# DRAFT FINAL
# PHASE I RFI/RI WORK PLAN

## ROCKY FLATS PLANT

## OTHER OUTSIDE CLOSURES

## (OPERABLE UNIT NO. 10)

**U.S. DEPARTMENT OF ENERGY**
**Rocky Flats Plant**
**Golden, Colorado**

## ENVIRONMENTAL RESTORATION PROGRAM

## NOVEMBER 1991

## VOLUME III

REVIEWED FOR CLASSIFICATION
By
Date

ADMIN RECORD

A-OU10-000005

# DRAFT FINAL
# PHASE I RFI/RI WORK PLAN

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## OTHER OUTSIDE CLOSURES

## (OPERABLE UNIT NO. 10)

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**Rocky Flats Plant**
**Golden, Colorado**

## ENVIRONMENTAL RESTORATION PROGRAM

**NOVEMBER 1991**

**VOLUME III**

# APPENDIX A

# APPENDIX A-1

WESTON



ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

ORGANICS CASE NARRATIVE

Client: ROCKY FLATS
RFW #: 8811S044
W.O. #: 2029-38-01-0000

FRACTION: VOA

1. This set of samples consisted of 1 soil and 1 water sample collected on 11/14/88.

2. These samples were analyzed on 11/28/88 and 12/02/88 in accordance with SW 846 protocols.

3. All required holding times for these samples were met, with the exception of reanalysis of BH88A052 (002).

4. All tuning and calibration criteria were met for all samples.

5. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

6. Of the 15 surrogates analyzed, 3 were outside of QC limits. Samples not meeting QC limits were sample BH88A052 (002) for Toluene-d8 and Bromofluorobenzene upon first analysis on 11/28/88 and did not meet QC limits for Bromofluorobenzene on the second analysis on 12/02/88 which confirmed matrix effect.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.
B - Indicates the compound was found in the blank.

Approved by: R. F. Carney Date: 01/12/89
Robert F. Carney
GC/MS Unit Leader
Weston Analytical Laboratories

WESTON

# WESTON ANALYTICS
# VOLATILE ANALYTICAL DATA PACKAGE FOR ROCKY FLATS

DATE RECEIVED: 11/16/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A051 Trip Blank | 8811-044-001 | 11/14/88 | NA | 11/28/88 |
| BH88A052 FOT1, #129 | 8811-044-002 | 11/14/88 | NA | 11/28/88 |
| BH88A052 " " | 8811-044-002 DUP | 11/14/88 | NA | 12/02/88 |
| LAB QC: | | | | |
| BLANK 11/28 | 8811-044-0001BL | NA | NA | NA |
| BLANK 12/02 | 8811-044-0002BL | NA | NA | NA |

R F. Carey FOR
Norman W. Flynn
Organic Section Manager
WESTON Analytical Laboratories

01/12/89
DATE

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number 8811-044 Client. ROCKY FLATS 

Sample Information

| | | | Trip Blank | FCT1, #129 |
|---|---|---|---|---|
| RFW Batch ID | 8811-044-0001BL | 8811-044-0002BL | 8811-044-001 | 8811-044-002 |
| Customer ID | BLANK 11/28 | BLANK 12/02 | BH88A051 | BH88A052 |
| Matrix | Water | Water | Water | Soil |
| Units. | UG/L | UG/L | UG/L | UG/KG |
| Dilution Factor· | 1 | 1 | 1 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| Toluene-d8 | 99 % | 110 % | 97 % | 128 % |
| Bromofluorobenzene. | 93 % | 104 % | 97 % | 64 % |
| 1,2-Dichloroethane-d4. | 94 % | 92 % | 88 % | 80 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U | 11 U |
| Bromomethane | 10 U | 10 U | 10 U | 11 U |
| Vinyl Chloride | 10 U | 10 U | 10 U | 11 U |
| Chloroethane. | 10 U | 10 U | 10 U | 11 U |
| Methylene Chloride | 5 0 U | 3 0 J | 3 0 J | 4 0 J |
| Acetone | 10 U | 10 U | 10 U | 11 U |
| Carbon Disulfide | 5 0 U | 5.0 U | 5 0 U | 5 4 U |
| 1,1-Dichloroethene | 5.0 U | 5 0 U | 5.0 U | 5 4 U |
| 1,1-Dichloroethane | 5 0 U | 5 0 U | 5 0 U | 5 4 U |
| Trans-1,2-Dichloroethene | 5 0 U | 5 0 U | 5.0 U | 5 4 U |
| Chloroform | 5 0 U | 5 0 U | 5.0 U | 5 4 U |
| 1,2-Dichloroethane | 5 0 U | 5 0 U | 5.0 U | 5 4 U |
| 2-Butanone | 10 U | 10 U | 10 U | 11 U |
| 1,1,1-Trichloroethane | 5.0 U | 5 0 U | 5.0 U | 5 4 U |
| Carbon Tetrachloride | 5.0 U | 5.0 U | 5 0 U | 5 4 U |
| Vinyl Acetate | 10 U | 10 U | 10 U | 11 U |
| Bromodichloromethane | 5.0 U | 5 0 U | 5 0 U | 5 4 U |
| 1,2-Dichloropropane | 5 0 U | 5.0 U | 5 0 U | 5 4 U |
| Trans-1,3-Dichloropropene | 5 0 U | 5.0 U | 5.0 U | 5 4 U |
| Trichloroethene | 5.0 U | 5 0 U | 5.0 U | 5 4 U |
| Dibromochloromethane | 5 0 U | 5 0 U | 5 0 U | 5 4 U |
| 1,1,2-Trichloroethane | 5 0 U | 5.0 U | 5 0 U | 5 4 U |
| Benzene | 5.0 U | 5.0 U | 5.0 U | 3 0 J |
| cis-1,3-Dichloropropene | 5.0 U | 5 0 U | 5 0 U | 5 4 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U | 11 U |
| Bromoform | 5 0 U | 5.0 U | 5 0 U | 5 4 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U | 11 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 11 U |
| Tetrachloroethene | 5 0 U | 5.0 U | 5.0 U | 5 4 U |
| 1,1,2,2-Tetrachloroethane. | 5 0 U | 5 0 U | 5 0 U | 5 4 U |
| Toluene. | 5 0 U | 5 0 U | 5 0 U | 10 |
| Chlorobenzene | 5.0 U | 5.0 U | 5.0 U | 5 4 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5 0 U | 33 |
| Styrene | 5.0 U | 5 0 U | 5.0 U | 5 4 U |
| Total Xylenes | 5.0 U | 5.0 U | 5.0 U | 35 |

Modifiers. U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number 8811-044 Client: ROCKY FLATS 

Sample Information

FOTI, #129

| | |
|---|---|
| RFW Batch ID: | 8811-044-002 DUP |
| Customer ID. | BH88A052 |
| Matrix: | Soil |
| Units | UG/KG |
| Dilution Factor | 1 |

Sample Information

| | |
|---|---|
| Toluene-d8: | 109 % |
| Bromofluorobenzene: | 66 % |
| 1,2-Dichloroethane-d4: | 96 % |

Sample Information

| | | |
|---|---|---|
| Chloromethane | 11 | U |
| Bromomethane | 11 | U |
| Vinyl Chloride | 11 | U |
| Chloroethane | 11 | U |
| Methylene Chloride | 14 | B |
| Acetone | 18 | |
| Carbon Disulfide | 5 4 | U |
| 1,1-Dichloroethene | 5 4 | U |
| 1,1-Dichloroethane | 5.4 | U |
| Trans-1,2-Dichloroethene | 5.4 | U |
| Chloroform | 5.4 | U |
| 1,2-Dichloroethane | 5.4 | U |
| 2-Butanone | 11 | U |
| 1,1,1-Trichloroethane | 5.4 | U |
| Carbon Tetrachloride | 5.4 | U |
| Vinyl Acetate | 11 | U |
| Bromodichloromethane | 5 4 | U |
| 1,2-Dichloropropane | 5 4 | U |
| Trans-1,3-Dichloropropene | 5 4 | U |
| Trichloroethene | 5 4 | U |
| Dibromochloromethane | 5 4 | U |
| 1,1,2-Trichloroethane | 5.4 | U |
| Benzene | 5.0 | J |
| cis-1,3-Dichloropropene | 5.4 | U |
| 2-Chloroethylvinylether | 11 | U |
| Bromoform | 5.4 | U |
| 4-Methyl-2-pentanone | 11 | U |
| 2-Hexanone | 11 | U |
| Tetrachloroethene | 5.4 | U |
| 1,1,2,2-Tetrachloroethane | 5 4 | U |
| Toluene | 11 | |
| Chlorobenzene | 5 4 | U |
| Ethylbenzene | 40 | |
| Styrene | 5.4 | U |
| Total Xylenes | 42 | |

Modifiers: U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

ROCKY FLATS

January 11, 1989

88-11-S044

Tentatively Identified Compounds,
VOA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BLANK | 11/28/88 | | NONE FOUND | |
| BLANK | 12/02/88 | | NONE FOUND | |
| BH88A051 | 11/28/88 | | NONE FOUND | |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A052 | 11/28/88 | 387 | UNKNOWN | 220 |
| | | 503 | UNKNOWN | 1800 |
| | | 722 | UNKNOWN | 200 |
| | | 774 | UNKNOWN | 320 |
| | | 821 | UNKNOWN | 250 |
| BH88A052 DUP | 12/02/88 | 390 | UNKNOWN HYDROCARBON | 190 |
| | | 503 | UNKNOWN HYDROCARBON | 1400 |
| | | 529 | UNKNOWN HYDROCARBON | 270 |
| | | 775 | UNKNOWN HYDROCARBON | 400 |
| | | 821 | UNKNOWN HYDROCARBON | 260 |

Reviewed and approved R F. Carney

Robert F. Carney
GC/MS Unit Leader
Weston Analytical Laboratories

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

# ORGANICS CASE NARRATIVE

Client: ROCKY FLATS
RFW #: 8811S044
W.O. #: 2029-38-01-0000

FRACTION: BNA

1. This set of samples consisted of 1 soil sample collected on 11/14/88.

2. The sample was extracted on 11/21/88.

3. This sample was analyzed on 12/30/88 and re-analyzed on 01/03/89 in accordance with SW 846 protocols.

4. All required holding times for this sample were met, except for re-analysis on 01/03/89.

5. All tuning and calibration criteria were met for this sample.

6. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

7. Of the 24 surrogates analyzed, none were outside of QC limits.

8. Of the 22 matrix spike recoveries, none were outside of QC limits. (4-Nitrophenol was not recovered due to 1:30 dilution of matrix).

9. Of the 11 matrix spike RPD's, none were outside QC limits. No RPD for 4-Nitrophenol.

10. Sample BH88A052 had high Hydrocarbon m 174 - Leslie
warranting a 1:30 dilution and re-analysis 129 - Tom

The following data qualifiers are used in this

U - Indicates that the compound was a detected.
J - Indicates an estimated trace value.

Approved by: R.F. Carney Date: 01/12/89
Robert F. Carney
GC/MS Unit Leader
Weston Analytical Laboratories

WESTON ANALYTICS
SEMIVOLATILE ANALYTICAL DATA PACKAGE FOR
RF

DATE RECEIVED: 11/16/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A052 | 8811-044-002 | 11/14/88 | 11/21/88 | 01/03/89 |
| BH88A052 | 8811-044-002 MS | 11/14/88 | 11/21/88 | 01/03/89 |
| BH88A052 | 8811-044-002 MSD | 11/14/88 | 11/21/88 | 01/03/89 |
| LAB QC: | | | | |
| BLANK 11/21 | 8811-044-0001BL | NA | NA | NA |

R. F. Carney

Norman W. Flynn
Organic Section Manager
WESTON Analytical Laboratories

DATE

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number. 8811-044 Client ROCKY FLATS 

Sample Information

#174
FDT1

| RFW Batch ID. | 8811-044-0001BL | 8811-044-002 | 8811-044-002 MS | 8811-044-002 MSD |
|---|---|---|---|---|
| Customer ID: | BLANK 11/21 | BH88A052 | BH88A052 | BH88A052 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 30 | 30 | 30 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 90 % | 89 % | 99 % | 99 % |
| Phenol-d5 | 101 % | 66 % | 83 % | 86 % |
| 2,4,6-Br3-Phenol: | 87 % | 77 % | 86 % | 87 % |
| Nitrobenzene-d5· | 61 % | 54 % | 60 % | 63 % |
| 2-Fluorobiphenyl: | 62 % | 78 % | 84 % | 87 % |
| p-Terphenyl-d14: | 79 % | 111 % | 108 % | 114 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Phenol | 330 U | 11000 U | 66 % | 67 % |
| bis(2-Chloroethyl)Ether | 330 U | 11000 U | 11000 U | 11000 U |
| 2-Chlorophenol | 330 U | 11000 U | 79 % | 81 % |
| 1,3-Dichlorobenzene | 330 U | 11000 U | 11000 U | 11000 U |
| 1,4-Dichlorobenzene | 330 U | 11000 U | 84 % | 84 % |
| Benzyl Alcohol | 330 U | 11000 U | 11000 U | 11000 U |
| 1,2-Dichlorobenzene | 330 U | 11000 U | 11000 U | 11000 U |
| 2-Methylphenol | 330 U | 11000 U | 11000 U | 11000 U |
| bis(2-Chloroisopropyl)Ether | 330 U | 11000 U | 11000 U | 11000 U |
| 4-Methylphenol | 330 U | 11000 U | 11000 U | 11000 U |
| N-Nitroso-di-n-propylamine | 330 U | 11000 U | 75 % | 72 % |
| Hexachloroethane | 330 U | 11000 U | 11000 U | 11000 U |
| Nitrobenzene | 330 U | 11000 U | 11000 U | 11000 U |
| Isophorone | 330 U | 11000 U | 11000 U | 11000 U |
| 2-Nitrophenol | 330 U | 11000 U | 11000 U | 11000 U |
| 2,4-Dimethylphenol | 330 U | 11000 U | 11000 U | 11000 U |
| Benzoic Acid | 1600 U | 53000 U | 53000 U | 53000 U |
| bis(2-Chloroethoxy)Methane | 330 U | 11000 U | 11000 U | 11000 U |
| 2,4-Dichlorophenol | 330 U | 11000 U | 11000 U | 11000 U |
| 1,2,4-Trichlorobenzene | 330 U | 11000 U | 87 % | 90 % |
| Naphthalene | 330 U | 11000 U | 11000 U | 11000 U |
| 4-Chloroaniline | 330 U | 11000 U | 11000 U | 11000 U |
| Hexachlororbutadiene | 330 U | 11000 U | 11000 U | 11000 U |
| 4-Chloro-3-methylphenol | 330 U | 11000 U | 59 % | 68 % |
| 2-Methylnaphthalene | 330 U | 7800 J | 6900 J | 11000 U |
| Hexachlorocyclopentadiene | 330 U | 11000 U | 11000 U | 11000 U |
| 2,4,6-Trichlorophenol | 330 U | 11000 U | 11000 U | 11000 U |
| 2,4,5-Trichlorophenol | 1600 U | 53000 U | 53000 U | 53000 U |
| 2-Chloronaphthalene | 330 U | 11000 U | 11000 U | 11000 U |
| 2-Nitroaniline | 1600 U | 53000 U | 53000 U | 53000 U |
| Dimethyl Phthalate | 330 U | 11000 U | 11000 U | 11000 U |
| Acenaphthylene | 330 U | 11000 U | 11000 U | 11000 U |

Modified)U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8811-044 Client: ROCKY FLATS 

Sample Information

#129
FDT1

| RFW Batch ID | 8811-044-0001BL | 8811-044-002 | 8811-044-002 MS | 8811-044-002 MSD |
|---|---|---|---|---|
| Customer ID: | BLANK 11/21 | BH88A052 | BH88A052 | BH88A052 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor. | 1 | 30 | 30 | 30 |

Analytes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3-Nitroaniline | 1600 | U | 53000 | U | 53000 | U | 53000 | U |
| Acenaphthene | 330 | U | 11000 | U | 108 | % | 117 | % |
| 2,4-Dinitrophenol | 1600 | U | 53000 | U | 53000 | U | 53000 | U |
| 4-Nitrophenol | 1600 | U | 53000 | U | DL | | DL | |
| Dibenzofuran | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| 2,4-Dinitrotoluene | 330 | U | 11000 | U | 69 | % | 78 | % |
| 2,6-Dinitrotoluene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Diethylphthalate | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| 4-Chlorophenyl-phenylether | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Fluorene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| 4-Nitroaniline | 1600 | U | 53000 | U | 53000 | U | 53000 | U |
| 4,6-Dinitro-2-methylphenol | 1600 | U | 53000 | U | 53000 | U | 53000 | U |
| N-Nitrosodiphenylamine | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| 4-Bromophenyl-phenylether | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Hexachlorobenzene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Pentachlorophenol | 1600 | U | 53000 | U | 54 | % | 60 | % |
| Phenanthrene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Anthracene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| di-n-Butyl Phthalate | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Fluoranthene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Pyrene | 330 | U | 7100 | J | 60 | % | 78 | % |
| Butyl Benzyl Phthalate | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| 3,3'-Dichlorobenzidine | 660 | U | 21000 | U | 21000 | U | 21000 | U |
| Benzo(a)Anthracene | 330 | U | 3600 | J | 2900 | J | 3000 | J |
| bis(2-Ethylhexyl)Phthalate | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Chrysene | 330 | U | 8100 | J | 7000 | J | 7100 | J |
| di-n-Octyl Phthalate | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Benzo(b)Fluoranthene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Benzo(k)Fluoranthene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Benzo(a)Pyrene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Indeno(1,2,3-cd)Pyrene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Dibenz(a,h)Anthracene | 330 | U | 11000 | U | 11000 | U | 11000 | U |
| Benzo(g,h,i)Perylene | 330 | U | 11000 | U | 11000 | U | 11000 | U |

Modifiers. U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

ROCKY FLATS

January 10, 1989
88-11-S044

Tentatively Identified Compounds,
BNA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BLANK | 12/30/88 | 1852 | UNKNOWN | 10 |
| BH88A052 | 01/03/89 | 1571 | UNKNOWN HYDROCARBON | 870 |
| | | 1633 | UNKNOWN HYDROCARBON | 1980 |
| | | 1691 | UNKNOWN HYDROCARBON | 1980 |
| | | 1788 | UNKNOWN HYDROCARBON | 1900 |
| | | 1802 | UNKNOWN HYDROCARBON | 1700 |
| | | 1853 | UNKNOWN HYDROCARBON | 1700 |
| | | 1902 | UNKNOWN HYDROCARBON | 1400 |
| | | 1956 | UNKNOWN HYDROCARBON | 1100 |
| | | 2087 | UNKNOWN HYDROCARBON | 1700 |
| | | 2265 | UNKNOWN HYDROCARBON | 1050 |

Reviewed and approved R F. Carney
Robert F. Carney
GC/MS Unit Leader
Weston Analytical Laboratories

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

1000

# ORGANICS CASE NARRATIVE

Client: ROCKY FLATS
RFW #: 8811S049
W.O. #: 2029-38-01-0000

FRACTION: VOA

1. This set of samples consisted of 1 water and 5 soil samples collected on 11/15/88.

2. These samples were analyzed on 11/25/88 and 12/02/88 in accordance with SW 846 protocols.

3. All required holding times for these samples were met, with the exception of reanalysis of BH88A056 (-003).

4. All tuning and calibration criteria were met for all samples.

5. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

6. Of the 27 surrogates analyzed, none were outside of QC limits.

7. All soil samples required a diluted analysis due to Hydrocarbon matrix interferrence.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.

