/03 | 82.000 | 136.000 |
| MSD | Toluene-d8 Surr | 2037-26-5 | 100.000 | % Recov | 05/05/03 | 89.000 | 119.000 |
| MSD | Toluene | 108-88-3 | 104.000 | % Recov | 05/05/03 | 76.000 | 120.000 |
| MSD | Trichloroethene | 79-01-6 | 100.000 | % Recov | 05/05/03 | 73.000 | 123.000 |
| SPK-RPD | 1,1-Dichloroethene | 75-35-4 | 4.444 | RPD | 05/05/03 | 0.000 | 10.000 |
| SPK-RPD | Benzene | 71-43-2 | 0.000 | RPD | 05/05/03 | 0.000 | 10.000 |
| SPK-RPD | Chlorobenzene | 108-90-7 | 3.774 | RPD | 05/05/03 | 0.000 | 10.000 |
| SPK-RPD | 1,2-Dichloroethane-d4 Surr | 17060-07-0 | 0.000 | RPD | 05/05/03 | 0.000 | 25.000 |
| SPK-RPD | Toluene-d8 Surr | 2037-26-5 | 1.880 | RPD | 05/05/03 | 0.000 | 25.000 |
| SPK-RPD | Toluene | 108-88-3 | 0.000 | RPD | 05/05/03 | 0.000 | 10.000 |
| SPK-RPD | Trichloroethene | 79-01-6 | 3.922 | RPD | 05/05/03 | 0.000 | 10.000 |
| SURR | 4-Bromofluorobenzene Surr | 460-00-4 | 100.000 | % Recov | 05/05/03 | 84.000 | 116.000 |
| SURR | 1,2-Dichloroethane-d4 Surr | 17060-07-0 | 102.000 | % Recov | 05/05/03 | 82.000 | 136.000 |
| SURR | Toluene-d8 Surr | 2037-26-5 | 102.000 | % Recov | 05/05/03 | 89.000 | 119.000 |

BATCH QC

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BLANK | 1,1-Dichloroethane | 75-34-3 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | 1,1,1-Trichloroethane | 71-55-6 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | 1,1,2-Trichloroethane | 79-00-5 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | 1,1,2,2-Tetrachloroethane | 79-34-5 | < 1.0 | ug/L | 05/05/03 | 0.000 | 5.000 |
| BLANK | 1,1-Dichloroethene | 75-35-4 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | 1,2-Dichloroethane | 107-06-2 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | 1,2-Dichloroethene (cis & tran | 540-59-0 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | 1-Butanol | 71-36-3 | < 10 | mg/L | 05/05/03 | | |
| BLANK | 2-Hexanone | 591-78-6 | < 1.0 | mg/L | 05/05/03 | | |
| BLANK | 2-Pentanone | 107-87-9 | < 1.0 | mg/L | 05/05/03 | | |
| BLANK | 4-Methyl-2-pentanone | 108-10-1 | < 1.0 | mg/L | 05/05/03 | | |
| BLANK | Acetone | 67-64-1 | < 2.0 | mg/L | 05/05/03 | | |
| BLANK | Bromodichloromethane | 75-27-4 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Benzene | 71-43-2 | < 1.0 | ug/L | 05/05/03 | | |

# WSCF ANALYTICAL LABORATORY QC REPORT

SDG Number: WSCF20030567
Matrix: WATER
Test: VOA Ground Water Protection

SAF Number: F03-007
Sample Date:
Receive Date:

| QC Type | Analyte | CAS # | Results | Units | Analysis Date | Lower Limit | Upper Limit |
|---|---|---|---|---|---|---|---|
| BLANK | 4-Bromofluorobenzene Surr | 460-00-4 | 98.000 | % Recov | 05/05/03 | 84.000 | 116.000 |
| BLANK | Bromoform | 75-25-2 | < 1.0 | mg/L | 05/05/03 | | |
| BLANK | n-Butylbenzene | 104-51-8 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Carbon Disulfide | 75-15-0 | < 1.0 | mg/L | 05/05/03 | | |
| BLANK | Carbon Tetrachloride | 56-23-5 | < 1.0 | mg/L | 05/05/03 | | |
| BLANK | Dibromochloromethane | 124-48-1 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Chloroform | 67-66-3 | < 1.0 | mg/L | 05/05/03 | | |
| BLANK | Chlorobenzene | 108-90-7 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | cis-1,3-Dichloropropene | 10061-01-5 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Chloroethane | 75-00-3 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | 1,2-Dichloroethane-d4 Surr | 17060-07-0 | 102.000 | % Recov | 05/05/03 | 82.000 | 136.000 |
| BLANK | 1,2-Dichloropropane | 78-87-5 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Ethylbenzene | 100-41-4 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Bromomethane | 74-83-9 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Chloromethane | 74-87-3 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | 2-Butanone | 78-93-3 | < 1.0 | mg/L | 05/05/03 | | |
| BLANK | Methylene Chloride | 75-09-2 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Tetrachloroethene | 127-18-4 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Styrene | 100-42-5 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Total Xylenes | 1330-20-7 | < 1.0 | ug/L | 05/05/03 | 0.000 | 5.000 |
| BLANK | Toluene-d8 Surr | 2037-26-5 | 100.000 | % Recov | 05/05/03 | 89.000 | 119.000 |
| BLANK | Toluene | 108-88-3 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | trans-1,3-Dichloropropene | 10061-02-6 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Trichloroethene | 79-01-6 | < 1.0 | ug/L | 05/05/03 | | |
| BLANK | Vinyl Chloride | 75-01-4 | < 1.0 | mg/L | 05/05/03 | | |
| LCS | 1,1-Dichloroethene | 75-35-4 | 88.000 | % Recov | 05/05/03 | 70.000 | 130.000 |
| LCS | Benzene | 71-43-2 | 104.000 | % Recov | 05/05/03 | 70.000 | 130.000 |
| LCS | 4-Bromofluorobenzene Surr | 460-00-4 | 96.000 | % Recov | 05/05/03 | 84.000 | 116.000 |
| LCS | Chlorobenzene | 108-90-7 | 104.000 | % Recov | 05/05/03 | 70.000 | 130.000 |
| LCS | 1,2-Dichloroethane-d4 Surr | 17060-07-0 | 104.000 | % Recov | 05/05/03 | 82.000 | 136.000 |
| LCS | Toluene-d8 Surr | 2037-26-5 | 102.000 | % Recov | 05/05/03 | 89.000 | 119.000 |
| LCS | Toluene | 108-88-3 | 104.000 | % Recov | 05/05/03 | 70.000 | 130.000 |
| LCS | Trichloroethene | 79-01-6 | 100.000 | % Recov | 05/05/03 | 70.000 | 130.000 |

T4180-03-SLF-004

ATTACHMENT 3

**SAMPLE RECEIPT INFORMATION**

Consisting of 3 pages
Cover page not included

Waste Sampling and Characterization Facility
P.O. BOX 1970 S3-30, Richland, WA 99352
PHONE: (509) 373-7004/FAX: (509) 373-7134

5/21/03

File KB

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Ground Water Protection Program

Richland, WA 99352
Attn: Steve Trent

Customer Code: GPP
PO#: 117504/ES10
Group#: 20030567
Project#: F03-007
Proj Mgr: STEVE TRENT
Phone: 373-5869

OK

The following samples were received from you on 04/23/03. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using Waste Sampling and Characterization Facility.

| Sample# | Sample Id | Tests Scheduled | Matrix | Sample Date |
|---|---|---|---|---|
| W030000232 | B16WC0 | TRENT | Water | 04/23/03 |
| | | @2008 @8015GPP @AEA-30 @AEA-31 @AEA-32 | | |
| | | @GEA-GPP @IC-30 @ICP-GPP @PCBGPP @RA22630 @RA22 | | |
| | | @SVOCGPP @TPHD-WA @TPHG-WA @VOA-GPP CN-02 CR+6 | | |
| | | NH4-IC | | |

Test Acronym Description

| Test Acronym | Description |
|---|---|
| @2008 | ICP-2008 MS All possible metal |
| @8015GPP | Alcohols, Glycols - 8015 |
| @AEA-30 | Plutonium Isotopics by AEA |
| @AEA-31 | Americium by AEA |
| @AEA-32 | Uranium Isotopics by AEA |
| @GEA-GPP | Gamma Energy Analysis-grd H2O |
| @IC-30 | Anions by Ion Chromatography |
| @ICP-GPP | ICP Metals Analysis, Grd H20 P |
| @PCBGPP | PCBs complete list |
| @RA22630 | Ra-226 by AEA and GEA |
| @RA22830 | Ra-228 by GEA |
| @SVOCGPP | SW-846 8270B Semi-Vols |
| @TPHD-WA | WTPH-D TPH Diesel Range (Wa) |
| @TPHG-WA | NWTPH-GX TPH Gasoline Range |
| @VOA-GPP | VOA Ground Water Protection |
| CN-02 | Cyanide by Midi/Spectrophotom |
| CR+6 | Hexavalent chromium |
| NH4-IC | Ammonia (N) by IC |

COPY



00000070

3 - 1

3-2

| FH-Central Plateau Project | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | | F03-007-007 | Page 1 of 2 |
|---|---|---|---|---|
| Collector<br>Johansen/Pfister/Pope | Company Contact<br>LC Hulstrom | Telephone No.<br>373-3928 | Project Coordinator<br>TRENT, SJ | Price Code 7N<br>Air Quality ☐ |
| Project Designation<br>200-PW-2/200-PW-4 OU - QC Sampling | Sampling Location<br>200-PW-4 | | SAF No.<br>F03-007 | Data Turnaround<br>30 Days |
| Ice Chest No. GPC-99-043 | Field Logbook No.<br>HNF-N-3361 | COA<br>117504ES10 | Method of Shipment<br>Government Vehicle | |
| Shipped To<br>Waste Sampling & Characterization | Offsite Property No.<br>N/A | | Bill of Lading/Air Bill No.<br>N/A | |