Approved by: R. F. Carney
Robert F. Carney
GC/MS Unit Leader
Weston Analytics Laboratories

Date: 01/12/89

WESTON

# WESTON ANALYTICS
# VOLATILE ANALYTICAL DATA PACKAGE FOR
# RF

DATE RECEIVED: 11/17/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A054 FOT2, #129 | 8811-049-001 | 11/15/88 | NA | 11/25/88 |
| BH88A055 FOT2, #129 | 8811-049-002 | 11/15/88 | NA | 11/25/88 |
| BH88A056 FOT3, #129 | 8811-049-003 | 11/15/88 | NA | 12/02/88 |
| BH88A057 FOT4?, #129 | 8811-049-004 | 11/15/88 | NA | 11/25/88 |
| BH88A058 FOT4, #129 | 8811-049-005 | 11/15/88 | NA | 11/25/88 |
| BH88A059 Field Blank | 8811-049-006 | 11/15/88 | NA | 11/25/88 |
| LAB QC: | | | | |
| BLANK 11/25 | 8811-049-0001BL | NA | NA | NA |
| BLANK 12/02 | 8811-049-0002BL | NA | NA | NA |

R F. Carney FOR
Norman W. Flynn
Organic Section Manager
WESTON Analytical Laboratories

01/12/89
DATE

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number. 8811-049 Client ROCKY FLATS 

Sample Information

| | | | #129 FOT2 | #129 FOT2 |
|---|---|---|---|---|
| RFW Batch ID· | 8811-049-0001BL | 8811-049-0002BL | 8811-049-001 | 8811-049-002 |
| Customer ID: | BLANK 11/25 | BLANK 12/02 | BH88A054 | BH88A055 |
| Matrix: | Water | Water | Soil | Soil |
| Units | UG/L | UG/L | UG/KG | UG/KG |
| Dilution Factor· | 1 | 1 | 50 | 50 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 100 % | 110 % | 98 % | 98 % |
| Bromofluorobenzene: | 101 % | 104 % | 97 % | 99 % |
| 1,2-Dichloroethane-d4: | 97 % | 92 % | 94 % | 91 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 590 U | 650 U |
| Bromomethane | 10 U | 10 U | 590 U | 650 U |
| Vinyl Chloride | 10 U | 10 U | 590 U | 650 U |
| Chloroethane | 10 U | 10 U | 590 U | 650 U |
| Methylene Chloride | 5 0 U | 3 0 J | 430 | 65 J |
| Acetone | 10 U | 10 U | 590 U | 650 U |
| Carbon Disulfide | 5.0 U | 5.0 U | 300 U | 320 U |
| 1,1-Dichloroethene | 5.0 U | 5 0 U | 300 U | 320 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 300 U | 320 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 300 U | 320 U |
| Chloroform | 5 0 U | 5.0 U | 300 U | 320 U |
| 1,2-Dichloroethane | 5.0 U | 5.0 U | 300 U | 320 U |
| 2-Butanone | 10 U | 10 U | 590 U | 650 U |
| 1,1,1-Trichloroethane | 5.0 U | 5.0 U | 300 U | 340 |
| Carbon Tetrachloride | 5 0 U | 5.0 U | 300 U | 320 U |
| Vinyl Acetate | 10 U | 10 U | 590 U | 650 U |
| Bromodichloromethane | 5.0 U | 5.0 U | 300 U | 320 U |
| 1,2-Dichloropropane | 5 0 U | 5.0 U | 300 U | 320 U |
| Trans-1,3-Dichloropropene | 5.0 U | 5.0 U | 300 U | 320 U |
| Trichloroethene | 5 0 U | 5 0 U | 300 U | 320 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 300 U | 320 U |
| 1,1,2-Trichloroethane | 5 0 U | 5 0 U | 300 U | 320 U |
| Benzene | 5 0 U | 5 0 U | 300 U | 320 U |
| cis-1,3-Dichloropropene | 5 0 U | 5.0 U | 300 U | 320 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 590 U | 650 U |
| Bromoform | 5 0 U | 5.0 U | 300 U | 320 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 590 U | 650 U |
| 2-Hexanone | 10 U | 10 U | 590 U | 650 U |
| Tetrachloroethene | 5.0 U | 5.0 U | 300 U | 320 U |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.0 U | 300 U | 320 U |
| Toluene | 5.0 U | 5.0 U | 71 J | 180 J |
| Chlorobenzene | 5 0 U | 5.0 U | 300 U | 320 U |
| Ethylbenzene | 5.0 U | 5.0 U | 140 J | 200 J |
| Styrene | 5.0 U | 5.0 U | 300 U | 320 U |
| Total Xylenes | 5.0 U | 5.0 U | 330 | 1490 |

Modifiers· U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number. 8811-049 Client ROCKY FLATS 

Sample Information

| | #129 FOT3 | #129 FOT4 | #129 FOT4 | Field Blank |
|---|---|---|---|---|
| RFW Batch ID | 8811-049-003 | 8811-049-004 | 8811-049-005 | 8811-049-006 |
| Customer ID: | BH88A056 | BH88A057 | BH88A058 | BH88A059 |
| Matrix: | Soil | Soil | Soil | Water |
| Units: | UG/KG | UG/KG | UG/KG | UG/L |
| Dilution Factor: | 100 | 50 | 50 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 80 % | 98 % | 97 % | 99 % |
| Bromofluorobenzene: | 86 % | 100 % | 98 % | 101 % |
| 1,2-Dichloroethane-d4: | 103 % | 91 % | 91 % | 96 % |

Analytes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Chloromethane | 1100 | U | 570 | U | 560 | U | 10 | U |
| Bromomethane | 1100 | U | 570 | U | 560 | U | 10 | U |
| Vinyl Chloride | 1100 | U | 570 | U | 560 | U | 10 | U |
| Chloroethane | 1100 | U | 570 | U | 560 | U | 10 | U |
| Methylene Chloride | 1100 | | 60 | J | 57 | J | 5.0 | U |
| Acetone | 1100 | U | 370 | J | 560 | U | 10 | U |
| Carbon Disulfide | 570 | U | 280 | U | 280 | U | 5.0 | U |
| 1,1-Dichloroethene | 570 | U | 280 | U | 280 | U | 5.0 | U |
| 1,1-Dichloroethane | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Trans-1,2-Dichloroethene | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Chloroform | 570 | U | 280 | U | 280 | U | 11 | |
| 1,2-Dichloroethane | 570 | U | 280 | U | 280 | U | 5 0 | U |
| 2-Butanone | 1100 | U | 570 | U | 560 | U | 10 | U |
| 1,1,1-Trichloroethane | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Carbon Tetrachloride | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Vinyl Acetate | 1100 | U | 570 | U | 560 | U | 10 | U |
| Bromodichloromethane | 570 | U | 280 | U | 280 | U | 5.0 | U |
| 1,2-Dichloropropane | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Trans-1,3-Dichloropropene | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Trichloroethene | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Dibromochloromethane | 570 | U | 280 | U | 280 | U | 5.0 | U |
| 1,1,2-Trichloroethane | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Benzene | 570 | | 78 | J | 180 | J | 5.0 | U |
| cis-1,3-Dichloropropene | 570 | U | 280 | U | 280 | U | 5.0 | U |
| 2-Chloroethylvinylether | 1100 | U | 570 | U | 560 | U | 10 | U |
| Bromoform | 570 | U | 280 | U | 280 | U | 5.0 | U |
| 4-Methyl-2-pentanone | 1100 | U | 570 | U | 560 | U | 10 | U |
| 2-Hexanone | 1100 | U | 570 | U | 560 | U | 10 | U |
| Tetrachloroethene | 570 | U | 280 | U | 280 | U | 5.0 | U |
| 1,1,2,2-Tetrachloroethane | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Toluene | 1700 | | 170 | J | 320 | | 5.0 | U |
| Chlorobenzene | 570 | U | 280 | U | 280 | U | 5.0 | U |
| Ethylbenzene | 1600 | | 360 | | 490 | | 5.0 | U |
| Styrene | 570 | U | 280 | U | 280 | U | 5 0 | U |
| Total Xylenes | 4700 | | 1990 | | 3000 | | 5.0 | U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

ROCKY FLATS

January 11, 1989
88-11-S049

Tentatively Identified Compounds,
VOA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BLANK | 11/25/88 | | NONE FOUND | |
| BLANK | 12/02/88 | | NONE FOUND | |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A054 | 11/25/88 | 503 | UNKNOWN HYDROCARBON | 870 |
| | | 721 | UNKNOWN HYDROCARBON | 410 |
| | | 820 | UNKNOWN HYDROCARBON | 880 |
| | | 843 | UNKNOWN CYCLIC HYDROCARBON | 380 |
| | | 880 | UNKNOWN CYCLIC HYDROCARBON | 360 |
| BH88A055 | 11/25/88 | 589 | UNKNOWN HYDROCARBON | 250 |
| | | 713 | UNKNOWN CYCLIC HYDROCARBON | 350 |
| | | 721 | UNKNOWN | 600 |
| | | 734 | UNKNOWN HYDROCARBON | 300 |
| | | 878 | UNKNOWN | 300 |
| BH88A056 | 12/02/88 | 589 | UNKNOWN HYDROCARBON | 560 |
| | | 735 | UNKNOWN HYDROCARBON | 560 |
| | | 822 | UNKNOWN HYDROCARBON | 2800 |
| | | 880 | UNKNOWN HYDROCARBON | 530 |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A057 | 11/25/88 | 503 | UNKNOWN HYDROCARBON | 250 |
| | | 589 | UNKNOWN HYDROCARBON | 290 |
| | | 721 | UNKNOWN HYDROCARBON | 690 |
| | | 734 | UNKNOWN HYDROCARBON | 350 |
| | | 878 | UNKNOWN HYDROCARBON | 240 |
| | | 890 | UNKNOWN HYDROCARBON | 120 |
| BH88A058 | 11/25/88 | 457 | UNKNOWN HYDROCARBON | 450 |
| | | 503 | UNKNOWN HYDROCARBON | 1100 |
| | | 589 | UNKNOWN HYDROCARBON | 370 |
| | | 721 | UNKNOWN HYDROCARBON | 440 |
| | | 821 | UNKNOWN HYDROCARBON | 1700 |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BH88A059 | 11/25/88 | | NONE FOUND | |

Reviewed and approved R F. Carney

Robert F. Carney
GC/MS Unit Leader
Weston Analytical Laboratories

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

Sample Information

| | | | | |
|---|---|---|---|---|
| | | | #182 | #129 |
| | | | ISO23 | FOTI |
| RFW Batch ID | 8810-108-001 MS | 8810-108-001 DUP | 8810-108-002 | 8811-044-002 |
| Customer ID | BH88A048 | BH88A048 | BH88A049 | BH88A052 |
| Collection Date | / / | / / | / / | 11/14/88 |
| Matrix | Soil | Soil | Soil | Soil |
| Units. | % RECOVERY | MG/KG | MG/KG | MG/KG |

Metals

| | | | | |
|---|---|---|---|---|
| Aluminum (Al), total..... | 613 * % | 16700 | 10500 | 8110 |
| Antimony (Sb), total ..... | 2.3 % | 13.2 U | 12 8 U | NR |
| Arsenic (As), total..... | 73 0 % | 2.2 U | 2 1 U | 2 1 U |
| Barium (Ba), total..... | 92 8 % | 66.1 | 68.3 | 46 6 |
| Beryllium (Be), total..... | 84 8 % | 1.7 | 1.1 | 1 3 |
| Cadmium (Cd), total..... | 83 7 % | 5.4 | 4 9 | 3 6 |
| Calcium (Ca), total..... | NR | 4740 | 4980 | 4860 |
| Cesium (Cs), total.... ..... | NR | NR | NR | NR |
| Chromium (Cr), total..... .. | 110 % | 13.0 | 8 4 | 8 4 |
| Cobalt (Co), total..... ... | 99 3 % | 10.8 U | 10 8 U | 10 6 U |
| Copper (Cu), total ..... | 73.5 % | 20 3 | 31 9 | 11 9 |
| Iron (Fe), total ..... | 1100 * % | 16100 | 18400 | 11800 |
| Lead (Pb), total..... . | 324 % | 3.3 | 3.4 | 13 5 |
| Lithium (Li), total ..... . | NR | NR | NR | NR |
| Magnesium (Mg), total ..... .. | NR | 2720 | 4400 | 1790 |
| Manganese (Mn), total..... .. | 0 * % | 160 | 28.2 | 112 |
| Mercury (Hg), total..... . | NR | NR | 0.23 | 0 47 |
| Molybdenum(Mo), total..... .. | NR | NR | NR | NR |
| Nickel (Ni), total. .... . | 91.0 % | 20 1 | 15 0 | 18 9 |
| Potassium (K ), total..... . | NR | 1830 | 2820 | 1100 |
| Selenium (Se), total .... . . | 83 0 % | 1.1 U | 1 1 U | 1.0 U |
| Silver (Ag), total..... .. | 0 % | 2.2 U | 2 2 U | 2 1 U |
| Sodium (Na), total. .. ... . | NR | 1080 U | 1080 U | 1060 U |
| Strontium (Sr), total..... . | 188 % | 21.6 U | 21 7 U | 21 1 U |
| Thallium (Tl), total.. .. .. . | 95 2 % | 2.2 U | 2.1 U | 2 1 U |
| Tin (Sn), total..... . | NR | NR | NR | NR |
| Vanadium (V ), total. ..... . | 98 2 % | 40.1 | 36 0 | 23 3 |
| Zinc (Zn), total.. .... . | 17.8 % | 39.2 | 45.4 | 30 1 |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number. Client: ROCKWELL (ROCKY FLATS) 

Sample Information

#129
FOT2

| RFW Batch ID. | 8811-044-002 MS | 8811-044-002 DUP | 8811-049-001 | 8811-049-001 MS |
|---|---|---|---|---|
| Customer ID | BH88A052 | BH88A052 | BH88A054 | BH88A054 |
| Collection Date. | 11/14/88 | 11/14/88 | 11/15/88 | 11/15/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units | % RECOVERY | MG/KG | MG/KG | % RECOVERY |
| **Metals** | | | | |
| Aluminum (Al), total..... | 108 * % | 6380 | 3880 | 693 % |
| Antimony (Sb), total..... | 0 % | 12.5 U | 14 2 U | 20 9 % |
| Arsenic (As), total..... | 106 % | 2 1 U | 2 4 U | 86 0 % |
| Barium (Ba), total..... | 91.9 % | 41 5 U | 46 1 U | 107 % |
| Beryllium (Be), total..... | 83 3 % | 1 1 | 1.2 U | 105 % |
| Cadmium (Cd), total..... | 93.5 % | 3 1 | 1 5 | 101 % |
| Calcium (Ca), total..... . | 0 % | 4770 | 3230 | 0 % |
| Cesium (Cs), total.... ..... | NR | NR | NR | NR |
| Chromium (Cr), total ..... .. | 104 % | 6.8 | 6 8 | 94 9 % |
| Cobalt (Co), total..... . | 97 0 % | 10.4 U | 11 5 U | 97 1 % |
| Copper (Cu), total..... | 106 % | 10.6 | 6 4 | 106 % |
| Iron (Fe), total..... . | 243 * % | 9090 | 6200 | 268 * % |
| Lead (Pb), total ... ..... | 31 0 % | 13 5 | 4 8 | 264 % |
| Lithium (Li), total. .. .. . | NR | NR | NR | NR |
| Magnesium (Mg), total .... .. | 5 6 % | 1760 | 1150 U | 30 0 % |
| Manganese (Mn), total. ..... | 174 % | 172 | 67 3 | 117 % |
| Mercury (Hg), total ..... | NR | 0 26 | 0 45 | 71 2 % |
| Molybdenum(Mo), total ..... | NR | NR | NR | NR |
| Nickel (Ni), total... ..... | 92.7 % | 18.5 | 9 2 U | 97 3 % |
| Potassium (K ), total..... .. | NR | 1100 | 1150 U | NR |
| Selenium (Se), total.... ..... | 305 % | 1.0 U | 1 2 U | 74 0 % |
| Silver (Ag), total ... ... . | 0 % | 2 1 U | 2 3 U | 0 % |
| Sodium (Na), total.... ... . | NR | 1040 U | NR | NR |
| Strontium (Sr), total..... | 90.8 % | 20.8 U | 23 1 U | 92 8 % |
| Thallium (Tl), total..... | 95 3 % | 2 1 U | 2 4 U | 94 1 % |
| Tin (Sn), total ..... ... | NR | NR | NR | NR |
| Vanadium (V ), total. .... ... | 93 9 % | 19.9 | 15 5 | 89 4 % |
| Zinc (Zn), total..... .. | 87 8 % | 33 6 | 12 7 | 87 3 % |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT



Sample Information

| | | | | |
|---|---|---|---|---|
| | | #129 FOT3 | #129 FOT4 | FB |
| RFW Batch ID | 8811-049-001 DUP | 8811-049-003 | 8811-049-004 | 8811-049-006 |
| Customer ID: | BH88A054 | BH88A056 | BH88A057 | BH88A059 |
| Collection Date· | 11/15/88 | 11/15/88 | 11/15/88 | 11/15/88 |
| Matrix | Soil | Soil | Soil | Water |
| Units | MG/KG | MG/KG | MG/KG | MG/L |

Metals

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | (Al), total..... . | 3390 | | 9330 | | 3500 | | 0 20 | U |
| Antimony | (Sb), total..... .... | 13.6 | U | 12.9 | U | 13.3 | U | 0 060 | U |
| Arsenic | (As), total..... | 2.3 | U | 2.4 | | 2.2 | U | 0 010 | U |
| Barium | (Ba), total..... | 46.1 | U | 43.3 | U | 45.4 | U | 0 20 | U |
| Beryllium | (Be), total..... | 1.2 | U | 1.1 | U | 1.1 | U | 0 0050 | U |
| Cadmium | (Cd), total.... ..... | 1 2 | U | 3 4 | | 1.1 | U | 0 0050 | U |
| Calcium | (Ca), total..... | 1610 | | 1730 | | 1130 | U | 5 0 | U |
| Cesium | (Cs), total..... | | NR | | NR | | NR | | NR |
| Chromium | (Cr), total..... | 4 2 | | 16.2 | U | 4 3 | | 0 010 | U |
| Cobalt | (Co), total..... .. | 11.5 | U | 10.8 | U | 11 3 | U | 0 050 | U |
| Copper | (Cu), total.. . .. | 7.3 | | 9.6 | | 5 7 | U | 0 025 | U |
| Iron | (Fe), total..... | 4840 | | 9070 | | 3740 | | 0 10 | U |
| Lead | (Pb), total..... .. | 4 6 | | 37 8 | | 565 | | 0 0050 | U |
| Lithium | (Li), total.. . . | | NR | | NR | | NR | | NR |
| Magnesium | (Mg), total..... .... | 1150 | U | 1280 | | 1130 | U | 5 0 | U |
| Manganese | (Mn), total..... .... | 56 5 | | 87.5 | | 41 7 | | 0 015 | U |
| Mercury | (Hg), total ..... . | 0.37 | | 0.28 | | 0.18 | | 0 00057 | |
| Molybdenum | (Mo), total..... . | | NR | | NR | | NR | | NR |
| Nickel | (Ni), total..... | 9.2 | U | 8.7 | | 9 1 | U | 0 040 | U |
| Potassium | (K ), total.. .. .... | 1150 | U | 1080 | U | 1130 | U | 5 0 | U |
| Selenium | (Se), total..... | 1 1 | U | 1 1 | U | 1 1 | U | 0 0050 | U |
| Silver | (Ag), total.... ..... | 2 3 | U | 2.2 | U | 2 3 | U | 0 010 | U |
| Sodium | (Na), total . .. | 1150 | U | 1080 | U | 1130 | U | 5 0 | U |
| Strontium | (Sr), total... ... | 23 1 | U | 21.6 | U | 22 7 | U | 0 10 | U |
| Thallium | (Tl), total.. .... | 2.3 | U | 2.1 | U | 2.2 | U | 0 010 | U |
| Tin | (Sn), total... .. .. | | NR | | NR | | NR | | NR |
| Vanadium | (V ), total.. ..... . | 11.6 | | 21.9 | | 11 3 | U | 0 050 | U |
| Zinc | (Zn), total..... | 25.6 | | 19 8 | | 15 5 | | 0 020 | U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

SUBT. 29
FOTI

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-108-002 MS | 8810-108-002 MSD | 8811-044-002 | 8811-044-002 MS |
| Customer ID. | BH88A049 | BH88A049 | BH88A052 | BH88A052 |
| Collection Date | 10/27/88 | 10/27/88 | 11/14/88 | 11/14/88 |
| Matrix | Soil | Soil | Soil | Soil |
| Units | % RECOVERY | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol | 62 % | 76 % | 89 % | 99 % |
| Phenol-d5. | 92 % | 112% | 66 % | 83 % |
| 2,4,6-Br3-Phenol | 78 % | 92 % | 77 % | 86 % |
| Nitrobenzene-d5 | 55 % | 65 % | 54 % | 60 % |
| 2-Fluorobiphenyl | 65 % | 80 % | 78 % | 84 % |
| p-Terphenyl-d14 | 85 % | 100% | 111% | 108% |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol..... | 68 % | 83 % | 11000 U | 66 % |
| bis(2-Chloroethyl)Ether..... | 1800 U | 1800 U | 11000 U | 11000 U |
| 2-Chlorophenol..... | 68 % | 82 % | 11000 U | 79 % |
| 1,3-Dichlorobenzene..... ... | 1800 U | 1800 U | 11000 U | 11000 U |
| 1,4-Dichlorobenzene..... .. | 45 % | 57 % | 11000 U | 84 % |
| Benzyl Alcohol..... ..... . | 1800 U | 1800 U | 11000 U | 11000 U |
| 1,2-Dichlorobenzene..... . | 1800 U | 1800 U | 11000 U | 11000 U |
| 2-Methylphenol ..... | 1800 U | 1800 U | 11000 U | 11000 U |
| bis(2-Chloroisopropyl)Ether. .. | 1800 U | 1800 U | 11000 U | 11000 U |
| 4-Methylphenol..... . . | 1800 U | 1800 U | 11000 U | 11000 U |
| N-Nitroso-di-n-propylamine..... | 60 % | 71 % | 11000 U | 75 % |
| N-Nitroso-di-methylamine..... | NR | NR | NR | NR |
| Hexachloroethane..... | 1800 U | 1800 U | 11000 U | 11000 U |
| Nitrobenzene..... | 1800 U | 1800 U | 11000 U | 11000 U |
| Isophorone..... | 1800 U | 1800 U | 11000 U | 11000 U |
| 2-Nitrophenol..... | 1800 U | 1800 U | 11000 U | 11000 U |
| 2,4-Dimethylphenol..... | 1800 U | 1800 U | 11000 U | 11000 U |
| Benzoic Acid..... | 9000 U | 9000 U | 53000 U | 53000 U |
| bis(2-Chloroethoxy)Methane. .. | 1800 U | 1800 U | 11000 U | 11000 U |
| 2,4-Dichlorophenol..... . . . | 1800 U | 1800 U | 11000 U | 11000 U |
| 1,2,4-Trichlorobenzene... . .. | 60 % | 71 % | 11000 U | 87 % |
| Naphthalene..... .. | 1800 U | 1800 U | 11000 U | 11000 U |
| 4-Chloroaniline..... .. | 1800 U | 1800 U | 11000 U | 11000 U |
| Hexachlororbutadiene..... .. | 1800 U | 1800 U | 11000 U | 11000 U |
| 4-Chloro-3-methylphenol... . | 84 % | 99 % | 11000 U | 59 % |
| 2-Methylnaphthalene..... . ... | 1800 U | 1800 U | 7800 J | 6900 J |
| Hexachlorocyclopentadiene. .. . | 1800 U | 1800 U | 11000 U | 11000 U |
| 2,4,6-Trichlorophenol..... .. | 1800 U | 1800 U | 11000 U | 11000 U |
| 2,4,5-Trichlorophenol..... | 9000 U | 9000 U | 53000 U | 53000 U |
| 2-Chloronaphthalene.... ..... | 1800 U | 1800 U | 11000 U | 11000 U |
| 2-Nitroaniline..... . | 9000 U | 9000 U | 53000 U | 53000 U |
| Dimethyl Phthalate..... ..... | 1800 U | 1800 U | 11000 U | 11000 U |
| Acenaphthylene..... | 1800 U | 1800 U | 11000 U | 11000 U |
| 3-Nitroaniline..... | 9000 U | 9000 U | 53000 U | 53000 U |
| Acenaphthene..... | 77 % | 88 % | 11000 U | 108 % |
| 2,4-Dinitrophenol..... ..... . | 9000 U | 9000 U | 53000 U | 53000 U |
| 4-Nitrophenol..... | 74 % | 89 % | 53000 U | DL |
| Dibenzofuran..... | 1800 U | 1800 U | 11000 U | 11000 U |
| 2,4-Dinitrotoluene..... | 96 % | 110 % | 11000 U | 69 % |
| 2,6-Dinitrotoluene..... | 1800 U | 1800 U | 11000 U | 11000 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-108-002 MS | 8810-108-002 MSD | #129 FDT1 8811-044-002 | 8811-044-002 MS |
| Customer ID | BH88A049 | BH88A049 | BH88A052 | BH88A052 |
| Collection Date. | 10/27/88 | 10/27/88 | 11/14/88 | 11/14/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units. | % RECOVERY | UG/KG | UG/KG | UG/KG |

Analytes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Diethylphthalate..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| 4-Chlorophenyl-phenylether..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Fluorene..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| 4-Nitroaniline..... | 9000 | U | 9000 | U | 53000 | U | 53000 | U |
| 4,6-Dinitro-2-methylphenol..... | 9000 | U | 9000 | U | 53000 | U | 53000 | U |
| N-Nitrosodiphenylamine..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| 4-Bromophenyl-phenylether..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Hexachlorobenzene..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Pentachlorophenol..... | 28 | % | 34 | % | 53000 | U | 54 | % |
| Phenanthrene..... | 1300 | J | 880 | J | 11000 | U | 11000 | U |
| Anthracene..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| di-n-Butyl Phthalate..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Fluoranthene..... | 1500 | J | 990 | J | 11000 | U | 11000 | U |
| Pyrene..... | 103 | % | 105 | % | 7100 | J | 60 | % |
| Butyl Benzyl Phthalate..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| 3,3'-Dichlorobenzidine .... .. | 3600 | U | 3600 | U | 21000 | U | 21000 | U |
| Benzo(a)Anthracene ..... .. | 1800 | U | 1800 | U | 3600 | J | 2900 | J |
| bis(2-Ethylhexyl)Phthalate..... | 500 | J | 610 | J | 11000 | U | 11000 | U |
| Chrysene..... | 560 | J | 390 | J | 8100 | J | 7000 | J |
| di-n-Octyl Phthalate..... ..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Benzo(b)Fluoranthene.... ..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Benzo(k)Fluoranthene..... | 520 | J | 410 | J | 11000 | U | 11000 | U |
| Benzo(a)Pyrene..... .. | 660 | J | 480 | J | 11000 | U | 11000 | U |
| Indeno(1,2,3-cd)Pyrene..... ... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Dibenz(a,h)Anthracene..... | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Benzo(g,h,i)Perylene ..... .. | 1800 | U | 1800 | U | 11000 | U | 11000 | U |
| Benzidine.... . ..... | NR | | NR | | NR | | NR | |

| | | | | |
|---|---|---|---|---|
| Aniline..... | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | SWMU 129 F078 | SWMU 129 F077 |
|---|---|---|---|
| RFW Batch ID: | 8811-044-002 MSD | 8811-049-003 | 8811-049-004 |
| Customer ID: | BH88A052 | BH88A056 | BH88A057 |
| Collection Date: | 11/14/88 | 11/15/88 | 11/15/88 |
| Matrix: | Soil | Soil | Soil |
| Units. | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | |
|---|---|---|---|
| 2-Fluorophenol: | 99 % | DL % | DL % |
| Phenol-d5 | 86 % | DL % | DL % |
| 2,4,6-Br3-Phenol: | 87 % | DL % | DL % |
| Nitrobenzene-d5. | 63 % | DL % | DL % |
| 2-Fluorobiphenyl: | 87 % | DL % | DL % |
| p-Terphenyl-d14: | 114% | DL % | DL % |

**Analytes**

| | | | | | | |
|---|---|---|---|---|---|---|
| Phenol | 67 | % | 380000 | U | 75000 | U |
| bis(2-Chloroethyl)Ether | 11000 | U | 380000 | U | 75000 | U |
| 2-Chlorophenol | 81 | % | 380000 | U | 75000 | U |
| 1,3-Dichlorobenzene | 11000 | U | 380000 | U | 75000 | U |
| 1,4-Dichlorobenzene | 84 | % | 380000 | U | 75000 | U |
| Benzyl Alcohol | 11000 | U | 380000 | U | 75000 | U |
| 1,2-Dichlorobenzene | 11000 | U | 380000 | U | 75000 | U |
| 2-Methylphenol | 11000 | U | 380000 | U | 75000 | U |
| bis(2-Chloroisopropyl)Ether | 11000 | U | 380000 | U | 75000 | U |
| 4-Methylphenol | 11000 | U | 380000 | U | 75000 | U |
| N-Nitroso-di-n-propylamine | 72 | % | 380000 | U | 75000 | U |
| N-Nitroso-di-methylamine | | NR | | NR | | NR |
| Hexachloroethane | 11000 | U | 380000 | U | 75000 | U |
| Nitrobenzene | 11000 | U | 380000 | U | 75000 | U |
| Isophorone | 11000 | U | 380000 | U | 75000 | U |
| 2-Nitrophenol | 11000 | U | 380000 | U | 75000 | U |
| 2,4-Dimethylphenol | 11000 | U | 380000 | U | 75000 | U |
| Benzoic Acid | 53000 | U | 1820000 | U | 360000 | U |
| bis(2-Chloroethoxy)Methane | 11000 | U | 380000 | U | 75000 | U |
| 2,4-Dichlorophenol | 11000 | U | 380000 | U | 75000 | U |
| 1,2,4-Trichlorobenzene | 90 | % | 380000 | U | 75000 | U |
| Naphthalene | 11000 | U | 380000 | U | 75000 | U |
| 4-Chloroaniline | 11000 | U | 380000 | U | 75000 | U |
| Hexachlororbutadiene | 11000 | U | 380000 | U | 75000 | U |
| 4-Chloro-3-methylphenol | 68 | % | 380000 | U | 75000 | U |
| 2-Methylnaphthalene | 11000 | U | 380000 | U | 75000 | U |
| Hexachlorocyclopentadiene | 11000 | U | 380000 | U | 75000 | U |
| 2,4,6-Trichlorophenol | 11000 | U | 380000 | U | 75000 | U |
| 2,4,5-Trichlorophenol | 53000 | U | 1820000 | U | 360000 | U |
| 2-Chloronaphthalene | 11000 | U | 380000 | U | 75000 | U |
| 2-Nitroaniline | 53000 | U | 1820000 | U | 360000 | U |
| Dimethyl Phthalate | 11000 | U | 380000 | U | 75000 | U |
| Acenaphthylene | 11000 | U | 380000 | U | 75000 | U |
| 3-Nitroaniline | 53000 | U | 1820000 | U | 360000 | U |
| Acenaphthene | 117 | % | 380000 | U | 75000 | U |
| 2,4-Dinitrophenol | 53000 | U | 1820000 | U | 360000 | U |
| 4-Nitrophenol | DL | | 1820000 | U | 360000 | U |
| Dibenzofuran | 11000 | U | 380000 | U | 75000 | U |
| 2,4-Dinitrotoluene | 78 | % | 380000 | U | 75000 | U |
| 2,6-Dinitrotoluene | 11000 | U | 380000 | U | 75000 | U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



| Sample Information | | | #129 FOT3 | | #129 FOT4 | |
|---|---|---|---|---|---|---|
| RFW Batch ID: | 8811-044-002 MSD | | 8811-049-003 | | 8811-049-004 | |
| Customer ID: | BH88A052 | | BH88A056 | | BH88A057 | |
| Collection Date: | 11/14/88 | | 11/15/88 | | 11/15/88 | |
| Matrix: | Soil | | Soil | | Soil | |
| Units: | UG/KG | | UG/KG | | UG/KG | |
| **Analytes** | | | | | | |
| Diethylphthalate..... | 11000 | U | 380000 | U | 75000 | U |
| 4-Chlorophenyl-phenylether.. .. | 11000 | U | 380000 | U | 75000 | U |
| Fluorene..... | 11000 | U | 380000 | U | 75000 | U |
| 4-Nitroaniline..... | 53000 | U | 1820000 | U | 360000 | U |
| 4,6-Dinitro-2-methylphenol..... | 53000 | U | 1820000 | U | 360000 | U |
| N-Nitrosodiphenylamine..... | 11000 | U | 380000 | U | 75000 | U |
| 4-Bromophenyl-phenylether..... | 11000 | U | 380000 | U | 75000 | U |
| Hexachlorobenzene..... | 11000 | U | 380000 | U | 75000 | U |
| Pentachlorophenol..... | 60 | % | 1820000 | U | 360000 | U |
| Phenanthrene..... | 11000 | U | 380000 | U | 75000 | U |
| Anthracene..... | 11000 | U | 380000 | U | 75000 | U |
| di-n-Butyl Phthalate..... | 11000 | U | 380000 | U | 75000 | U |
| Fluoranthene..... | 11000 | U | 380000 | U | 75000 | U |
| Pyrene..... | 78 | % | 380000 | U | 75000 | U |
| Butyl Benzyl Phthalate..... | 11000 | U | 380000 | U | 75000 | U |
| 3,3'-Dichlorobenzidine..... | 21000 | U | 750000 | U | 150000 | U |
| Benzo(a)Anthracene..... | 3000 | J | 380000 | U | 75000 | U |
| bis(2-Ethylhexyl)Phthalate .... | 11000 | U | 380000 | U | 75000 | U |
| Chrysene..... | 7100 | J | 380000 | U | 75000 | U |
| di-n-Octyl Phthalate..... | 11000 | U | 380000 | U | 75000 | U |
| Benzo(b)Fluoranthene..... | 11000 | U | 380000 | U | 75000 | U |
| Benzo(k)Fluoranthene..... | 11000 | U | 380000 | U | 75000 | U |
| Benzo(a)Pyrene..... . | 11000 | U | 380000 | U | 75000 | U |
| Indeno(1,2,3-cd)Pyrene.. ..... | 11000 | U | 380000 | U | 75000 | U |
| Dibenz(a,h)Anthracene..... | 11000 | U | 380000 | U | 75000 | U |
| Benzo(g,h,i)Perylene..... . | 11000 | U | 380000 | U | 75000 | U |
| Benzidine..... | | NR | | NR | | NR |
| Aniline..... | | NR | | NR | | NR |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | | | |
|---|---|---|---|---|
| | | TB | SWMU 129 FOTI | |
| Batch ID | 8810-093-005 MSD | 8811-044-001 | 8811-044-002 | 8811-044-002 DUP |
| Customer ID. | BH88A047 | BH88A051 | BH88A052 | BH88A052 |
| Collection Date | ~~10/25/88~~ | 11/14/88 | 11/14/88 | 11/14/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8 | 107% | 97 % | 128% | 109% |
| Bromofluorobenzene. | 93 % | 97 % | 64 % | 66 % |
| 1,2-Dichloroethane-d4. | 103% | 88 % | 80 % | 96 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane..... | 13 U | 10 U | 11 U | 11 U |
| Bromomethane..... | 13 U | 10 U | 11 U | 11 U |
| Vinyl Chloride..... . | 13 U | 10 U | 11 U | 11 U |
| Chloroethane..... | 13 U | 10 U | 11 U | 11 U |
| Methylene Chloride..... | 17 B | 3.0 J | 4 0 J | 14 B |
| Acetone..... | 76 | 10 U | 11 U | 18 |
| Carbon Disulfide ..... | 6 3 U | 5.0 U | 5 4 U | 5 4 U |
| 1,1-Dichloroethene..... . | 102 % | 5.0 U | 5 4 U | 5 4 U |
| 1,1-Dichloroethane..... | 6 3 U | 5.0 U | 5 4 U | 5 4 U |
| 1,2-Dichloroethene (total)... . | NR | NR | NR | NR |
| Chloroform..... ..... . | 6 3 U | 5.0 U | 5.4 U | 5 4 U |
| 1,2-Dichloroethane..... | 6 3 U | 5.0 U | 5.4 U | 5 4 U |
| 2-Butanone..... ..... . | 19 | 10 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 6 3 U | 5.0 U | 5 4 U | 5 4 U |
| Carbon Tetrachloride.. . . . | 6 3 U | 5 0 U | 5.4 U | 5 4 U |
| Vinyl Acetate. ..... . | 13 U | 10 U | 11 U | 11 U |
| Bromodichloromethane..... . | 6 3 U | 5.0 U | 5.4 U | 5 4 U |
| 1,2-Dichloropropane..... . .. . | 6 3 U | 5.0 U | 5.4 U | 5 4 U |
| cis-1,3-Dichloropropene.... ... | 6.3 U | 5 0 U | 5.4 U | 5 4 U |
| Trichloroethene..... | 84 % | 5.0 U | 5 4 U | 5 4 U |
| Dibromochloromethane ..... | 6 3 U | 5.0 U | 5.4 U | 5 4 U |
| 1,1,2-Trichloroethane..... | 6.3 U | 5.0 U | 5.4 U | 5 4 U |
| Benzene ..... | 94 % | 5.0 U | 3.0 J | 5 0 J |
| Trans-1,3-Dichloropropene..... | 6.3 U | 5.0 U | 5.4 U | 5 4 U |
| 2-Chloroethylvinylether..... . | 13 U | 10 U | 11 U | 11 U |
| Bromoform..... | 6 3 U | 5.0 U | 5 4 U | 5 4 U |
| 4-Methyl-2-pentanone..... .. | 13 U | 10 U | 11 U | 11 U |
| 2-Hexanone..... | 13 U | 10 U | 11 U | 11 U |
| Tetrachloroethene..... | 6 3 U | 5 0 U | 5 4 U | 5 4 U |
| 1,1,2,2-Tetrachloroethane.... . | 6 3 U | 5.0 U | 5 4 U | 5 4 U |
| Toluene..... . | 96 % | 5 0 U | 10 | 11 |
| Chlorobenzene..... | 90 % | 5 0 U | 5.4 U | 5 4 U |
| Ethylbenzene..... ... | 6 3 U | 5.0 U | 33 | 40 |
| Styrene..... . | 6 3 U | 5.0 U | 5 4 U | 5 4 U |
| Total Xylenes..... | 2.0 J | 5.0 U | 35 | 42 |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | SWMU 129 FOT2 | SWMU 129 FOT2 | SWMU 129 FOT3 | SWMU 129 FOT4 |
|---|---|---|---|---|
| Batch ID | 8811-049-001 | 8811-049-002 | 8811-049-003 | 8811-049-004 |
| Customer ID. | BH88A054 | BH88A055 | BH88A056 | BH88A057 |
| Collection Date | 11/15/88 | 11/15/88 | 11/15/88 | 11/15/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 98 % | 98 % | 80 % | 98 % |
| Bromofluorobenzene: | 97 % | 99 % | 86 % | 100% |
| 1,2-Dichloroethane-d4: | 94 % | 91 % | 103% | 91 % |

**Analytes**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Chloromethane | 590 | U | 650 | U | 1100 | U | 570 | U |
| Bromomethane | 590 | U | 650 | U | 1100 | U | 570 | U |
| Vinyl Chloride | 590 | U | 650 | U | 1100 | U | 570 | U |
| Chloroethane | 590 | U | 650 | U | 1100 | U | 570 | U |
| Methylene Chloride | 430 | | 65 | J | 1100 | | 60 | J |
| Acetone | 590 | U | 650 | U | 1100 | U | 370 | J |
| Carbon Disulfide | 300 | U | 320 | U | 570 | U | 280 | U |
| 1,1-Dichloroethene | 300 | U | 320 | U | 570 | U | 280 | U |
| 1,1-Dichloroethane | 300 | U | 320 | U | 570 | U | 280 | U |
| 1,2-Dichloroethene (total) | | NR | | NR | | NR | | NR |
| Chloroform | 300 | U | 320 | U | 570 | U | 280 | U |
| 1,2-Dichloroethane | 300 | U | 320 | U | 570 | U | 280 | U |
| 2-Butanone | 590 | U | 650 | U | 1100 | U | 570 | U |
| 1,1,1-Trichloroethane | 300 | U | 340 | | 570 | U | 280 | U |
| Carbon Tetrachloride | 300 | U | 320 | U | 570 | U | 280 | U |
| Vinyl Acetate | 590 | U | 650 | U | 1100 | U | 570 | U |
| Bromodichloromethane | 300 | U | 320 | U | 570 | U | 280 | U |
| 1,2-Dichloropropane | 300 | U | 320 | U | 570 | U | 280 | U |
| cis-1,3-Dichloropropene | 300 | U | 320 | U | 570 | U | 280 | U |
| Trichloroethene | 300 | U | 320 | U | 570 | U | 280 | U |
| Dibromochloromethane | 300 | U | 320 | U | 570 | U | 280 | U |
| 1,1,2-Trichloroethane | 300 | U | 320 | U | 570 | U | 280 | U |
| Benzene | 300 | U | 320 | U | 570 | | 78 | J |
| Trans-1,3-Dichloropropene | 300 | U | 320 | U | 570 | U | 280 | U |
| 2-Chloroethylvinylether | 590 | U | 650 | U | 1100 | U | 570 | U |
| Bromoform | 300 | U | 320 | U | 570 | U | 280 | U |
| 4-Methyl-2-pentanone | 590 | U | 650 | U | 1100 | U | 570 | U |
| 2-Hexanone | 590 | U | 650 | U | 1100 | U | 570 | U |
| Tetrachloroethene | 300 | U | 320 | U | 570 | U | 280 | U |
| 1,1,2,2-Tetrachloroethane | 300 | U | 320 | U | 570 | U | 280 | U |
| Toluene | 71 | J | 180 | J | 1700 | | 170 | J |
| Chlorobenzene | 300 | U | 320 | U | 570 | U | 280 | U |
| Ethylbenzene | 140 | J | 200 | J | 1600 | | 360 | |
| Styrene | 300 | U | 320 | U | 570 | U | 280 | U |
| Total Xylenes | 330 | | 1490 | | 4700 | | 1990 | |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | SWMU 129 FOT4 | FB |
|---|---|---|
| Batch ID: | 8811-049-005 | 8811-049-006 |
| Customer ID. | BH88A058 | BH88A059 |
| Collection Date: | 11/15/88 | 11/15/88 |

**Surrogate Recovery**

| | | |
|---|---|---|
| Toluene-d8 | 97 % | 99 % |
| Bromofluorobenzene | 98 % | 101% |
| 1,2-Dichloroethane-d4 | 91 % | 96 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane | 560 | U | 10 | U |
| Bromomethane | 560 | U | 10 | U |
| Vinyl Chloride | 560 | U | 10 | U |
| Chloroethane | 560 | U | 10 | U |
| Methylene Chloride | 57 | J | 5.0 | U |
| Acetone | 560 | U | 10 | U |
| Carbon Disulfide | 280 | U | 5.0 | U |
| 1,1-Dichloroethene | 280 | U | 5 0 | U |
| 1,1-Dichloroethane | 280 | U | 5.0 | U |
| 1,2-Dichloroethene (total) | | NR | | NR |
| Chloroform | 280 | U | 11 | |
| 1,2-Dichloroethane | 280 | U | 5.0 | U |
| 2-Butanone | 560 | U | 10 | U |
| 1,1,1-Trichloroethane | 280 | U | 5.0 | U |
| Carbon Tetrachloride | 280 | U | 5.0 | U |
| Vinyl Acetate | 560 | U | 10 | U |
| Bromodichloromethane | 280 | U | 5 0 | U |
| 1,2-Dichloropropane | 280 | U | 5.0 | U |
| cis-1,3-Dichloropropene | 280 | U | 5.0 | U |
| Trichloroethene | 280 | U | 5.0 | U |
| Dibromochloromethane | 280 | U | 5.0 | U |
| 1,1,2-Trichloroethane | 280 | U | 5.0 | U |
| Benzene | 180 | J | 5 0 | U |
| Trans-1,3-Dichloropropene | 280 | U | 5.0 | U |
| 2-Chloroethylvinylether | 560 | U | 10 | U |
| Bromoform | 280 | U | 5.0 | U |
| 4-Methyl-2-pentanone | 560 | U | 10 | U |
| 2-Hexanone | 560 | U | 10 | U |
| Tetrachloroethene | 280 | U | 5.0 | U |
| 1,1,2,2-Tetrachloroethane | 280 | U | 5.0 | U |
| Toluene | 320 | | 5.0 | U |
| Chlorobenzene | 280 | U | 5.0 | U |
| Ethylbenzene | 490 | | 5.0 | U |
| Styrene | 280 | U | 5.0 | U |
| Total Xylenes | 3000 | | 5.0 | U |

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

# ORGANICS CASE NARRATIVE

Client: ROCKWELL
RFW #: 8810S051
W.O. #: 2029-38-01-0000

FRACTION: VOA

1. This set of samples consisted of 2 soil and 1 water samples collected on 10/14/88.

2. These samples were analyzed on 10/20/88 and 10/21/88 in accordance with SW 846 protocols.

3. All required holding times for these samples were met.

4. All tuning and calibration criteria were met for all samples.

5. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

6. Of the 21 surrogates analyzed, none were outside of QC limits.

7. Of the 10 matrix spike recoveries, none were outside of QC limits.

8. Of the 5 matrix spike RPD's, none were outside QC limits.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.

Date: 11/16/88

Approved by: R. F. Carney

WESTON

# WESTON ANALYTICS
# VOLATILE ANALYTICAL DATA PACKAGE FOR
# RF

DATE RECEIVED: 10/19/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A020 Trip Blank | 8810-051-001 | 10/14/88 | NA | 10/21/88 |
| BH88A021 CS016, #170 | 8810-051-002 | 10/14/88 | NA | 10/21/88 |
| BH88A022 CS017, #170 | 8810-051-003 | 10/14/88 | NA | 10/20/88 |
| BH88A022 | 8810-051-003 MS | 10/14/88 | NA | 10/20/88 |
| BH88A022 | 8810-051-003 MSD | 10/14/88 | NA | 10/20/88 |
| LAB QC: | | | | |
| BLANK 10/20 | 8810-051-0001BL | NA | NA | 10/20/88 |
| BLANK 10/21 | 8810-051-0002BL | NA | NA | 10/21/88 |