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

20030567

| Preservation | HCl or H2SO4 to pH <2 Coo | Cool 4C | Cool 4C | HNO3 to pH <2 | TMS 4-23-03 H2S04 to pH<2 | Cool 4C | HCl to pH <2 Cool 4C | HCl to pH <2 Cool 4C | NaOH to pH >= 12 Cool 4C | HNO3 to pH <2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Type of Container | aGs* | aGs* | aG | aG | ~~G/P~~ P | P | aG | aG | P | P |
| No. of Container(s) | 3 | 3 | 4 | 2 | 1 | 1 | 2 | 2 | 1 | 1 |
| Volume | 40mL | 40mL | 1000mL | 1000mL | 500mL | 1000mL | 1000mL | 1000mL | 1000mL | 1000mL |
| SAMPLE ANALYSIS | See item (1) in Special Instructions. | See item (2) in Special Instructions. | See item (3) in Special Instructions. | See item (4) in Special Instructions. | Cations (IC) - 300.7 (Nitrogen in ammonium) | See item (5) in Special Instructions. | TPH-Diesel Range - WTPH-D | TPH-Gasoline Range - WTPH-G | Cyanide (Total) - 335.2 | See item (6) in Special Instructions. |

| Sample No. | Matrix * | Sample Date | Sample Time | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B16WC0 | WATER | 4-23-03 | 0830 | X | X | X | X | X | X | X | X | X | X |
| W0300002 32 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

| CHAIN OF POSSESSION | | Sign/Print Names | |
|---|---|---|---|
| Relinquished By/Removed From<br>FH Johansen/Pfister/Pope | Date/Time<br>4/23/03 1235 | Received By/Stored In<br>[signature] | Date/Time<br>4/23/03 1235 |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.

(1) VOA - 8260A (TCL); VOA - 8260A (Add-On) {2-Pentanone, Benzyl alcohol, n-Butylbenzene}
(2) Alcohols, Glycols, & Ketones - 8015 {1-Butanol, Diethyl ether, Ethylene glycol, Methanol}
(3) Semi-VOA - 8270A (TCL); Semi-VOA -- 8270A (Add-On) {2-Butoxyethanol, Tributyl phosphate}
(4) Trace Elements ICP/MS - 200.8 (Complete) {Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Uranium}; Isotopic Uranium; ICP Metals - 6010A (Add-on) {Bismuth, Boron}
(5) IC Anions - 300.0 {Chloride, Fluoride, ~~Nitrogen in Nitrate, Nitrogen in Nitrite~~ TMS 4-23-03, Phosphate, Sulfate}; Chromium Hex - 7196
(6) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Cesium-134, Tin-126}

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

COPY

| LABORATORY SECTION | Received By | Title | Date/Time |
|---|---|---|---|
| FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time |

(03/01/2002)

| FH-Central Plateau Project | CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST | F03-007-007 | Page 2 of 2 |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Collector<br>Johansen/Pfister/Pope | Company Contact<br>LC Hulstrom | Telephone No.<br>373-3928 | Project Coordinator<br>TRENT, SJ |
| Project Designation<br>200-PW-2/200-PW-4 OU - QC Sampling | Sampling Location<br>200-PW-4 | | SAF No.<br>F03-007 |
| Ice Chest No. ERL-99-043 | Field Logbook No.<br>HNF-N-3361 | COA<br>117504ES10 | Method of Shipment<br>Government Vehicle |
| Shipped To<br>Waste Sampling & Characterization | Offsite Property No.<br>N/A | | Bill of Lading/Air Bill No.<br>N/A |

Price Code 7N

Air Quality ☐

Data Turnaround 30 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Preservation | HNO3 to pH <2 | HNO3 to pH <2 | HNO3 to pH <2 | HNO3 to pH <2 | COOL4C | | | | | | |
| Type of Container | P | P | P | P | aG | | | | | | |
| No. of Container(s) | 1 | 1 | 1 | 2 | 4 | | | | | | |
| Volume | 1000mL | 1000mL | 1000mL | 1000mL | 1000mL | | | | | | |

SAMPLE ANALYSIS

| Sample No. | Matrix * | Sample Date | Sample Time | Americium-241 | Isotopic Plutonium | Isotopic Uranium | Isotopic Radium (Radium-226, Radium-228) | PCB's 8082 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B16WC0 | WATER | 4-23-03 | 0830 | X | X | X | X | X | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

CHAIN OF POSSESSION — Sign/Print Names

| Relinquished By/Removed From | Date/Time | Received By/Stored In | Date/Time |
|---|---|---|---|
| [illegible] | 4/23/03 1235 | [illegible] | 4/23/03 1235 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

SPECIAL INSTRUCTIONS

** The laboratory is to report both kerosene and diesel range compounds from the WTPH-D analysis.

COPY

Matrix *

S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

| | | | |
|---|---|---|---|
| LABORATORY SECTION | Received By | Title | Date/Time |
| FINAL SAMPLE DISPOSITION | Disposal Method | Disposed By | Date/Time |

(03/01/2002)