R.F. Carney 11/16/88

DATE

WESTON Analytical Laboratories

WESTON ANALYTICS
VOALTILE DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-051 Client: ROCKY FLATS 

Sample Information

| | | | Trip Blank | #170 CS016 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-051-0001BL | 8810-051-0002BL | 8810-051-001 | 8810-051-002 |
| Customer ID: | BLANK 10/20 | BLANK 10/21 | BH88A020 | BH88A021 |
| Matrix: | Water | Water | Water | Soil |
| Units: | UG/L | UG/L | UG/L | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 100 % | 98 % | 99 % | 117 % |
| Bromofluorobenzene: | 99 % | 100 % | 101 % | 80 % |
| 1,2-Dichloroethane-d4: | 92 % | 99 % | 97 % | 93 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U | 11 U |
| Bromomethane | 10 U | 10 U | 10 U | 11 U |
| Vinyl Chloride | 10 U | 10 U | 10 U | 11 U |
| Chloroethane | 10 U | 10 U | 10 U | 11 U |
| Methylene Chloride | 6.0 | 1.0 J | 2.0 JB | 4 0 JB |
| Acetone | 10 U | 10 U | 10 U | 11 U |
| Carbon Disulfide | 5 0 U | 5 0 U | 5 0 U | 5 3 U |
| 1,1-Dichloroethene | 5.0 U | 5.0 U | 5 0 U | 5 3 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.3 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 5.0 U | 5 3 U |
| Chloroform | 5.0 U | 5.0 U | 5 0 U | 5.3 U |
| 1,2-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5 3 U |
| 2-Butanone | 10 U | 10 U | 10 U | 11 U |
| 1,1,1-Trichloroethane | 5 0 U | 5.0 U | 5.0 U | 5.3 U |
| Carbon Tetrachloride | 5.0 U | 5.0 U | 5.0 U | 5.3 U |
| Vinyl Acetate | 10 U | 10 U | 10 U | 11 U |
| Bromodichloromethane | 5 0 U | 5.0 U | 5 0 U | 5 3 U |
| 1,2-Dichloropropane | 5 0 U | 5.0 U | 5.0 U | 5 3 U |
| Trans-1,3-Dichloropropene | 5 0 U | 5.0 U | 5.0 U | 5.3 U |
| Trichloroethene | 5 0 U | 5.0 U | 5.0 U | 5.3 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 5 0 U | 5 3 U |
| 1,1,2-Trichloroethane | 5.0 U | 5.0 U | 5 0 U | 5.3 U |
| Benzene | 5.0 U | 5.0 U | 5.0 U | 5 3 U |
| cis-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U | 5.3 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U | 11 U |
| Bromoform | 5.0 U | 5.0 U | 5.0 U | 5 3 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U | 11 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 11 U |
| Tetrachloroethene | 5.0 U | 5.0 U | 5.0 U | 5.3 U |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.0 U | 5 0 U | 5 3 U |
| Toluene | 5.0 U | 5.0 U | 5.0 U | 5.3 U |
| Chlorobenzene | 5.0 U | 5.0 U | 5.0 U | 5.3 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5.0 U | 5.3 U |
| Styrene | 5.0 U | 5.0 U | 5 0 U | 5.3 U |
| Total Xylenes | 5.0 U | 5.0 U | 5.0 U | 5 3 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
VOALTILE DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-051 Client: ROCKY FLATS 

Sample Information

#170
CS017

| | | | |
|---|---|---|---|
| RFW Batch ID: | 8810-051-003 | 8810-051-003 MS | 8810-051-003 MSD |
| Customer ID: | BH88A022 | BH88A022 | BH88A022 |
| Matrix: | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 |

Surrogate Recovery

| | | | |
|---|---|---|---|
| Toluene-d8: | 114 % | 117 % | 115 % |
| Bromofluorobenzene: | 85 % | 80 % | 80 % |
| 1,2-Dichloroethane-d4: | 95 % | 97 % | 94 % |

Analytes

| | | | |
|---|---|---|---|
| Chloromethane | 11 U | 11 U | 11 U |
| Bromomethane | 11 U | 11 U | 11 U |
| Vinyl Chloride | 11 U | 11 U | 11 U |
| Chloroethane | 11 U | 11 U | 11 U |
| Methylene Chloride | 3.0 JB | 18 B | 18 B |
| Acetone | 12 | 4.0 J | 4.0 J |
| Carbon Disulfide | 5.3 U | 11 | 12 |
| 1,1-Dichloroethene | 5.3 U | 85 % | 90 % |
| 1,1-Dichloroethane | 5.3 U | 5.3 U | 5.3 U |
| Trans-1,2-Dichloroethene | 5.3 U | 5.3 U | 5.3 U |
| Chloroform | 5.3 U | 5.3 U | 5.3 U |
| 1,2-Dichloroethane | 5.3 U | 5.3 U | 5.3 U |
| 2-Butanone | 11 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.3 U | 5.3 U | 5.3 U |
| Carbon Tetrachloride | 5.3 U | 5.3 U | 5.3 U |
| Vinyl Acetate | 11 U | 11 U | 11 U |
| Bromodichloromethane | 5.3 U | 5.3 U | 5.3 U |
| 1,2-Dichloropropane | 5 3 U | 5.3 U | 5.3 U |
| Trans-1,3-Dichloropropene | 5.3 U | 5.3 U | 5.3 U |
| Trichloroethene | 5 3 U | 81 % | 87 % |
| Dibromochloromethane | 5.3 U | 5.3 U | 5.3 U |
| 1,1,2-Trichloroethane | 5.3 U | 5.3 U | 5.3 U |
| Benzene | 5.3 U | 85 % | 90 % |
| cis-1,3-Dichloropropene | 5.3 U | 5.3 U | 5.3 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 11 U |
| Bromoform | 5.3 U | 5.3 U | 5.3 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 11 U |
| 2-Hexanone | 11 U | 11 U | 11 U |
| Tetrachloroethene | 5.3 U | 5.3 U | 5.3 U |
| 1,1,2,2-Tetrachloroethane | 5.3 U | 5.3 U | 5.3 U |
| Toluene | 1.0 J | 96 % | 99 % |
| Chlorobenzene | 5.3 U | 83 % | 87 % |
| Ethylbenzene | 5.3 U | 5.3 U | 5.3 U |
| Styrene | 5.3 U | 5.3 U | 5.3 U |
| Total Xylenes | 5.3 U | 2.0 J | 5.3 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

ROCKY FLATS

November 16, 1988

88-10-S051

Tentatively Identified Compounds,
VOA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BLANK | 10/20/88 | | NO TICS FOUND | |
| BLANK | 10/21/88 | | NO TICS FOUND | |
| BH88A020 | 10/21/88 | | NO TICS FOUND | |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A021 | 10/21/88 | | NO TICS FOUND | |
| BH88A022 | 10/20/88 | | NO TICS FOUND | |

Reviewed and approved R F. Carney
Robert Carney
Unit Leader

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

## ORGANICS CASE NARRATIVE

semivols

Client: ROCKWELL
RFW #: 8810S051
W.O. #: 2029-38-01-0000

FRACTION: BNA

1. This set of samples consisted of 2 soil samples collected on 10/14/88.

2. The samples were extracted on 10/21/88.

3. These samples were analyzed on 11/15/88 and 11/17/88 in accordance with SW 846 protocols.

4. All required holding times for these samples were met.

5. All tuning and calibration criteria were met for all samples.

6. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

7. Of the 18 surrogates analyzed, 1 was outside of QC limits.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.
B - Indicates the compound was found in the blank.

Date: 12/8/88

Approved by: R F. Carey

WESTON

# WESTON ANALYTICS
# SEMIVOLATILE ANALYTICAL DATA PACKAGE FOR
# ROCKY FLATS

DATE RECEIVED: 10/19/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A021 | 8810-051-002 | 10/14/88 | 10/21/88 | 11/16/88 |
| BH88A022 | 8810-051-003 | 10/14/88 | 10/21/88 | 11/17/88 |
| LAB QC: | | | | |
| BLANK | 8810-051-0001BL | NA | NA | NA |

R. F. Carney FOR

Norman W. Flynn
Organic Section Manager
WESTON Analytical Laboratories

12/8/88
DATE

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-051 Client: ROCKY FLATS 

Sample Information

| | | #170 CS016 | #170 CS017 |
|---|---|---|---|
| RFW Batch ID: | 8810-051-0001BL | 8810-051-002 | 8810-051-003 |
| Customer ID: | BLANK | BH88A021 | BH88A022 |
| Matrix: | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 5 |

Surrogate Recovery

| | | | |
|---|---|---|---|
| 2-Fluorophenol: | 118 % | 77 % | 63 % |
| Phenol-d5: | 142 % | 101 % | 75 % |
| 2,4,6-Br3-Phenol: | 82 % | 72 % | 97 % |
| Nitrobenzene-d5: | 92 % | 59 % | 46 % |
| 2-Fluorobiphenyl: | 78 % | 53 % | 53 % |
| p-Terphenyl-d14: | 89 % | 51 % | 90 % |

Analytes

| | | | |
|---|---|---|---|
| Phenol | 330 U | 350 U | 1800 U |
| bis(2-Chloroethyl)Ether | 330 U | 350 U | 1800 U |
| 2-Chlorophenol | 330 U | 350 U | 1800 U |
| 1,3-Dichlorobenzene | 330 U | 350 U | 1800 U |
| 1,4-Dichlorobenzene | 330 U | 350 U | 1800 U |
| Benzyl Alcohol | 330 U | 350 U | 1800 U |
| 1,2-Dichlorobenzene | 330 U | 350 U | 1800 U |
| 2-Methylphenol | 330 U | 350 U | 1800 U |
| bis(2-Chloroisopropyl)Ether | 330 U | 350 U | 1800 U |
| 4-Methylphenol | 330 U | 350 U | 1800 U |
| N-Nitroso-di-n-propylamine | 330 U | 350 U | 1800 U |
| Hexachloroethane | 330 U | 350 U | 1800 U |
| Nitrobenzene | 330 U | 350 U | 1800 U |
| Isophorone | 330 U | 350 U | 1800 U |
| 2-Nitrophenol | 330 U | 350 U | 1800 U |
| 2,4-Dimethylphenol | 330 U | 350 U | 1800 U |
| Benzoic Acid | 1600 U | 1800 U | 8800 U |
| bis(2-Chloroethoxy)Methane | 330 U | 350 U | 1800 U |
| 2,4-Dichlorophenol | 330 U | 350 U | 1800 U |
| 1,2,4-Trichlorobenzene | 330 U | 350 U | 1800 U |
| Naphthalene | 330 U | 350 U | 1800 U |
| 4-Chloroaniline | 330 U | 350 U | 1800 U |
| Hexachlororbutadiene | 330 U | 350 U | 1800 U |
| 4-Chloro-3-methylphenol | 330 U | 350 U | 1800 U |
| 2-Methylnaphthalene | 330 U | 350 U | 1800 U |
| Hexachlorocyclopentadiene | 330 U | 350 U | 1800 U |
| 2,4,6-Trichlorophenol | 330 U | 350 U | 1800 U |
| 2,4,5-Trichlorophenol | 1600 U | 1800 U | 8800 U |
| 2-Chloronaphthalene | 330 U | 350 U | 1800 U |
| 2-Nitroaniline | 1600 U | 1800 U | 8800 U |
| Dimethyl Phthalate | 330 U | 350 U | 1800 U |
| Acenaphthylene | 330 U | 350 U | 1800 U |

Modifiers)U=Analyzed, not detected. J=Present below detection limit B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-051 Client: ROCKY FLATS 

Sample Information

| | | #170 CS016 | #170 CS017 |
|---|---|---|---|
| RFW Batch ID | 8810-051-0001BL | 8810-051-002 | 8810-051-003 |
| Customer ID: | BLANK | BH88A021 | BH88A022 |
| Matrix | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 5 |

Analytes

| | | | | | | |
|---|---|---|---|---|---|---|
| 3-Nitroaniline | 1600 | U | 1800 | U | 8800 | U |
| Acenaphthene | 330 | U | 350 | U | 1800 | U |
| 2,4-Dinitrophenol | 1600 | U | 1800 | U | 8800 | U |
| 4-Nitrophenol | 1600 | U | 1800 | U | 8800 | U |
| Dibenzofuran | 330 | U | 350 | U | 1800 | U |
| 2,4-Dinitrotoluene | 330 | U | 350 | U | 1800 | U |
| 2,6-Dinitrotoluene | 330 | U | 350 | U | 1800 | U |
| Diethylphthalate | 330 | U | 350 | U | 1800 | U |
| 4-Chlorophenyl-phenylether | 330 | U | 350 | U | 1800 | U |
| Fluorene | 330 | U | 350 | U | 1800 | U |
| 4-Nitroaniline | 1600 | U | 1800 | U | 8800 | U |
| 4,6-Dinitro-2-methylphenol | 1600 | U | 1800 | U | 8800 | U |
| N-Nitrosodiphenylamine | 330 | U | 350 | U | 490 | J |
| 4-Bromophenyl-phenylether | 330 | U | 350 | U | 1800 | U |
| Hexachlorobenzene | 330 | U | 350 | U | 1800 | U |
| Pentachlorophenol | 1600 | U | 1800 | U | 8800 | U |
| Phenanthrene | 330 | U | 350 | U | 1800 | U |
| Anthracene | 330 | U | 350 | U | 1800 | U |
| di-n-Butyl Phthalate | 110 | J | 590 | B | 810 | JB |
| Fluoranthene | 330 | U | 110 | J | 1800 | U |
| Pyrene | 330 | U | 350 | U | 1800 | U |
| Butyl Benzyl Phthalate | 330 | U | 350 | U | 1800 | U |
| 3,3'-Dichlorobenzidine | 660 | U | 700 | U | 3500 | U |
| Benzo(a)Anthracene | 330 | U | 350 | U | 1800 | U |
| bis(2-Ethylhexyl)Phthalate | 330 | U | 96 | J | 1800 | U |
| Chrysene | 330 | U | 350 | U | 1800 | U |
| di-n-Octyl Phthalate | 330 | U | 350 | U | 1800 | U |
| Benzo(b)Fluoranthene | 330 | U | 350 | U | 1800 | U |
| Benzo(k)Fluoranthene | 330 | U | 350 | U | 1800 | U |
| Benzo(a)Pyrene | 330 | U | 350 | U | 1800 | U |
| Indeno(1,2,3-cd)Pyrene | 330 | U | 350 | U | 1800 | U |
| Dibenz(a,h)Anthracene | 330 | U | 350 | U | 1800 | U |
| Benzo(g,h,i)Perylene | 330 | U | 350 | U | 1800 | U |

Modifiers: U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

ROCKY FLATS

December 8, 1988

88-10-S051

Tentatively Identified Compounds,
BNA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BLANK | 11/16/88 | 526 | UNKNOWN | 200 |
| | | 1826 | UNKNOWN | 700 |
| BH88A021 | 11/16/88 | 1863 | UNKNOWN | 12000 |
| | | 2037 | UNKNOWN | 670 |
| | | 2207 | UNKNOWN | 1000 |
| | | 2837 | UNKNOWN | 4400 |
| | | 2891 | UNKNOWN | 4400 |
| BH88A022 | 11/17/88 | 1862 | UNKNOWN | 6000 |
| | | 2826 | UNKNOWN | 5300 |
| | | 2878 | UNKNOWN | 2500 |

Reviewed and approved R F. Carney
Robert Carney
Unit Leader

inorganics (Metals) 170

WESTON

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

# INORGANICS CASE NARRATIVE

Client: ROCKWELL INTERNATIONAL
RFW #: 8810S051
W.O. #: 2029-38-01-0000

1. All required holding times were met.

2. All method blanks were analyzed below detection limits.

3. All LCS (blank spike) recoveries were within control limits.

4. Matrix spike recoveries for Antimony, Arsenic, Nickel and Silver were outside of the 75% - 125% control windows established by the USEPA-CLP. This may be due to matrix interferences present in the sample matrix. The USEPA-CLP has waived matrix spike recovery limits for Silver due to documented difficulties in obtaining reliable results.

5. The following data qualifiers are used in the enclosed report:
   - U - Indicates that the sample was analyzed for but not detected.
   - * - Indicates that the original sample result was greater than 4 x the spike amount added. The USEPA-CLP has determined that spike sample calculations where this occurs have been proven to be unreliable.

6. Methodology unless otherwise indicated follows the USEPA-CLP SOW-787 for metals analysis; Methods for Chemical Analysis of Water and Wastes for conventional water analyses; and SW-846 for nonmetallic soil parameters.

Date: 12/8/8

Approved: [signature]

WESTON

WESTON ANALYTICS
METALS ANALYTICAL DATA PACKAGE FOR
ROCKWELL INTERNATIONAL - RF

DATE RECEIVED: 10/19/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A021 | 8810-051-002 | 10/14/88 | NA | NA |
| BH88A021 | 8810-051-002 DUP | 10/14/88 | NA | NA |
| BH88A021 | 8810-051-002 MS | 10/14/88 | NA | NA |
| BH88A022 | 8810-051-003 | 10/14/88 | NA | NA |
| LCS | 8810-051-LCS | NA | NA | NA |
| LAB QC: | | | | |
| BLANK | 8810-051-0001BL | NA | NA | NA |

Rob E O'Shea 12/9/88
DATE

WESTON Analytical Laboratories

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-051 Client: ROCKY FLATS 

Sample Information

# 170
C5016

| RFW Batch ID | 8810-051-0001BL | 8810-051-002 | 8810-051-002 DUP | 8810-051-002 MS |
|---|---|---|---|---|
| Customer ID: | BLANK | BH88A021 | BH88A021 | BH88A021 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |

Metals

| | | | | | |
|---|---|---|---|---|---|
| Silver (Ag), total | 2 0 U | 2.0 | 2 0 U | 0 % |
| Aluminum (Al), total | 40 0 U | 10200 | 10800 | * |
| Arsenic (As), total | 2.0 U | 4.9 | 4.9 | 65 % |
| Barium (Ba), total | 40.0 U | 83.2 | 76 4 | 98 % |
| Beryllium (Be), total | 1 0 U | 1.0 U | 1.0 U | 101 % |
| Calcium (Ca), total | 200 U | 2370 | 2310 | NS |
| Cadmium (Cd), total | 1.0 U | 2 9 | 2.2 | 86 % |
| Cobalt (Co), total | 10 0 U | 10 3 | 10.1 | 88 % |
| Chromium (Cr), total | 2.0 U | 11 9 | 11 9 | 97 % |
| Cesium (Cs), total | NA | NA | NA | |
| Copper (Cu), total | 5 0 U | 11 6 | 11 1 | 99 % |
| Iron (Fe), total | 20 0 U | 13300 | 13800 | NS |
| Mercury (Hg), total | 0 1 U | 0.1 U | 0 1 U | 12 % |
| Potassium (K ), total | 100 U | 1630 | 1550 | NS |
| Lithium (Li), total | NA | NA | NA | |
| Magnesium (Mg), total | 200 U | 1630 | 1820 | NS |
| Manganese (Mn), total | 3 0 U | 200 | 194 | 92 % |
| Molybdenum(Mo), total | NA | NA | NA | |
| Sodium (Na), total | 200 U | 405 | 1370 | NS |
| Nickel (Ni), total | 8 0 U | 37 3 | 33 1 | 152 % |
| Lead (Pb), total | 1.0 U | 20 4 | 19.3 | * |
| Antimony (Sb), total | 12.0 U | 12.0 | 12 7 | 8 6 % |
| Selenium (Se), total | 1 0 U | 1.0 U | 1 1 U | 100 % |
| Strontium (Sr), total | 40 0 U | 41.2 | 40 4 U | 101 % |
| Thallium (Tl), total | 2 0 U | 2 0 U | 2.1 U | 99 % |
| Vanadium (V ), total | 10 0 U | 31 9 | 30 5 | 89 % |
| Zinc (Zn), total | 4 0 U | 110 | 108 | 91 % |

Modifiers: U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-051 Client: ROCKY FLATS 

Sample Information

#170
CS01

| | | |
|---|---|---|
| RFW Batch ID | 8810-051-003 | 8810-051-LCS |
| Customer ID: | BH88A022 | LCS |
| Matrix: | Soil | Soil |
| Units: | MG/KG | % RECOVERY |

Metals

| | | | | | |
|---|---|---|---|---|---|
| Silver | (Ag), total | 2.1 | U | 106 | % |
| Aluminum | (Al), total | 11900 | | 100 | % |
| Arsenic | (As), total | 2.9 | | 104 | % |
| Barium | (Ba), total | 101 | | 90 | % |
| Beryllium | (Be), total | 1 1 | U | 90 | % |
| Calcium | (Ca), total | 5860 | | 90 | % |
| Cadmium | (Cd), total | 2 9 | | 90 | % |
| Cobalt | (Co), total | 10 5 | U | 90 | % |
| Chromium | (Cr), total | 13 3 | | 90 | % |
| Cesium | (Cs), total | | | | |
| Copper | (Cu), total | 23.4 | | 100 | % |
| Iron | (Fe), total | 20800 | | 100 | % |
| Mercury | (Hg), total | 0.1 | U | 90 | % |
| Potassium | (K ), total | 2920 | | 90 | % |
| Lithium | (Li), total | | | | |
| Magnesium | (Mg), total | 4700 | | 90 | % |
| Manganese | (Mn), total | 469 | | 90 | % |
| Molybdenum | (Mo), total | | | | |
| Sodium | (Na), total | 1320 | | 80 | % |
| Nickel | (Ni), total | 43.3 | | 90 | % |
| Lead | (Pb), total | 16.8 | | 100 | % |
| Antimony | (Sb), total | 12.5 | U | 100 | % |
| Selenium | (Se), total | 1.0 | U | 100 | % |
| Strontium | (Sr), total | 42 0 | U | 100 | % |
| Thallium | (Tl), total | 2.1 | U | 101 | % |
| Vanadium | (V ), total | 40 4 | | 92 | % |
| Zinc | (Zn), total | 72 5 | | 88 | % |

Modifiers: U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

# ORGANICS CASE NARRATIVE

Client: ROCKWELL
RFW #: 8810S036
W.O. #: 2029-38-01-0000

FRACTION: VOA

1. This set of samples consisted of 16 soil and 3 water samples collected on 10/12/88 and 10/13/88.

2. These samples were analyzed on 10/21/88, 10/22/88, 10/24/88, 10/25/88 and 10/26/88 in accordance with SW 846 protocols.

3. All required holding times for these samples were met.

4. All tuning and calibration criteria were met for all samples.

5. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

6. Of the 78 surrogates analyzed, 11 were outside of QC limits. Samples not meeting QC limits were BH88A012; BH88A013 and BH88A014.

7. Of the 10 matrix spike recoveries, none were outside of QC limits.

8. Of the 5 matrix spike RPD's, none were outside QC limits.

9. Matrix effect verified for BH88A012,BH88A014 by re-analysis. Matrix effect verified for BH88A013 (SS2 out in matrix/MS/MSD). Surrogate concentrations were outside QC limits due to non-homogenious nature of matrix. Unknown TIC co-eleuted with Bromofluorobenzene surrogate in sample BH88A016.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.

Date: 11/16/88

Approved by: R. F. Carney

WESTON

# WESTON ANALYTICS
# VOLATILE ANALYTICAL DATA PACKAGE FOR
# ROCKWELL INTERNATIONAL - RF

**DATE RECEIVED: 10/15/88**

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A001 Trip Blank | 8810-036-001 | 10/12/88 | NA | 10/22/88 |
| BH88A002 CS005, #174 | 8810-036-002 | 10/12/88 | NA | 10/21/88 |
| BH88A003 CS002, #174 | 8810-036-003 | 10/12/88 | NA | 10/21/88 |
| BH88A004 CS004, #174 | 8810-036-004 | 10/12/88 | NA | 10/26/88 |
| BH88A005 CS008, #174 | 8810-036-005 | 10/12/88 | NA | 10/25/88 |
| BH88A006 CS009, #174 | 8810-036-006 | 10/12/88 | NA | 10/21/88 |
| BH88A007 CS006, #174 | 8810-036-007 | 10/12/88 | NA | 10/21/88 |
| BH88A008 CS007, #174 | 8810-036-008 | 10/12/88 | NA | 10/21/88 |
| BH88A009 CS012, #174 | 8810-036-009 | 10/12/88 | NA | 10/22/88 |
| BH88A010 Trip Blank | 8810-036-010 | 10/13/88 | NA | 10/22/88 |
| BH88A011 CS015, #174 | 8810-036-011 | 10/13/88 | NA | 10/22/88 |
| BH88A012 CS013, #174 | 8810-036-012 | 10/13/88 | NA | 10/22/88 |
| BH88A012 " " | 8810-036-012 DUP | 10/13/88 | NA | 10/25/88 |
| BH88A013 [illegible] | 8810-036-013 | 10/13/88 | NA | 10/24/88 |
| BH88A013 | 8810-036-013 MS | 10/13/88 | NA | 10/24/88 |
| BH88A013 | 8810-036-013 MSD | 10/13/88 | NA | 10/24/88 |
| BH88A014 CS011, #174 | 8810-036-014 | 10/13/88 | NA | 10/22/88 |
| BH88A014 " " | 8810-036-014 DUP | 10/13/88 | NA | 10/25/88 |
| BH88A015 Field Blank | 8810-036-015 | 10/13/88 | NA | 10/22/88 |
| BH88A016 CS014, #174 | 8810-036-016 | 10/13/88 | NA | 10/24/88 |
| BH88A017 CS010, #174 | 8810-036-017 | 10/13/88 | NA | 10/24/88 |
| BH99A018 CS003, #174 | 8810-036-018 | 10/13/88 | NA | 10/24/88 |
| BH88A019 CS001, #174 | 8810-036-019 | 10/13/88 | NA | 10/24/88 |

**LAB QC:**

| | | | | |
|---|---|---|---|---|
| BLANK 10/21 | 8810-036-0001BL | NA | NA | 10/21/88 |
| BLANK 10/22 | 8810-036-0002BL | NA | NA | 10/22/88 |
| BLANK 10/24 | 8810-036-0003BL | NA | NA | 10/24/88 |
| BLANK 10/25 | 8810-036-0004BL | NA | NA | 10/25/88 |
| BLANK 10/26 | 8810-036-0005BL | NA | NA | 10/26/88 |

R. F. Carney

11/16/88
DATE

WESTON Analytical Laboratories

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-0001BL | 8810-036-0002BL | 8810-036-0003BL | 8810-036-0004BL |
| Customer ID: | BLANK 10/21 | BLANK 10/22 | BLANK 10/24 | BLANK 10/25 |
| Matrix: | Water | Water | Water | Water |
| Units: | UG/L | UG/L | UG/L | UG/L |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 98 % | 101 % | 99 % | 100 % |
| Bromofluorobenzene: | 100 % | 99 % | 101 % | 100 % |
| 1,2-Dichloroethane-d4: | 99 % | 97 % | 95 % | 98 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U | 10 U |
| Bromomethane | 10 U | 10 U | 10 U | 10 U |
| Vinyl Chloride | 10 U | 10 U | 10 U | 10 U |
| Chloroethane | 10 U | 10 U | 10 U | 10 U |
| Methylene Chloride | 1.0 J | 2.0 J | 3.0 J | 1.0 J |
| Acetone | 10 U | 10 U | 10 U | 10 U |
| Carbon Disulfide | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1-Dichloroethene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Chloroform | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,2-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2-Butanone | 10 U | 10 U | 10 U | 10 U |
| 1,1,1-Trichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Carbon Tetrachloride | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Vinyl Acetate | 10 U | 10 U | 10 U | 10 U |
| Bromodichloromethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,2-Dichloropropane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Trans-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Trichloroethene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1,2-Trichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Benzene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| cis-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U | 10 U |
| Bromoform | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U | 10 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 10 U |
| Tetrachloroethene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Toluene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Chlorobenzene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Styrene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Total Xylenes | 5.0 U | 5.0 U | 5.0 U | 5.0 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

Sample Information

| | | Trip Blank | #174 CS005 | #174 CS002 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-0005BL | 8810-036-001 | 8810-036-002 | 8810-036-003 |
| Customer ID: | BLANK 10/26 | BH88A001 | BH88A002 | BH88A003 |
| Matrix: | Water | Water | Soil | Soil |
| Units: | UG/L | UG/L | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 100 % | 99 % | 112 % | 121 % |
| Bromofluorobenzene: | 101 % | 98 % | 76 % | 77 % |
| 1,2-Dichloroethane-d4: | 106 % | 93 % | 96 % | 96 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 11 U | 11 U |
| Bromomethane | 10 U | 10 U | 11 U | 11 U |
| Vinyl Chloride | 10 U | 10 U | 11 U | 11 U |
| Chloroethane | 10 U | 10 U | 11 U | 11 U |
| Methylene Chloride | 2.0 J | 7.0 B | 12 B | 7 0 B |
| Acetone | 3.0 J | 10 U | 32 | 11 U |
| Carbon Disulfide | 5.0 U | 5.0 U | 5.6 U | 5 4 U |
| 1,1-Dichloroethene | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 5.6 U | 5 4 U |
| Chloroform | 5.0 U | 5.0 U | 5.6 U | 5 4 U |
| 1,2-Dichloroethane | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| 2-Butanone | 10 U | 10 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.0 U | 5.0 U | 160 | 5.4 U |
| Carbon Tetrachloride | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Vinyl Acetate | 10 U | 10 U | 11 U | 11 U |
| Bromodichloromethane | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| 1,2-Dichloropropane | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Trans-1,3-Dichloropropene. | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Trichloroethene | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 5.6 U | 5 4 U |
| 1,1,2-Trichloroethane | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Benzene | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| cis-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 11 U | 11 U |
| Bromoform | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 11 U | 11 U |
| 2-Hexanone | 10 U | 10 U | 11 U | 11 U |
| Tetrachloroethene | 5.0 U | 5.0 U | 4.0 J | 2 0 J |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Toluene | 5.0 U | 5.0 U | 4.0 J | 2.0 J |
| Chlorobenzene | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Styrene | 5.0 U | 5.0 U | 5.6 U | 5.4 U |
| Total Xylenes | 5.0 U | 5.0 U | 3.0 J | 5.4 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 CS004 | #174 CS008 | #174 CS009 | #174 CS006 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-004 | 8810-036-005 | 8810-036-006 | 8810-036-007 |
| Customer ID: | BH88A004 | BH88A005 | BH88A006 | BH88A007 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

| Surrogate Recovery | | | | |
|---|---|---|---|---|
| Toluene-d8: | 101 % | 115 % | 115 % | 112 % |
| Bromofluorobenzene: | 102 % | 81 % | 81 % | 80 % |
| 1,2-Dichloroethane-d4: | 101 % | 94 % | 96 % | 93 % |

| Analytes | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 11 U | 11 U | 11 U |
| Bromomethane | 11 U | 11 U | 11 U | 11 U |
| Vinyl Chloride | 11 U | 11 U | 11 U | 11 U |
| Chloroethane | 11 U | 11 U | 11 U | 11 U |
| Methylene Chloride | 20 B | 5.0 JB | 7.0 B | 26 B |
| Acetone | 11 U | 11 U | 7 0 J | 11 U |
| Carbon Disulfide | 5 4 U | 5.5 U | 5.3 U | 5.4 U |
| 1,1-Dichloroethene | 5.4 U | 5.5 U | 5 3 U | 5 4 U |
| 1,1-Dichloroethane | 5.4 U | 5.5 U | 5.3 U | 5 4 U |
| Trans-1,2-Dichloroethene | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Chloroform | 5.4 U | 5.5 U | 5 3 U | 5 4 U |
| 1,2-Dichloroethane | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| 2-Butanone | 11 U | 11 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Carbon Tetrachloride | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Vinyl Acetate | 11 U | 11 U | 11 U | 11 U |
| Bromodichloromethane | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| 1,2-Dichloropropane | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Trans-1,3-Dichloropropene | 5.4 U | 5.5 U | 5.3 U | 5 4 U |
| Trichloroethene | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Dibromochloromethane | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| 1,1,2-Trichloroethane | 5 4 U | 5.5 U | 5.3 U | 5.4 U |
| Benzene | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| cis-1,3-Dichloropropene | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 11 U | 11 U |
| Bromoform | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 11 U | 11 U |
| 2-Hexanone | 11 U | 11 U | 11 U | 11 U |
| Tetrachloroethene | 94 | 5.5 U | 5.3 U | 5.4 U |
| 1,1,2,2-Tetrachloroethane | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Toluene | 5 4 U | 5.5 U | 2.0 J | 1.0 J |
| Chlorobenzene | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Ethylbenzene | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Styrene | 5.4 U | 5.5 U | 5.3 U | 5.4 U |
| Total Xylenes | 5.4 U | 5.5 U | 1.0 J | 5.4 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client. ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 CS007 | #174 CS012 | Trip Blank | #174 CS015 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-008 | 8810-036-009 | 8810-036-010 | 8810-036-011 |
| Customer ID: | BH88A008 | BH88A009 | BH88A010 | BH88A011 |
| Matrix: | Soil | Soil | Water | Soil |
| Units: | UG/KG | UG/KG | UG/L | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

| Surrogate Recovery | | | | |
|---|---|---|---|---|
| Toluene-d8: | 116 % | 109 % | 100 % | 117 % |
| Bromofluorobenzene: | 79 % | 85 % | 98 % | 75 % |
| 1,2-Dichloroethane-d4: | 93 % | 95 % | 97 % | 97 % |

| Analytes | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 11 U | 10 U | 11 U |
| Bromomethane | 11 U | 11 U | 10 U | 11 U |
| Vinyl Chloride | 11 U | 11 U | 10 U | 11 U |
| Chloroethane | 11 U | 11 U | 10 U | 11 U |
| Methylene Chloride | 22 B | 32 B | 8.0 B | 31 B |
| Acetone | 11 U | 4.0 J | 10 U | 11 U |
| Carbon Disulfide | 5 6 U | 5 4 U | 5.0 U | 5.5 U |
| 1,1-Dichloroethene | 5.6 U | 5.4 U | 5.0 U | 5 5 U |
| 1,1-Dichloroethane | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Trans-1,2-Dichloroethene | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Chloroform | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| 1,2-Dichloroethane | 5 6 U | 5 4 U | 5.0 U | 5.5 U |
| 2-Butanone | 11 U | 11 U | 10 U | 11 U |
| 1,1,1-Trichloroethane | 5.6 U | 5.4 U | 5.0 U | 5 5 U |
| Carbon Tetrachloride | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Vinyl Acetate | 11 U | 11 U | 10 U | 11 U |
| Bromodichloromethane | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| 1,2-Dichloropropane | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Trans-1,3-Dichloropropene | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Trichloroethene | 5 6 U | 5 4 U | 5.0 U | 5 5 U |
| Dibromochloromethane | 5.6 U | 5.4 U | 5.0 U | 5 5 U |
| 1,1,2-Trichloroethane | 5 6 U | 5.4 U | 5.0 U | 5.5 U |
| Benzene | 5.6 U | 5.4 U | 5.0 U | 5 5 U |
| cis-1,3-Dichloropropene | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 10 U | 11 U |
| Bromoform | 5.6 U | 5.4 U | 5.0 U | 5 5 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 10 U | 11 U |
| 2-Hexanone | 11 U | 11 U | 10 U | 11 U |
| Tetrachloroethene | 5 6 U | 5.4 U | 5.0 U | 5.5 U |
| 1,1,2,2-Tetrachloroethane | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Toluene | 1.0 J | 5.4 U | 5.0 U | 1.0 J |
| Chlorobenzene | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Ethylbenzene | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Styrene | 5.6 U | 5.4 U | 5.0 U | 5.5 U |
| Total Xylenes | 5.6 U | 5.4 U | 5.0 U | 5.5 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

Sample Information

#194 CS013 → notonlist

| RFW Batch ID: | 8810-036-012 | 8810-036-012 DUP | 8810-036-013 | 8810-036-013 MS |
|---|---|---|---|---|
| Customer ID: | BH88A012 | BH88A012 | BH88A013 | BH88A013 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | % RECOVERY |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8. | 121 % | 143 % | 126 % | 138 % |
| Bromofluorobenzene: | 69 % | 77 % | 81 % | 74 % |
| 1,2-Dichloroethane-d4: | 92 % | 89 % | 102 % | 110 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 11 U | 11 U | 11 U |
| Bromomethane | 11 U | 11 U | 11 U | 11 U |
| Vinyl Chloride | 11 U | 11 U | 11 U | 11 U |
| Chloroethane | 11 U | 11 U | 11 U | 11 U |
| Methylene Chloride | 36 B | 17 B | 15 B | 15 B |
| Acetone | 10 J | 11 U | 11 U | 13 |
| Carbon Disulfide | 5 4 U | 5.4 U | 5.4 U | 5 4 U |
| 1,1-Dichloroethene | 5.4 U | 5.4 U | 5.4 U | 88 % |
| 1,1-Dichloroethane | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| Trans-1,2-Dichloroethene | 5.4 U | 5.4 U | 5.4 U | 5.4 U |
| Chloroform | 5.4 U | 5.4 U | 5.4 U | 5.4 U |
| 1,2-Dichloroethane | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| 2-Butanone | 11 U | 11 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.4 U | 5.4 U | 5.4 U | 5.4 U |
| Carbon Tetrachloride | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| Vinyl Acetate | 11 U | 11 U | 11 U | 11 U |
| Bromodichloromethane | 5.4 U | 5.4 U | 5.4 U | 5.4 U |
| 1,2-Dichloropropane | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| Trans-1,3-Dichloropropene | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| Trichloroethene | 5.4 U | 5.4 U | 5.4 U | 72 % |
| Dibromochloromethane | 5.4 U | 5 4 U | 5.4 U | 5 4 U |
| 1,1,2-Trichloroethane | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| Benzene | 5.4 U | 5.4 U | 5.4 U | 92 % |
| cis-1,3-Dichloropropene | 5.4 U | 5.4 U | 5 4 U | 5 4 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 11 U | 11 U |
| Bromoform | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 11 U | 11 U |
| 2-Hexanone | 11 U | 11 U | 11 U | 11 U |
| Tetrachloroethene | 5.4 U | 5.4 U | 5.4 U | 5.4 U |
| 1,1,2,2-Tetrachloroethane | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| Toluene | 3.0 J | 5.0 J | 1.0 J | 111 % |
| Chlorobenzene | 5.4 U | 5.4 U | 5.4 U | 84 % |
| Ethylbenzene | 5.4 U | 1.0 J | 5.4 U | 5 4 U |
| Styrene | 5 4 U | 5.4 U | 5.4 U | 5 4 U |
| Total Xylenes | 5.4 U | 5.4 U | 5.4 U | 5.4 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

Sample Information

| | not on list | #194 CS011 | | Field Blank |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-013 MSD | 8810-036-014 | 8810-036-014 DUP | 8810-036-015 |
| Customer ID: | BH88A013 | BH88A014 | BH88A014 | BH88A015 |
| Matrix: | Soil | Soil | Soil | Water |
| Units: | UG/KG | UG/KG | UG/KG | UG/L |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 132 % | 137 % | 139 % | 99 % |
| Bromofluorobenzene: | 84 % | 59 % | 69 % | 98 % |
| 1,2-Dichloroethane-d4· | 119 % | 89 % | 100 % | 99 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 11 U | 11 U | 10 U |
| Bromomethane | 11 U | 11 U | 11 U | 10 U |
| Vinyl Chloride | 11 U | 11 U | 11 U | 10 U |
| Chloroethane | 11 U | 11 U | 11 U | 10 U |
| Methylene Chloride | 16 B | 40 B | 24 B | 6.0 B |
| Acetone | 18 | 7.0 J | 11 U | 10 U |
| Carbon Disulfide | 5 4 U | 5.3 U | 5.4 U | 5.0 U |
| 1,1-Dichloroethene | 95 % | 5.3 U | 5.4 U | 5 0 U |
| 1,1-Dichloroethane | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| Trans-1,2-Dichloroethene | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| Chloroform | 5.4 U | 5.3 U | 5.4 U | 3.0 J |
| 1,2-Dichloroethane | 5 4 U | 5 3 U | 5.4 U | 5.0 U |
| 2-Butanone | 11 U | 11 U | 11 U | 10 U |
| 1,1,1-Trichloroethane | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| Carbon Tetrachloride | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| Vinyl Acetate | 11 U | 11 U | 11 U | 10 U |
| Bromodichloromethane | 5.4 U | 5.3 U | 5.4 U | 5 0 U |
| 1,2-Dichloropropane | 5.4 U | 5.3 U | 5.4 U | 5 0 U |
| Trans-1,3-Dichloropropene | 5.4 U | 5.3 U | 5.4 U | 5 0 U |
| Trichloroethene | 73 % | 5.3 U | 5.4 U | 5.0 U |
| Dibromochloromethane | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| 1,1,2-Trichloroethane | 5.4 U | 5.3 U | 5.4 U | 5 0 U |
| Benzene | 95 % | 5.3 U | 5.4 U | 5.0 U |
| cis-1,3-Dichloropropene | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 11 U | 10 U |
| Bromoform | 5 4 U | 5.3 U | 5.4 U | 5.0 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 11 U | 10 U |
| 2-Hexanone | 11 U | 11 U | 11 U | 10 U |
| Tetrachloroethene | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| 1,1,2,2-Tetrachloroethane | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| Toluene | 112 % | 1.0 J | 2.0 J | 5.0 U |
| Chlorobenzene | 90 % | 5.3 U | 5.4 U | 5.0 U |
| Ethylbenzene | 5.4 U | 5.3 U | 5.4 U | 5.0 U |
| Styrene | 5.4 U | 5.3 U | 5.4 U | 5 0 U |
| Total Xylenes | 5.4 U | 5.3 U | 5.4 U | 5.0 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 CS014 | #174 CS010 | #174 CS008 | #174 CS001 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-016 | 8810-036-017 | 8810-036-018 | 8810-036-019 |
| Customer ID: | BH88A016 | BH88A017 | BH99A018 | BH88A019 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 114 % | 116 % | 117 % | 113 % |
| Bromofluorobenzene: | 81 % | 80 % | 75 % | 78 % |
| 1,2-Dichloroethane-d4: | 95 % | 103 % | 108 % | 107 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 10 U | 10 U | 10 U |
| Bromomethane | 11 U | 10 U | 10 U | 10 U |
| Vinyl Chloride | 11 U | 10 U | 10 U | 10 U |
| Chloroethane | 11 U | 10 U | 10 U | 10 U |
| Methylene Chloride | 8.0 B | 7.0 B | 8.0 B | 9.0 B |
| Acetone | 11 U | 10 U | 10 U | 5.0 J |
| Carbon Disulfide | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| 1,1-Dichloroethene | 5.3 U | 5.1 U | 5.2 U | 5 2 U |
| 1,1-Dichloroethane | 5.3 U | 5.1 U | 5 2 U | 5 2 U |
| Trans-1,2-Dichloroethene | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| Chloroform | 5.3 U | 5.1 U | 5 2 U | 5 2 U |
| 1,2-Dichloroethane | 5 3 U | 5.1 U | 5.2 U | 5.2 U |
| 2-Butanone | 11 U | 10 U | 10 U | 10 U |
| 1,1,1-Trichloroethane | 5.3 U | 5 1 U | 5.2 U | 5.2 U |
| Carbon Tetrachloride | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| Vinyl Acetate | 11 U | 10 U | 10 U | 10 U |
| Bromodichloromethane | 5.3 U | 5 1 U | 5.2 U | 5.2 U |
| 1,2-Dichloropropane | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| Trans-1,3-Dichloropropene | 5 3 U | 5.1 U | 5.2 U | 5.2 U |
| Trichloroethene | 5.3 U | 5.1 U | 5.2 U | 5 2 U |
| Dibromochloromethane | 5.3 U | 5.1 U | 5 2 U | 5 2 U |
| 1,1,2-Trichloroethane | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| Benzene | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| cis-1,3-Dichloropropene | 5.3 U | 5.1 U | 5 2 U | 5.2 U |
| 2-Chloroethylvinylether | 11 U | 10 U | 10 U | 10 U |
| Bromoform | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| 4-Methyl-2-pentanone | 11 U | 10 U | 10 U | 10 U |
| 2-Hexanone | 11 U | 10 U | 10 U | 10 U |
| Tetrachloroethene | 5.3 U | 5.1 U | 5.2 U | 5 2 U |
| 1,1,2,2-Tetrachloroethane | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| Toluene | 2.0 J | 1.0 J | 2.0 J | 2.0 J |
| Chlorobenzene | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| Ethylbenzene | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| Styrene | 5.3 U | 5.1 U | 5.2 U | 5.2 U |
| Total Xylenes | 2.0 J | 2.0 J | 2.0 J | 2.0 J |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

ROCKY FLATS

November 16, 1988

88-10-S036

Tentatively Identified Compounds,
VOA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BLANK | 10/21/88 | | NONE FOUND | |
| BLANK | 10/22/88 | | NONE FOUND | |
| BLANK | 10/24/88 | | NONE FOUND | |
| BLANK | 10/25/88 | | NONE FOUND | |
| BLANK | 10/26/88 | | NONE FOUND | |
| BH88A001 | 10/22/88 | | NONE FOUND | |
| BH88A010 | 10/22/88 | | NONE FOUND | |
| BH88A015 | 10/22/88 | | NONE FOUND | |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A002 | 10/21/88 | 689 | UNKNOWN | 14 |
| BH88A003 | 10/21/88 | | NONE FOUND | |
| BH88A004 | 10/26/88 | | NONE FOUND | |
| BH88A005 | 10/25/88 | | NONE FOUND | |
| BH88A006 | 10/21/88 | | NONE FOUND | |
| BH88A007 | 10/21/88 | | NONE FOUND | |
| BH88A008 | 10/21/88 | | NONE FOUND | |
| BH88A009 | 10/22/88 | | NONE FOUND | |
| BH88A011 | 10/22/88 | | NONE FOUND | |
| BH88A012 | 10/22/88 | | NONE FOUND | |
| BH88A012 | 10/25/88 | 743 | UNKNOWN | 13 |
| BH88A013 | 10/24/88 | 743 | UNKNOWN | 93 |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc., ug/kg |
|---|---|---|---|---|
| BH88A014 | 10/22/88 | | NONE FOUND | |
| BH88A014 | 10/25/88 | 831 | UNKNOWN | 7 |
| BH88A016 | 10/24/88 | 792 | UNKNOWN | 135 |
| BH88A017 | 10/24/88 | 750 | UNKNOWN | 11 |
| BH88A018 | 10/24/88 | | NONE FOUND | |
| BH88A819 | 10/24/88 | | NONE FOUND | |

Reviewed and approved R.F. Carney
Robert Carney
Unit Leader

WESTON
MANAGERS DESIGNERS/CONSULTANTS
215 UNION BOULEVARD
SUITE 600
LAKEWOOD CO 80228
PHONE (303) 980-6800

metals 174

17 January 1989

Mr. Kirk McKinley
RCRA/CERCLA Program
Rockwell International
Rocky Flats Plant
P.O. Box 464
Golden, Colorado 80402-0464

Subject: Transmittal of Container Storage Soil Sampling Results
WESTON Work Order Number 2029-29-03

Dear Mr. McKinley:

Enclosed are analytical results for soil sampling at the container storage areas and Building 443 No. 4 fuel oil tank. Also enclosed is a database printout from our sample tracking system. This list indicates all data have been received from the laboratory for this project. Please call Peg Beaty in our Stockton Laboratory (209)957-3405 or Betty Freeman in our Denver Office (303)980-6800 if you have questions or comments.

Sincerely,

ROY F. WESTON, INC.

Michael A. Anderson

Michael A. Anderson, Ph.D., P.E.
Project Director

MAA/llr
enclosures

cc: Tom Greengard (Rockwell International)
Brent Lewis (Rockwell International)
Peg Beaty (WESTON, Stockton)
Suzanne Paschke (WESTON, Denver)
Betty Freeman (WESTON, Denver)

WESTON
MANAGERS DESIGNERS/CONSULTANTS
7720 LORRAINE AVENUE
SUITE 105
STOCKTON CA 95210
PHONE 209-957-3405

JAN 3 1989

December 30, 1988

Kirk McKinley
Rockwell International

Dear Mr. McKinley:

Enclosed are data packages for samples received by our laboratory in October and November.

The following data are included in this package:

| | | |
|---|---|---|
| 8810-036 | - | Corrected Metals package |
| 8810-062 | - | Corrected Metals package |
| 8810-070 | - | Metals package |
| 8810-093 | - | Metals package, Anions |
| 8810-108 | - | Volatiles, Semi-Volatiles, Metals, Anions |
| 8811-044 | - | Metals |
| 8811-049 | - | Metals |

Please call me, if you have any questions.

Sincerely,

ROY F. WESTON, INC.

Peg Beaty

Peg Beaty
Senior Project Manager

PB:te

cc: Tom Greengard
Brent Lewis

Originals

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

# 174
CS005

| RFW Batch ID | 8810-036-0001BL | 8810-036-0002BL | 8810-036-002 | 8810-036-002 DUP |
|---|---|---|---|---|
| Customer ID | BLANK | BLANK | BH88A002 | BH88A002 |
| Matrix. | Soil | Water | Soil | Soil |
| Units: | MG/KG | MG/L | MG/KG | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total..... | 2.0 U | 0.010 U | 2.2 U | 2 3 U |
| Aluminum (Al), total... ... ..... | 40.0 U | 0.200 U | 7080 | 6820 |
| Arsenic (As), total..... | 2.0 U | 0.010 U | 3.3 | |
| Barium (Ba), total..... .. | 40.0 U | 0 200 U | 80.6 | 79.4 |
| Beryllium (Be), total..... | 1.0 U | 0.005 U | 14.3 | 9 7 |
| Calcium (Ca), total..... ..... | 200.0 U | 5.0 U | 1590 | 1610 |
| Cadmium (Cd), total..... .... | 1.0 U | 0.005 U | 2 4 | 1 6 |
| Cobalt (Co), total .. .. .... .. | 10.0 U | 0.050 U | 10 9 U | 11 3 U |
| Chromium (Cr), total..... .. | 2 0 U | 0.010 U | 13.0 | 12 7 |
| Cesium (Cs), total..... | | | | |
| Copper (Cu), total..... | 5 0 U | 0.025 U | 10.3 | 10 7 |
| Iron (Fe), total..... .... | 20 0 U | 0.100 U | 7730 | 8080 |
| Mercury (Hg), total..... . | 0 1 U | 0.0002 U | 0 1 U | 0 1 U |
| Potassium (K ), total.... .. .... . | 1000 0 U | 5.0 U | 1700 | 1630 |
| Lithium (Li), total... ... . . . | | | | |
| Magnesuim (Mg), total.. . ..... | 200.0 U | 5.0 U | 1470 | 1430 |
| Manganese (Mn), total. .... .... . | 3 0 U | 0.015 U | 241 | 244 |
| Molybdenum(Mo), total..... . .... | | | | |
| Sodium (Na), total..... | 200.0 U | 5.0 U | 688 | 226 U |
| Nickel (Ni), total..... . | 8.0 U | 0.040 U | 10 4 | 10 5 |
| Lead (Pb), total..... | 1 0 U | 0.005 U | 16 4 | |
| Antimony (Sb), total ..... ..... | 12.0 U | 0.060 U | 13 4 U | |
| Selenium (Se), total.... ..... | 1.0 U | 0.005 U | 1 1 U | |
| Strontium (Sr), total... ... . . .. | 40.0 U | 0.200 U | 43.8 U | 45 1 U |
| Thallium (Tl), total... . .. . | 2 0 U | 0 010 U | 2.2 U | |
| Vanadium (V ), total . .. .. | 10 0 U | 0.050 U | 2120 | 2140 |
| Zinc (Zn), total .. .. .. .. | 4.0 U | 0 020 U | 43.1 | 43 3 |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

#174
ES002

| RFW Batch ID: | 8810-036-002 MS | 8810-036-003 | 8810-036-003 DUP | 8810-036-003 MS |
|---|---|---|---|---|
| Customer ID. | BH88A002 | BH88A003 | BH88A003 | BH88A003 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units | % RECOVERY | MG/KG | MG/KG | % RECOVERY |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total..... | 55 | % | 2.1 | U | | | |
| Aluminum | (Al), total..... | * | | 8640 | | | | |
| Arsenic | (As), total..... | | | 3.7 | | 4 1 | | 65 % |
| Barium | (Ba), total..... | 101 | % | 82.2 | | | | |
| Beryllium | (Be), total..... | 80 | % | 1.1 | U | | | |
| Calcium | (Ca), total..... ... | * | | 2130 | | | | |
| Cadmium | (Cd), total..... | 104 | % | 2.2 | | | | |
| Cobalt | (Co), total .. . . | 93 | % | 10.5 | U | | | |
| Chromium | (Cr), total..... . .. . | 92 | % | 10.0 | | | | |
| Cesium | (Cs), total .. . | | | | | | | |
| Copper | (Cu), total.. .... . . | 112 | % | 8 1 | | | | |
| Iron | (Fe), total... ... . | * | | 10900 | | | | |
| Mercury | (Hg), total..... . | 86 | % | 0 1 | U | | | |
| Potassium | (K ), total..... . . . | * | | 1510 | | | | |
| Lithium | (Li), total... . . .. | | | | | | | |
| Magnesuim | (Mg), total.... . . | * | | 1480 | | | | |
| Manganese | (Mn), total.... . ..... | * | | 178 | | | | |
| Molybdenum | (Mo), total... ..... . | | | | | | | |
| Sodium | (Na), total..... .. | NS | | 831 | | | | |
| Nickel | (Ni), total .... ..... | 86 | % | 8.4 | U | | | |
| Lead | (Pb), total .... .... . | | | 18.7 | | 20 2 | | * |
| Antimony | (Sb), total.. .... ..... | | | 12.6 | U | 13.3 | U | 0 % |
| Selenium | (Se), total. ... . | | | 1.1 | U | 1 1 | U | 83 % |
| Strontium | (Sr), total .. .... | 100 | % | 42.0 | U | | | |
| Thallium | (Tl), total. . . . | | | 2.1 | U | 2 2 | U | 106 % |
| Vanadium | (V ), total . | * | | 41 2 | | | | |
| Zinc | (Zn), total . | 95 | % | 33.2 | | | | |

Modifiers. U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number. 8810-036 Client ROCKY FLATS 

| Sample Information | #174 CS004 | #174 CS008 | #174 CS009 | #174 CS006 |
|---|---|---|---|---|
| RFW Batch ID. | 8810-036-004 | 8810-036-005 | 8810-036-006 | 8810-036-007 |
| Customer ID: | BH88A004 | BH88A005 | BH88A006 | BH88A007 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total | 2.2 U | 2.1 U | 2.1 U | 2 2 U |
| Aluminum (Al), total | 6170 | 7900 | 10200 | 5180 |
| Arsenic (As), total | 2.9 | 2.1 U | 3 8 | 2 5 |
| Barium (Ba), total | 66.7 | 81.5 | 93 1 | 60 0 |
| Beryllium (Be), total | 1.1 U | 1.1 U | 13 1 | 1 1 U |
| Calcium (Ca), total | 1380 | 1670 | 2160 | 1540 |
| Cadmium (Cd), total | 1.3 | 1.5 | 1.3 | 1 6 |
| Cobalt (Co), total | 10 8 U | 10.6 U | 10 7 U | 10 8 U |
| Chromium (Cr), total | 6.5 | 7 8 | 9 8 | 4 1 |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 9 8 | 10 9 | 8.4 | 8 2 |
| Iron (Fe), total | 7530 | 10600 | 12700 | 8360 |
| Mercury (Hg), total | 0 1 U | 0 1 U | 0 1 U | 0 1 U |
| Potassium (K ), total | 1550 | 1710 | 1850 | 1330 |
| Lithium (Li), total | | | | |
| Magnesuim (Mg), total | 1570 | 1590 | 1610 | 1300 |
| Manganese (Mn), total | 154 | 228 | 232 | 193 |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 592 | 480 | 468 | 478 |
| Nickel (Ni), total | 8.6 U | 8.5 U | 8 5 U | 8 6 U |
| Lead (Pb), total | 19 0 | 20.5 | 16 6 | 28 6 |
| Antimony (Sb), total | 12.4 U | 12.6 U | 12.5 U | 12.4 U |
| Selenium (Se), total | 1 0 U | 1 1 U | 1 0 U | 1 0 U |
| Strontium (Sr), total | 43.0 U | 42 5 U | 42.7 U | 43 0 U |
| Thallium (Tl), total | 2 1 U | 2.1 U | 2 1 U | 2 1 U |
| Vanadium (V ), total | 20 6 | 25.3 | 2590 | 16 8 |
| Zinc (Zn), total | 52.0 | 35.9 | 28 0 | 42 8 |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number. 8810-036 Client ROCKY FLATS 

| Sample Information | #174 CS007 | #174 CS012 | #174 CS015 | #174 CS013 |
|---|---|---|---|---|
| RFW Batch ID | 8810-036-008 | 8810-036-009 | 8810-036-011 | 8810-036-012 |
| Customer ID | BH88A008 | BH88A009 | BH88A011 | BH88A012 |
| Matrix | Soil | Soil | Soil | Soil |
| Units. | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total | 2 2 U | 2.1 U | 2 2 U | 2 1 U |
| Aluminum (Al), total | 8350 | 8220 | 11200 | 7840 |
| Arsenic (As), total | 3.6 | 3.4 | 3 3 | 3 4 |
| Barium (Ba), total | 75.3 | 73.8 | 87 4 | 77 1 |
| Beryllium (Be), total | 1.1 U | 1.0 U | 1 1 U | 1 3 |
| Calcium (Ca), total | 1800 | 1990 | 2160 | 1530 |
| Cadmium (Cd), total | 3 5 | 27.2 | 3 0 | 1 3 |
| Cobalt (Co), total | 11.2 U | 10.5 U | 11 0 U | 10 6 U |
| Chromium (Cr), total | 7 4 | 10 0 | 11 7 | 8 0 |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 9 0 | 13.8 | 12.8 | 11 5 |
| Iron (Fe), total | 10300 | 10700 | 14800 | 9420 |
| Mercury (Hg), total | 0.1 U | 0 1 U | 0 1 U | 0 1 U |
| Potassium (K ), total | 1700 | 1590 | 1980 | 1670 |
| Lithium (Li), total | | | | |
| Magnesuim (Mg), total | 1620 | 1710 | 2000 | 1540 |
| Manganese (Mn), total | 201 | 211 | 216 | 211 |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 559 | 539 | 252 | 299 |
| Nickel (Ni), total | 8 9 U | 8.4 U | 9 8 | 8 5 U |
| Lead (Pb), total | 24.8 | 22.3 | 21.0 | 20 2 |
| Antimony (Sb), total | 12.9 U | 12.9 U | 13 0 U | 13 0 U |
| Selenium (Se), total | 1 1 U | 1.1 U | 1 1 U | 1 1 U |
| Strontium (Sr), total | 44 7 U | 41.8 U | 43.8 U | 42 6 U |
| Thallium (Tl), total | 2 1 U | 2 2 U | 2 2 U | 2 2 U |
| Vanadium (V ), total | 24 4 | 27.4 | 29 1 | 140 |
| Zinc (Zn), total | 37.5 | 38.1 | 38.8 | 38 3 |

Modifiers: U=Analyzed, not detected J=Present below detection limit B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number 8810-036 Client: ROCKY FLATS 

Sample Information

| | | #174 CS011 | FB | #174 CS014 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-013 | 8810-036-014 | 8810-036-015 | 8810-036-016 |
| Customer ID | BH88A013 | BH88A014 | BH88A015 | BH88A016 |
| Matrix· | Soil | Soil | Water | Soil |
| Units. | MG/KG | MG/KG | MG/L | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total..... | 5.3 | 4.2 | 0.010 U | 2.0 U |
| Aluminum (Al), total..... ..... | 8290 | 5460 | 0.200 U | 8280 |
| Arsenic (As), total..... | 2 7 | 3.3 | 0.010 U | 4.0 |
| Barium (Ba), total..... | 73.2 | 61.5 | 0.200 U | 75.4 |
| Beryllium (Be), total..... | 1 1 U | 1.0 U | 0.005 U | 1 0 U |
| Calcium (Ca), total..... | 1610 | 1840 | 5.0 U | 1890 |
| Cadmium (Cd), total..... | 1.5 | 1.0 U | 0.005 U | 2.3 |
| Cobalt (Co), total .. .... . . | 10 8 U | 10.2 U | 0 050 U | 10 0 U |
| Chromium (Cr), total.. ... . . | 7 6 | 6.0 | 0.010 U | 9 0 |
| Cesium (Cs), total.... .... | | | | |
| Copper (Cu), total .. . .. | 12 1 | 12.7 | 0.025 U | 8 2 |
| Iron (Fe), total . ... . | 11600 | 8680 | 0 100 U | 11000 |
| Mercury (Hg), total.. . .. . | 0 1 U | 0.1 U | 0.0002 U | 0 1 U |
| Potassium (K ), total..... | 1630 | 1530 | 5.0 U | 1650 |
| Lithium (Li), total.... ... ... | | | | |
| Magnesuim (Mg), total.. .. .... . . | 1650 | 1640 | 5 0 U | 1580 |
| Manganese (Mn), total.. . ..... | 229 | 187 | 0.015 U | 191 |
| Molybdenum(Mo), total.... ..... | | | | |
| Sodium (Na), total... .. ..... | 417 | 321 | 5.0 U | 400 |
| Nickel (Ni), total..... . | 8.7 U | 8.2 U | 0.040 U | 8.0 U |
| Lead (Pb), total... . .. .. | 16.2 | 26.4 | 0 005 U | 18 5 |
| Antimony (Sb), total..... . .. . | 12 4 U | 12.3 U | 0.060 U | 12 8 U |
| Selenium (Se), total .. .. .. .. | 1.0 U | 1.0 U | 0.005 U | 1 1 U |
| Strontium (Sr), total.. .. . .. | 43 3 U | 40.8 U | 0.200 U | 39 9 U |
| Thallium (Tl), total.... . . | 2 1 U | 2.0 U | 0 010 U | 2 1 U |
| Vanadium (V ), total.. . . . | 41 0 | 14.5 | 0 050 U | 24 1 |
| Zinc (Zn), total..... .... | 37.1 | 71 1 | 0.020 U | 28.5 |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

| | #174 CS01D | #174 CS003 | #174 CS001 | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-036-017 | 8810-036-018 | 8810-036-019 | 8810-036-LCS1 |
| Customer ID. | BH88A017 | BH88A018 | BH88A019 | LCS |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | % RECOVERY |

Sample Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total..... ..... | 2.0 | U | 2.0 | U | 2 1 | U | 80 | % |
| Aluminum | (Al), total..... .... | 9740 | | 6930 | | 7900 | | 90 | % |
| Arsenic | (As), total..... | 4.4 | | 2.3 | | 3.4 | | 94 | % |
| Barium | (Ba), total..... | 84.4 | | 67.1 | | 77.0 | | 90 | % |
| Beryllium | (Be), total..... | 1.0 | U | 1.0 | U | 1.0 | U | 90 | % |
| Calcium | (Ca), total..... ..... . | 2030 | | 1210 | | 1910 | | 90 | % |
| Cadmium | (Cd), total. ..... .. | 3 6 | | 3.3 | | 2 9 | | 88 | % |
| Cobalt | (Co), total.... ... . . | 10.2 | U | 10.2 | U | 10 4 | U | 90 | % |
| Chromium | (Cr), total..... | 5.0 | | 2.5 | | 4 0 | | 90 | % |
| Cesium | (Cs), total..... ..... | | | | | | | | |
| Copper | (Cu), total..... .... | 5.1 | U | 5 3 | | 5.2 | U | 90 | % |
| Iron | (Fe), total..... ... . | 12300 | | 9420 | | 10300 | | 90 | % |
| Mercury | (Hg), total... . ..... | 0 1 | U | 0.1 | U | 0.1 | U | 80 | % |
| Potassium | (K ), total.. ... . ... . | 1740 | | 1610 | | 1510 | | 80 | % |
| Lithium | (Li), total..... .... | | | | | | | | |
| Magnesuim | (Mg), total. ..... .. | 1640 | | 1440 | | 1430 | | 90 | % |
| Manganese | (Mn), total..... .... .. | 180 | | 154 | | 209 | | 90 | % |
| Molybdenum | (Mo), total . .. ... . | | | | | | | | |
| Sodium | (Na), total..... . | 379 | | 917 | | 255 | | 80 | % |
| Nickel | (Ni), total..... . . .... | 9.9 | | 8.2 | U | 8.3 | U | 80 | % |
| Lead | (Pb), total..... | 19 4 | | 25.4 | | 23.9 | | 110 | % |
| Antimony | (Sb), total... ..... ... | 12.1 | U | 12.0 | U | 12.2 | U | 62 | % |
| Selenium | (Se), total . . ... . | 1 0 | U | 1.0 | U | 1.0 | U | 100 | % |
| Strontium | (Sr), total.... . ..... | 41.0 | U | 40.8 | U | 41 6 | U | 100 | % |
| Thallium | (Tl), total. .... . . | 2 0 | U | 2 0 | U | 2 0 | U | 107 | % |
| Vanadium | (V ), total..... | 27.9 | | 19 6 | | 21 4 | | 90 | % |
| Zinc | (Zn), total ..... . .. | 35.7 | | 35.1 | | 36 2 | | 90 | % |

Modifiers: U=Analyzed, not detected. J=Present below detection limit B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

| | |
|---|---|
| RFW Batch ID | 8810-036-LCS2 |
| Customer ID. | LCS |
| Matrix: | Water |
| Units: | % RECOVERY |

Sample Information

| | | |
|---|---|---|
| Silver | (Ag), total..... | 101 % |
| Aluminum | (Al), total..... | 96 % |
| Arsenic | (As), total..... | 94 % |
| Barium | (Ba), total..... | 103 % |
| Beryllium | (Be), total..... | 98 % |
| Calcium | (Ca), total..... | 98 % |
| Cadmium | (Cd), total..... ..... | 104 % |
| Cobalt | (Co), total.. ..... ..... | 102 % |
| Chromium | (Cr), total..... .... | 98 % |
| Cesium | (Cs), total..... .. . | |
| Copper | (Cu), total..... | 100 % |
| Iron | (Fe), total..... ..... | 103 % |
| Mercury | (Hg), total..... ..... | 82 % |
| Potassium | (K ), total..... ..... | 88 % |
| Lithium | (Li), total..... . | |
| Magnesuim | (Mg), total..... .. . | 103 % |
| Manganese | (Mn), total. ..... .... | 103 % |
| Molybdenum | (Mo), total..... | |
| Sodium | (Na), total..... | 84 % |
| Nickel | (Ni), total..... | 102 % |
| Lead | (Pb), total..... | 99 % |
| Antimony | (Sb), total..... | 111 % |
| Selenium | (Se), total..... | 90 % |
| Strontium | (Sr), total .. ... ... | 103 % |
| Thallium | (Tl), total .. . . ... . | 111 % |
| Vanadium | (V ), total... .. . . | 102 % |
| Zinc | (Zn), total.. ..... . | 99 % |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

Metals 174

# INORGANICS CASE NARRATIVE

Client: ROCKWELL
RFW #: 8810S036
W.O. #: 2029-38-01-0000

1. All required holding times were met.

2. All method blanks were analyzed below detection limits.

3. All LCS (blank spike) recoveries were within control limits.

4. Matrix spike recoveries for Silver, Arsenic and Antimony were outside of the 75%-125% control windows established by the USEPA-CLP. This may be due to matrix interferences present in the sample matrix.

5. The following data qualifiers are used in the enclosed report:

   U - Indicates that the sample was analyzed for but not detected.

   * - Indicates that the original sample result was greater than 4 x the spike amount added. The USEPA-CLP has determined that spike sample calculations where this occurs have been proven to be unreliable.

6. Methodology unless otherwise indicated follows the USEPA-CLP SOW-787 for metals analysis; Methods for Chemical Analysis of Water and Wastes for conventional water analyses; and SW-846 for nonmetallic soil parameters.

Date: 12/8/88

Approved: [signature]

WESTON

WESTON ANALYTICS
METALS ANALYTICAL DATA PACKAGE FOR
ROCKWELL INTERNATIONAL - ROCKY FLATS

DATE RECEIVED: 10/15/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A002 | 8810-036-002 | 10/12/88 | NA | NA |
| BH88A002 | 8810-036-002 DUP | 10/12/88 | NA | NA |
| BH88A002 | 8810-036-002 MS | 10/12/88 | NA | NA |
| BH88A003 | 8810-036-003 | 10/12/88 | NA | NA |
| BH88A003 | 8810-036-003 DUP | 10/12/88 | NA | NA |
| BH88A003 | 8810-036-003 MS | 10/12/88 | NA | NA |
| BH88A004 | 8810-036-004 | 10/12/88 | NA | NA |
| BH88A005 | 8810-036-005 | 10/12/88 | NA | NA |
| BH88A006 | 8810-036-006 | 10/12/88 | NA | NA |
| BH88A007 | 8810-036-007 | 10/12/88 | NA | NA |
| BH88A008 | 8810-036-008 | 10/12/88 | NA | NA |
| BH88A009 | 8810-036-009 | 10/12/88 | NA | NA |
| BH88A011 | 8810-036-011 | 10/13/88 | NA | NA |
| BH88A012 | 8810-036-012 | 10/13/88 | NA | NA |
| BH88A013 | 8810-036-013 | 10/13/88 | NA | NA |
| BH88A014 | 8810-036-014 | 10/13/88 | NA | NA |
| BH88A016 | 8810-036-016 | 10/13/88 | NA | NA |
| BH88A017 | 8810-036-017 | 10/13/88 | NA | NA |
| BH88A018 | 8810-036-018 | 10/13/88 | NA | NA |
| BH88A019 | 8810-036-019 | 10/13/88 | NA | NA |
| LCS | 8810-036-LCS | NA | NA | NA |
| LAB QC: | | | | |
| BLANK | 8810-036-0001BL | NA | NA | NA |

Geo E. O'Shea 12/8/88
DATE

WESTON Analytical Laboratories

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client. ROCKY FLATS 

Sample Information

# 174
C5005

| RFW Batch ID: | 8810-036-0001BL | 8810-036-002 | 8810-036-002 DUP | 8810-036-002 MS |
|---|---|---|---|---|
| Customer ID. | BLANK | BH88A002 | BH88A002 | BH88A002 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | % RECOVERY |

Sample Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total..... | 2.0 | U | 2.2 | U | 2.3 | U | 55 | % |
| Aluminum | (Al), total..... | 40.0 | U | 7080 | | 6820 | | * | |
| Arsenic | (As), total..... | 2.0 | U | 3.3 | | | | | |
| Barium | (Ba), total..... | 40.0 | U | 80.6 | | 79.4 | | 101 | % |
| Beryllium | (Be), total ..... | 1.0 | U | 14.3 | | 9 7 | | 80 | % |
| Calcium | (Ca), total..... | 200 0 | U | 1590 | | 1610 | | * | |
| Cadmium | (Cd), total..... | 1.0 | U | 2.4 | | 1.6 | | 104 | % |
| Cobalt | (Co), total..... | 10.0 | U | 10.9 | U | 11.3 | U | 93 | % |
| Chromium | (Cr), total ..... | 2.0 | U | 13.0 | | 12 7 | | 92 | % |
| Cesium | (Cs), total... ..... | | | | | | | | |
| Copper | (Cu), total ..... ... | 5.0 | U | 10.3 | | 10 7 | | 112 | % |
| Iron | (Fe), total..... .. | 20 0 | U | 7730 | | 8080 | | * | |
| Mercury | (Hg), total..... . | 0 1 | U | 0.1 | U | 0 1 | U | 86 | % |
| Potassium | (K ), total..... .... | 1000.0 | U | 1700 | | 1630 | | * | |
| Lithium | (Li), total..... .. . . | | | | | | | | |
| Magnesuim | (Mg), total .... . . .. | 200 0 | U | 1470 | | 1430 | | * | |
| Manganese | (Mn), total... .... . ... | 3 0 | U | 241 | | 244 | | * | |
| Molybdenum | (Mo), total..... ..... | | | | | | | | |
| Sodium | (Na), total..... | 200.0 | U | 688 | | 226 | U | NS | |
| Nickel | (Ni), total..... ..... | 8 0 | U | 10 4 | | 10.5 | | 86 | % |
| Lead | (Pb), total..... | 1.0 | U | 16 4 | | | | | |
| Antimony | (Sb), total..... | 12 0 | U | 13.4 | U | | | | |
| Selenium | (Se), total ..... | 1 0 | U | 1.1 | U | | | | |
| Strontium | (Sr), total.. ..... | 40 0 | U | 43.8 | U | 45 1 | U | 100 | % |
| Thallium | (Tl), total..... . ..... | 2 0 | U | 2.2 | U | | | | |
| Vanadium | (V ), total ..... | 10 0 | U | 2120 | | 2140 | | * | |
| Zinc | (Zn), total..... .. | 4 0 | U | 43.1 | | 43.3 | | 95 | % |

Modifiers U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number. 8810-036 Client· ROCKY FLATS 

Sample Information

| | #174 CS002 | | | #174 CS00[illegible] |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-003 | 8810-036-003 DUP | 8810-036-003 MS | 8810-036-004 |
| Customer ID. | BH88A003 | BH88A003 | BH88A003 | BH88A004 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | % RECOVERY | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total..... | 2.1 U | | | 2 2 U |
| Aluminum (Al), total..... | 8640 | | | 6170 |
| Arsenic (As), total..... | 3.7 | 4.1 | 65 % | 2 9 |
| Barium (Ba), total..... | 82 2 | | | 66 7 |
| Beryllium (Be), total..... ..... | 1.1 U | | | 1.1 U |
| Calcium (Ca), total..... | 2130 | | | 1380 |
| Cadmium (Cd), total..... .. | 2.2 | | | 1 3 |
| Cobalt (Co), total..... | 10.5 U | | | 10 8 U |
| Chromium (Cr), total..... | 10.0 | | | 6 5 |
| Cesium (Cs), total..... | | | | |
| Copper (Cu), total..... | 8 1 | | | 9.8 |
| Iron (Fe), total..... | 10900 | | | 7530 |
| Mercury (Hg), total..... .. | 0 1 U | | | 0 1 U |
| Potassium (K ), total..... ..... | 1510 | | | 1550 |
| Lithium (Li), total ..... | | | | |
| Magnesuim (Mg), total..... | 1480 | | | 1570 |
| Manganese (Mn), total..... .. | 178 | | | 154 |
| Molybdenum(Mo), total... ... . . .. | | | | |
| Sodium (Na), total..... | 831 | | | 592 |
| Nickel (Ni), total..... . | 8.4 U | | | 8 6 U |
| Lead (Pb), total..... | 18.7 | 20.2 | * | 19 0 |
| Antimony (Sb), total..... | 12 6 U | 13.3 U | 0 % | 12.4 U |
| Selenium (Se), total.... ..... | 1.1 U | 1.1 U | 83 % | 1 0 U |
| Strontium (Sr), total..... | 42.0 U | | | 43 0 U |
| Thallium (Tl), total..... .... | 2 1 U | 2.2 U | 106 % | 2 1 U |
| Vanadium (V ), total..... | 41.2 | | | 20.6 |
| Zinc (Zn), total..... | 33.2 | | | 52 0 |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

| | #174 CS008 | #174 CS009 | #174 CS006 | #174 CS007 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-005 | 8810-036-006 | 8810-036-007 | 8810-036-008 |
| Customer ID: | BH88A005 | BH88A006 | BH88A007 | BH88A008 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total | 2.1 U | 2.1 U | 2.2 U | 2 2 U |
| Aluminum (Al), total | 7900 | 10200 | 5180 | 8350 |
| Arsenic (As), total | 2.1 U | 3.8 | 2.5 | 3 6 |
| Barium (Ba), total | 81.5 | 93.1 | 60.0 | 75 3 |
| Beryllium (Be), total | 1.1 U | 13.1 | 1.1 U | 1 1 U |
| Calcium (Ca), total | 1670 | 2160 | 1540 | 1800 |
| Cadmium (Cd), total | 1.5 | 1.3 | 1 6 | 3 5 |
| Cobalt (Co), total | 10.6 U | 10.7 U | 10.8 U | 11 2 U |
| Chromium (Cr), total | 7.8 | 9.8 | 4.1 | 7 4 |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 10.9 | 8.4 | 8.2 | 9 0 |
| Iron (Fe), total | 10600 | 12700 | 8360 | 10300 |
| Mercury (Hg), total | 0 1 U | 0.1 U | 0 1 U | 0 1 U |
| Potassium (K ), total | 1710 | 1850 | 1330 | 1700 |
| Lithium (Li), total | | | | |
| Magnesuim (Mg), total | 1590 | 1610 | 1300 | 1620 |
| Manganese (Mn), total | 228 | 232 | 193 | 201 |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 480 | 468 | 478 | 559 |
| Nickel (Ni), total | 8.5 U | 8 5 U | 8 6 U | 8 9 U |
| Lead (Pb), total | 20.5 | 16.6 | 28 6 | 24 8 |
| Antimony (Sb), total | 12.6 U | 12.5 U | 12.4 U | 12 9 U |
| Selenium (Se), total | 1.1 U | 1.0 U | 1.0 U | 1 1 U |
| Strontium (Sr), total | 42 5 U | 42.7 U | 43.0 U | 44 7 U |
| Thallium (Tl), total | 2 1 U | 2.1 U | 2.1 U | 2 1 U |
| Vanadium (V ), total | 25.3 | 2590 | 16 8 | 24 4 |
| Zinc (Zn), total | 35.9 | 28.0 | 42.8 | 37 5 |

Modifiers. U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client. ROCKY FLATS 

Sample Information

| | #174 CS012 | #174 CS015 | #174 CS013 | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-009 | 8810-036-011 | 8810-036-012 | 8810-036-013 |
| Customer ID. | BH88A009 | BH88A011 | BH88A012 | BH88A013 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total..... | 2 1 | U | 2.2 | U | 2.1 | U | 5 3 | |
| Aluminum | (Al), total..... | 8220 | | 11200 | | 7840 | | 8290 | |
| Arsenic | (As), total..... | 3.4 | | 3.3 | | 3.4 | | 2 7 | |
| Barium | (Ba), total..... | 73.8 | | 87.4 | | 77.1 | | 73 2 | |
| Beryllium | (Be), total..... | 1.0 | U | 1.1 | U | 1.3 | | 1 1 | U |
| Calcium | (Ca), total..... | 1990 | | 2160 | | 1530 | | 1610 | |
| Cadmium | (Cd), total .... ..... | 27.2 | | 3.0 | | 1.3 | | 1 5 | |
| Cobalt | (Co), total..... ..... | 10.5 | U | 11 0 | U | 10.6 | U | 10 8 | U |
| Chromium | (Cr), total.. .. ..... | 10.0 | | 11 7 | | 8.0 | | 7 6 | |
| Cesium | (Cs), total..... ..... | | | | | | | | |
| Copper | (Cu), total..... | 13 8 | | 12.8 | | 11.5 | | 12 1 | |
| Iron | (Fe), total..... | 10700 | | 14800 | | 9420 | | 11600 | |
| Mercury | (Hg), total... ..... | 0.1 | U | 0.1 | U | 0.1 | U | 0 1 | U |
| Potassium | (K ), total..... | 1590 | | 1980 | | 1670 | | 1630 | |
| Lithium | (Li), total..... | | | | | | | | |
| Magnesuim | (Mg), total..... | 1710 | | 2000 | | 1540 | | 1650 | |
| Manganese | (Mn), total..... | 211 | | 216 | | 211 | | 229 | |
| Molybdenum | (Mo), total..... .. | | | | | | | | |
| Sodium | (Na), total..... | 539 | | 252 | | 299 | | 417 | |
| Nickel | (Ni), total.. ..... | 8 4 | U | 9.8 | | 8.5 | U | 8 7 | U |
| Lead | (Pb), total..... ..... | 22.3 | | 21.0 | | 20.2 | | 16 2 | |
| Antimony | (Sb), total ..... | 12.9 | U | 13.0 | U | 13.0 | U | 12 4 | U |
| Selenium | (Se), total.. ..... | 1.1 | U | 1.1 | U | 1 1 | U | 1 0 | U |
| Strontium | (Sr), total..... | 41 8 | U | 43 8 | U | 42.6 | U | 43 3 | U |
| Thallium | (Tl), total .. ..... | 2.2 | U | 2.2 | U | 2 2 | U | 2 1 | U |
| Vanadium | (V ), total.. . ..... | 27 4 | | 29.1 | | 140 | | 41 0 | |
| Zinc | (Zn), total..... ..... | 38 1 | | 38 8 | | 38 3 | | 37 1 | |

Modifiers: U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

| Sample Information | #174 CS011 | #174 CS016 | #174 CS017 | #174 CS003 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-014 | 8810-036-016 | 8810-036-017 | 8810-036-018 |
| Customer ID | BH88A014 | BH88A016 | BH88A017 | BH88A018 |
| Matrix | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total..... | 4 2 | | 2.0 | U | 2.0 | U | 2 0 | U |
| Aluminum | (Al), total..... | 5460 | | 8280 | | 9740 | | 6930 | |
| Arsenic | (As), total..... | 3.3 | | 4.0 | | 4.4 | | 2 3 | |
| Barium | (Ba), total..... | 61.5 | | 75.4 | | 84.4 | | 67 1 | |
| Beryllium | (Be), total..... | 1.0 | U | 1.0 | U | 1.0 | U | 1 0 | U |
| Calcium | (Ca), total..... | 1840 | | 1890 | | 2030 | | 1210 | |
| Cadmium | (Cd), total..... | 1 0 | U | 2.3 | | 3 6 | | 3 3 | |
| Cobalt | (Co), total.. ... ... ... | 10 2 | U | 10.0 | U | 10.2 | U | 10 2 | U |
| Chromium | (Cr), total. ..... .. | 6 0 | | 9.0 | | 5 0 | | 2 5 | |
| Cesium | (Cs), total..... | | | | | | | | |
| Copper | (Cu), total. . ..... | 12 7 | | 8.2 | | 5 1 | U | 5 3 | |
| Iron | (Fe), total..... .. . | 8680 | | 11000 | | 12300 | | 9420 | |
| Mercury | (Hg), total..... . .. | 0.1 | U | 0 1 | U | 0 1 | U | 0 1 | U |
| Potassium | (K ), total..... | 1530 | | 1650 | | 1740 | | 1610 | |
| Lithium | (Li), total..... ..... | | | | | | | | |
| Magnesuim | (Mg), total..... . | 1640 | | 1580 | | 1640 | | 1440 | |
| Manganese | (Mn), total..... ... | 187 | | 191 | | 180 | | 154 | |
| Molybdenum | (Mo), total..... | | | | | | | | |
| Sodium | (Na), total..... | 321 | | 400 | | 379 | | 917 | |
| Nickel | (Ni), total..... | 8.2 | U | 8.0 | U | 9.9 | | 8 2 | U |
| Lead | (Pb), total..... ..... | 26.4 | | 18.5 | | 19.4 | | 25 4 | |
| Antimony | (Sb), total..... . .... | 12 3 | U | 12.8 | U | 12 1 | U | 12 0 | U |
| Selenium | (Se), total..... | 1 0 | U | 1.1 | U | 1 0 | U | 1 0 | U |
| Strontium | (Sr), total . ... .. . | 40 8 | U | 39 9 | U | 41 0 | U | 40 8 | U |
| Thallium | (Tl), total..... | 2 0 | U | 2.1 | U | 2.0 | U | 2 0 | U |
| Vanadium | (V ), total..... . ... | 14 5 | | 24 1 | | 27 9 | | 19 6 | |
| Zinc | (Zn), total..... | 71.1 | | 28 5 | | 35 7 | | 35 1 | |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

#174
C5001

| | | |
|---|---|---|
| RFW Batch ID: | 8810-036-019 | 8810-036-LCS |
| Customer ID: | BH88A019 | LCS |
| Matrix: | Soil | Soil |
| Units: | MG/KG | % RECOVERY |

Sample Information

| | | | | | |
|---|---|---|---|---|---|
| Silver | (Ag), total..... | 2.1 | U | 80 | % |
| Aluminum | (Al), total..... | 7900 | | 90 | % |
| Arsenic | (As), total..... | 3.4 | | 94 | % |
| Barium | (Ba), total..... | 77.0 | | 90 | % |
| Beryllium | (Be), total..... | 1.0 | U | 90 | % |
| Calcium | (Ca), total..... | 1910 | | 90 | % |
| Cadmium | (Cd), total..... | 2 9 | | 88 | % |
| Cobalt | (Co), total..... | 10.4 | U | 90 | % |
| Chromium | (Cr), total..... | 4.0 | | 90 | % |
| Cesium | (Cs), total..... | | | | |
| Copper | (Cu), total.... ..... | 5.2 | U | 90 | % |
| Iron | (Fe), total..... | 10300 | | 90 | % |
| Mercury | (Hg), total... ..... | 0 1 | U | 80 | % |
| Potassium | (K ), total.. ..... | 1510 | | 80 | % |
| Lithium | (Li), total..... | | | | |
| Magnesuim | (Mg), total.. ..... | 1430 | | 90 | % |
| Manganese | (Mn), total..... | 209 | | 90 | % |
| Molybdenum | (Mo), total..... | | | | |
| Sodium | (Na), total..... ..... | 255 | | 80 | % |
| Nickel | (Ni), total..... | 8.3 | U | 80 | % |
| Lead | (Pb), total..... | 23 9 | | 110 | % |
| Antimony | (Sb), total..... | 12 2 | U | 62 | % |
| Selenium | (Se), total..... | 1.0 | U | 100 | % |
| Strontium | (Sr), total..... | 41.6 | U | 100 | % |
| Thallium | (Tl), total..... | 2.0 | U | 107 | % |
| Vanadium | (V ), total..... .. | 21 4 | | 90 | % |
| Zinc | (Zn), total..... | 36.2 | | 90 | % |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number 8810-036 Client. ROCKY FLATS 

Sample Information

#17U
CS001

| | | |
|---|---|---|
| RFW Batch ID· | 8810-036-019 | 8810-036-LCS |
| Customer ID. | BH88A019 | LCS |
| Matrix: | Soil | Soil |
| Units: | MG/KG | % RECOVERY |

Sample Information

| | | | |
|---|---|---|---|
| Silver (Ag), total..... | 2.1 U | 80 % |
| Aluminum (Al), total..... | 7900 | 90 % |
| Arsenic (As), total..... | 3.4 | 94 % |
| Barium (Ba), total..... | 77.0 | 90 % |
| Beryllium (Be), total..... | 1.0 U | 90 % |
| Calcium (Ca), total..... | 1910 | 90 % |
| Cadmium (Cd), total. ..... | 2.9 | 88 % |
| Cobalt (Co), total ... ..... | 10 4 U | 90 % |
| Chromium (Cr), total ..... | 4.0 | 90 % |
| Cesium (Cs), total..... | | |
| Copper (Cu), total .. ..... | 5 2 U | 90 % |
| Iron (Fe), total ..... | 10300 | 90 % |
| Mercury (Hg), total .... . .. . | 0.1 U | 80 % |
| Potassium (K ), total. .. .. . .. . | 1510 | 80 % |
| Lithium (Li), total.. . ... .. .. | | |
| Magnesuim (Mg), total ..... .... . | 1430 | 90 % |
| Manganese (Mn), total ... ... . . | 209 | 90 % |
| Molybdenum(Mo), total . . .. . | | |
| Sodium (Na), total ... . .. .. | 255 | 80 % |
| Nickel (Ni), total .. ..... | 8.3 U | 80 % |
| Lead (Pb), total ..... ... .. | 23.9 | 110 % |
| Antimony (Sb), total..... . ... . | 12.2 U | 62 % |
| Selenium (Se), total .... .. . | 1.0 U | 100 % |
| Strontium (Sr), total. ... ..... | 41.6 U | 100 % |
| Thallium (Tl), total..... .. . | 2 0 U | 107 % |
| Vanadium (V ), total.... .. ..... | 21 4 | 90 % |
| Zinc (Zn), total.. .. . ..... | 36 2 | 90 % |

Modifiers U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

| Sample Information | #174 C5011 | #174 C5016 | #174 C5017 | #174 C5003 |
|---|---|---|---|---|
| RFW Batch ID. | 8810-036-014 | 8810-036-016 | 8810-036-017 | 8810-036-018 |
| Customer ID | BH88A014 | BH88A016 | BH88A017 | BH88A018 |
| Matrix. | Soil | Soil | Soil | Soil |
| Units. | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total..... | 4 2 | 2.0 U | 2.0 U | 2 0 U |
| Aluminum (Al), total..... | 5460 | 8280 | 9740 | 6930 |
| Arsenic (As), total..... | 3.3 | 4.0 | 4.4 | 2 3 |
| Barium (Ba), total..... .. | 61.5 | 75.4 | 84 4 | 67.1 |
| Beryllium (Be), total..... | 1.0 U | 1.0 U | 1.0 U | 1.0 U |
| Calcium (Ca), total..... | 1840 | 1890 | 2030 | 1210 |
| Cadmium (Cd), total ..... ..... | 1.0 U | 2 3 | 3.6 | 3.3 |
| Cobalt (Co), total ... .. .... | 10 2 U | 10.0 U | 10 2 U | 10 2 U |
| Chromium (Cr), total..... | 6.0 | 9.0 | 5 0 | 2 5 |
| Cesium (Cs), total... . .. ..... | | | | |
| Copper (Cu), total.. ..... . | 12 7 | 8.2 | 5 1 U | 5 3 |
| Iron (Fe), total... .. . | 8680 | 11000 | 12300 | 9420 |
| Mercury (Hg), total.. .. . .. | 0 1 U | 0 1 U | 0 1 U | 0 1 U |
| Potassium (K ), total .. ... .... | 1530 | 1650 | 1740 | 1610 |
| Lithium (Li), total.. .. .... | | | | |
| Magnesuim (Mg), total ..... | 1640 | 1580 | 1640 | 1440 |
| Manganese (Mn), total. . . .... ... | 187 | 191 | 180 | 154 |
| Molybdenum(Mo), total. ..... .. . | | | | |
| Sodium (Na), total. ..... ... | 321 | 400 | 379 | 917 |
| Nickel (Ni), total..... ... | 8.2 U | 8 0 U | 9.9 | 8 2 U |
| Lead (Pb), total.... . ..... | 26.4 | 18.5 | 19 4 | 25 4 |
| Antimony (Sb), total..... .. .. . | 12 3 U | 12.8 U | 12 1 U | 12.0 U |
| Selenium (Se), total..... . . | 1 0 U | 1.1 U | 1 0 U | 1 0 U |
| Strontium (Sr), total. . | 40 8 U | 39 9 U | 41 0 U | 40 8 U |
| Thallium (Tl), total . ... | 2 0 U | 2 1 U | 2 0 U | 2 0 U |
| Vanadium (V ), total... . | 14 5 | 24 1 | 27 9 | 19 6 |
| Zinc (Zn), total. . ... ..... | 71 1 | 28.5 | 35.7 | 35 1 |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number 8810-036 Client: ROCKY FLATS 

Sample Information

| | #174 C5012 | #174 C5015 | #174 C5013 | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-036-009 | 8810-036-011 | 8810-036-012 | 8810-036-013 |
| Customer ID. | BH88A009 | BH88A011 | BH88A012 | BH88A013 |
| Matrix. | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total..... | 2.1 U | 2.2 U | 2.1 U | 5 3 |
| Aluminum (Al), total..... | 8220 | 11200 | 7840 | 8290 |
| Arsenic (As), total..... | 3.4 | 3.3 | 3 4 | 2 7 |
| Barium (Ba), total..... | 73.8 | 87.4 | 77.1 | 73 2 |
| Beryllium (Be), total..... | 1.0 U | 1.1 U | 1.3 | 1 1 U |
| Calcium (Ca), total..... | 1990 | 2160 | 1530 | 1610 |
| Cadmium (Cd), total..... | 27.2 | 3.0 | 1.3 | 1 5 |
| Cobalt (Co), total. ..... . . | 10 5 U | 11.0 U | 10.6 U | 10 8 U |
| Chromium (Cr), total..... .. .. | 10 0 | 11.7 | 8.0 | 7 6 |
| Cesium (Cs), total... .. . .... | | | | |
| Copper (Cu), total... .. .... . | 13 8 | 12 8 | 11.5 | 12 1 |
| Iron (Fe), total... ..... . . | 10700 | 14800 | 9420 | 11600 |
| Mercury (Hg), total ... ..... | 0 1 U | 0.1 U | 0 1 U | 0 1 U |
| Potassium (K ), total ..... . | 1590 | 1980 | 1670 | 1630 |
| Lithium (Li), total..... ..... | | | | |
| Magnesuim (Mg), total... ..... .... | 1710 | 2000 | 1540 | 1650 |
| Manganese (Mn), total . ..... . | 211 | 216 | 211 | 229 |
| Molybdenum(Mo), total.. ..... . | | | | |
| Sodium (Na), total..... .. .. .. | 539 | 252 | 299 | 417 |
| Nickel (Ni), total .. . .... .. | 8 4 U | 9.8 | 8 5 U | 8 7 U |
| Lead (Pb), total ..... .. | 22 3 | 21 0 | 20.2 | 16 2 |
| Antimony (Sb), total . . . . . .. | 12 9 U | 13.0 U | 13.0 U | 12 4 U |
| Selenium (Se), total . .. . ... . | 1 1 U | 1.1 U | 1 1 U | 1 0 U |
| Strontium (Sr), total..... . | 41 8 U | 43 8 U | 42.6 U | 43 3 U |
| Thallium (Tl), total. . . .. | 2 2 U | 2.2 U | 2 2 U | 2 1 U |
| Vanadium (V ), total.. . . .. | 27.4 | 29.1 | 140 | 41 0 |
| Zinc (Zn), total..... . | 38 1 | 38.8 | 38 3 | 37 1 |

Modifiers. U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

| | #174 CS008 | #174 CS00A | #174 CS006 | #174 CS007 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-005 | 8810-036-006 | 8810-036-007 | 8810-036-008 |
| Customer ID. | BH88A005 | BH88A006 | BH88A007 | BH88A008 |
| Matrix. | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total | 2.1 U | 2.1 U | 2.2 U | 2 2 U |
| Aluminum (Al), total | 7900 | 10200 | 5180 | 8350 |
| Arsenic (As), total | 2.1 U | 3.8 | 2.5 | 3 6 |
| Barium (Ba), total | 81.5 | 93.1 | 60.0 | 75 3 |
| Beryllium (Be), total | 1.1 U | 13.1 | 1.1 U | 1 1 U |
| Calcium (Ca), total | 1670 | 2160 | 1540 | 1800 |
| Cadmium (Cd), total | 1.5 | 1.3 | 1.6 | 3 5 |
| Cobalt (Co), total | 10 6 U | 10.7 U | 10.8 U | 11 2 U |
| Chromium (Cr), total | 7.8 | 9.8 | 4.1 | 7 4 |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 10.9 | 8.4 | 8 2 | 9 0 |
| Iron (Fe), total | 10600 | 12700 | 8360 | 10300 |
| Mercury (Hg), total | 0.1 U | 0.1 U | 0 1 U | 0 1 U |
| Potassium (K ), total | 1710 | 1850 | 1330 | 1700 |
| Lithium (Li), total | | | | |
| Magnesuim (Mg), total | 1590 | 1610 | 1300 | 1620 |
| Manganese (Mn), total | 228 | 232 | 193 | 201 |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 480 | 468 | 478 | 559 |
| Nickel (Ni), total | 8 5 U | 8.5 U | 8.6 U | 8 9 U |
| Lead (Pb), total | 20.5 | 16.6 | 28 6 | 24 8 |
| Antimony (Sb), total | 12.6 U | 12.5 U | 12 4 U | 12 9 U |
| Selenium (Se), total | 1 1 U | 1.0 U | 1 0 U | 1 1 U |
| Strontium (Sr), total | 42 5 U | 42.7 U | 43.0 U | 44 7 U |
| Thallium (Tl), total | 2 1 U | 2.1 U | 2 1 U | 2 1 U |
| Vanadium (V ), total | 25 3 | 2590 | 16 8 | 24 4 |
| Zinc (Zn), total | 35 9 | 28.0 | 42 8 | 37 5 |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

| | #174 C5002 | | | #174 C5004 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-003 | 8810-036-003 DUP | 8810-036-003 MS | 8810-036-004 |
| Customer ID | BH88A003 | BH88A003 | BH88A003 | BH88A004 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | % RECOVERY | MG/KG |

Sample Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total | 2.1 | U | | | | | 2.2 | U |
| Aluminum | (Al), total | 8640 | | | | | | 6170 | |
| Arsenic | (As), total | 3.7 | | 4.1 | | 65 | % | 2.9 | |
| Barium | (Ba), total | 82 2 | | | | | | 66 7 | |
| Beryllium | (Be), total | 1.1 | U | | | | | 1 1 | U |
| Calcium | (Ca), total | 2130 | | | | | | 1380 | |
| Cadmium | (Cd), total | 2.2 | | | | | | 1 3 | |
| Cobalt | (Co), total | 10 5 | U | | | | | 10 8 | U |
| Chromium | (Cr), total | 10 0 | | | | | | 6 5 | |
| Cesium | (Cs), total | | | | | | | | |
| Copper | (Cu), total | 8 1 | | | | | | 9 8 | |
| Iron | (Fe), total | 10900 | | | | | | 7530 | |
| Mercury | (Hg), total | 0 1 | U | | | | | 0 1 | U |
| Potassium | (K ), total | 1510 | | | | | | 1550 | |
| Lithium | (Li), total | | | | | | | | |
| Magnesuim | (Mg), total | 1480 | | | | | | 1570 | |
| Manganese | (Mn), total | 178 | | | | | | 154 | |
| Molybdenum | (Mo), total | | | | | | | | |
| Sodium | (Na), total | 831 | | | | | | 592 | |
| Nickel | (Ni), total | 8.4 | U | | | | | 8.6 | U |
| Lead | (Pb), total | 18 7 | | 20.2 | | * | | 19 0 | |
| Antimony | (Sb), total | 12.6 | U | 13.3 | U | 0 | % | 12 4 | U |
| Selenium | (Se), total | 1.1 | U | 1.1 | U | 83 | % | 1 0 | U |
| Strontium | (Sr), total | 42 0 | U | | | | | 43 0 | U |
| Thallium | (Tl), total | 2 1 | U | 2.2 | U | 106 | % | 2 1 | U |
| Vanadium | (V ), total | 41 2 | | | | | | 20 6 | |
| Zinc | (Zn), total | 33 2 | | | | | | 52 0 | |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-036 Client: ROCKY FLATS 

Sample Information

# 17-1
CS005

| RFW Batch ID. | 8810-036-0001BL | 8810-036-002 | 8810-036-002 DUP | 8810-036-002 MS |
|---|---|---|---|---|
| Customer ID | BLANK | BH88A002 | BH88A002 | BH88A002 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | % RECOVERY |

Sample Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total..... | 2.0 | U | 2.2 | U | 2.3 | U | 55 | % |
| Aluminum | (Al), total..... | 40.0 | U | 7080 | | 6820 | | * | |
| Arsenic | (As), total..... | 2.0 | U | 3.3 | | | | | |
| Barium | (Ba), total ..... ..... | 40.0 | U | 80.6 | | 79 4 | | 101 | % |
| Beryllium | (Be), total ..... | 1.0 | U | 14.3 | | 9 7 | | 80 | % |
| Calcium | (Ca), total..... | 200.0 | U | 1590 | | 1610 | | * | |
| Cadmium | (Cd), total..... | 1 0 | U | 2.4 | | 1.6 | | 104 | % |
| Cobalt | (Co), total..... | 10.0 | U | 10.9 | U | 11.3 | U | 93 | % |
| Chromium | (Cr), total..... | 2.0 | U | 13.0 | | 12 7 | | 92 | % |
| Cesium | (Cs), total..... | | | | | | | | |
| Copper | (Cu), total..... .... | 5 0 | U | 10 3 | | 10 7 | | 112 | % |
| Iron | (Fe), total..... | 20 0 | U | 7730 | | 8080 | | * | |
| Mercury | (Hg), total..... . .... | 0 1 | U | 0 1 | U | 0 1 | U | 86 | % |
| Potassium | (K ), total.. .... . ... | 1000.0 | U | 1700 | | 1630 | | * | |
| Lithium | (Li), total..... .... .. | | | | | | | | |
| Magnesuim | (Mg), total..... ..... | 200 0 | U | 1470 | | 1430 | | * | |
| Manganese | (Mn), total ..... ..... | 3 0 | U | 241 | | 244 | | * | |
| Molybdenum | (Mo), total..... | | | | | | | | |
| Sodium | (Na), total..... . | 200 0 | U | 688 | | 226 | U | NS | |
| Nickel | (Ni), total ..... | 8 0 | U | 10 4 | | 10.5 | | 86 | % |
| Lead | (Pb), total..... . | 1.0 | U | 16 4 | | | | | |
| Antimony | (Sb), total..... .. | 12 0 | U | 13.4 | U | | | | |
| Selenium | (Se), total. .... ..... | 1 0 | U | 1.1 | U | | | | |
| Strontium | (Sr), total.. ..... .. | 40 0 | U | 43.8 | U | 45 1 | U | 100 | % |
| Thallium | (Tl), total.. ..... ... | 2.0 | U | 2.2 | U | | | | |
| Vanadium | (V ), total ..... | 10 0 | U | 2120 | | 2140 | | * | |
| Zinc | (Zn), total..... | 4.0 | U | 43.1 | | 43 3 | | 95 | % |

Modifiers U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

Sample Information

| | | | |
|---|---|---|---|
| RFW Batch ID: | 2000-110-100 | 2000-111-100 | 2000-112-100 |
| Customer ID: | BH88A011 | BH88A012 | BH88A013+MS+MSD |
| Laboratory ID: | 9299-28388-9-1 | 9299-28388-9-2 | 9299-28388-9-3 |
| Matrix: | Soil | Soil | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 28 ± 10 | pci/g | 18 ± 9 | pci/g | 26 ± 10 | pci/g |
| Gross Beta..... | 35 ± 6 | pci/g | 26 ± 6 | pci/g | 39 ± 6 | pci/g |
| Uranium 233, 234..... | 0.83 ± 0.13 | pci/g | 0.83 ± 0.12 | pci/g | 0.63 ± 0.09 | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... | 0.81 ± 0.13 | pci/g | 0.81 ± 0.11 | pci/g | 0.49 ± 0.08 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... | .05 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g | 0.02 ± 0.03 | pci/g |
| Americium 241..... | 0.00 ± 0.04 | pci/g | 0.03 ± 0.05 | pci/g | 0.00 ± 0.04 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... | -0.01 ± 0.15 | pci/ml | -0.08 ± 0.15 | pci/ml | -0.05 ± 0.15 | pci/ml |
| % Moisture..... | 5.0 | | 5.4 | | 3.8 | |

Sample Information

| | | | |
|---|---|---|---|
| RFW Batch ID: | 2000-113-100 | 2000-114-100 | 2000-115-100 |
| Customer ID: | BH88A014 | BH88A015 | BH88A016 |
| Laboratory ID: | 9299-28388-9-4 | 9299-28388-9-5 | 9299-28388-9-6 |
| Matrix: | Soil | Water | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 42 ± 12 | pci/g | [illegible] ± [illegible] | pci/l | 25 ± 10 | pci/g |
| Gross Beta..... | 36 ± 6 | pci/g | 5 ± 8 | pci/l | 18 ± 5 | pci/g |
| Uranium 233, 234..... | 0.87 ± 0.11 | pci/g | 0.0 ± 0.0 | pci/l | 0.72 ± 0.20 | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... | 0.84 ± 0.11 | pci/g | -0.1 ± 0.4 | pci/l | 0.72 ± 0.20 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... | 0.03 ± 0.03 | pci/g | ** | | 0.00 ± 0.02 | pci/g |
| Americium 241..... | 0.02 ± 0.05 | pci/g | ** | | -0.01 ± 0.03 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... | 0.00 ± 0.15 | pci/ml | 30 ± 150 | pci/l | -0.05 ± 0.15 | pci/ml |
| % Moisture..... | 3.4 | | never mind! | | 3.1 | |

** Insufficient Sample.

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

| Sample Information | [illegible] | [illegible] | [illegible] |
|---|---|---|---|
| | CS012 | CS013 | [illegible] |
| RFW Batch ID: | 2000-116-100 | 2000-117-100 | 2000-118-100 |
| Customer ID: | BHB8A017 | BHB8A018 | BHB8A019 |
| Laboratory ID: | 9299-28388-9-7 | 9299-28388-9-8 | 9299-28388-9-9 |
| Matrix: | Soil | Soil | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 14 ± 8 | pci/g | 29 ± 10 | pci/g | 27 ± 10 | pci/g |
| Gross Beta..... | 22 ± 5 | pci/g | 22 ± 6 | pci/g | 22 ± 5 | pci/g |
| Uranium 233, 234..... | 0.48 ± 0.08 | pci/g | 0.70 ± 0.10 | pci/g | 0.65 ± 0.10 | pci/g |
| Uranium 235.... ..... | | | | | | |
| Uranium 238..... ..... | 0.50 ± 0.08 | pci/g | 0.69 ± 0.10 | pci/g | 0.72 ± 0.11 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... .... | 0.00 ± 0.03 | pci/g | 0.02 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g |
| Americium 241 ..... | -0.00 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g | 0.04 ± 0.05 | pci/g |
| Cesium 137. ..... . | | | | | | |
| Tritium..... . .... . | 0.08 ± 0.15 | pci/ml | 0.07 ± 0.15 | pci/ml | 0.00 ± 0.15 | pci/ml |
| % Moisture..... ..... | 2.0 | | 1.3 | | 2.4 | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

| Sample Information | [illegible] CS005 | | [illegible] CS002 | | [illegible] CS004 | |
|---|---|---|---|---|---|---|
| RFW Batch ID: | 2000-100-100 | | 2000-101-100 | | 2000-102-100 | |
| Customer ID: | BH88A002 | | BH88A003 | | BH88A004 | |
| Laboratory ID: | 9299-28380-8-1 | | 9299-28380-8-2 | | 9299-28380-8-3 | |
| Matrix: | Soil | | Soil | | Soil | |
| **Radio Chemistry** | | | | | | |
| Gross Alpha..... | 11 ± 8 | pci/g | 18 ± 9 | pci/g | 15 ± 7 | pci/g |
| Gross Beta... ..... | 22 ± 6 | pci/g | 18 ± 6 | pci/g | 27 ± 6 | pci/g |
| Uranium 233, 234..... | 0.65 ± 0.11 | pci/g | 0.50 ± 0.10 | pci/g | 0.67 ± 0.13 | pci/g |
| Uranium 235..... ..... | | | | | | |
| Uranium 238..... | 0.55 ± 0.10 | pci/g | 0.64 ± 0.11 | pci/g | 0.65 ± 0.13 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240.... .... | 0.01 ± 0.03 | pci/g | 0.01 ± 0.02 | pci/g | 0.04 ± 0.03 | pci/g |
| Americium 241..... ..... | 0.00 ± 0.03 | pci/g | 0.00 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... | 0.22 ± 0.16 | pci/ml | 0.10 ± 0.16 | pci/ml | -0.05 ± 0.15 | pci/ml |
| % Moisture .. .. ..... | 7.4 | | 3.8 | | 4.7 | |

| Sample Information | [illegible] CS005 | | [illegible] CS009 | | [illegible] CS006 | |
|---|---|---|---|---|---|---|
| RFW Batch ID: | 2000-103-100 | | 2000-104-100 | | 2000-105-100 | |
| Customer ID: | BH88A005 | | BH88A006 | | BH88A007 | |
| Laboratory ID: | 9299-28380-8-4 | | 9299-28380-8-5 | | 9299-28380-8-6 | |
| Matrix: | Soil | | Soil | | Soil | |
| **Radio Chemistry** | | | | | | |
| Gross Alpha..... | 16 ± 9 | pci/g | 12 ± 8 | pci/g | 20 ± 9 | pci/g |
| Gross Beta..... | 15 ± 5 | pci/g | 24 ± 6 | pci/g | 3[illegible] ± 6 | pci/g |
| Uranium 233, 234.... ..... | 0.63 ± 0.09 | pci/g | 0.72 ± 0.11 | pci/g | 0.90 ± 0.12 | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... | 0.65 ± 0.09 | pci/g | 0.84 ± 0.12 | pci/g | 0.77 ± 0.11 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... | 0.01 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g | 0.07 ± 0.05 | pci/g |
| Americium 241.. ..... | -0.01 ± 0.03 | pci/g | 0.00 ± 0.03 | pci/g | -0.01 ± 0.02 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... | 0.01 ± 0.15 | pci/ml | 0.06 ± 0.15 | pci/ml | 0.10 ± 0.16 | pci/ml |
| % Moisture..... | 5.1 | | 4.0 | | 3.3 | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

| Sample Information | [illegible] | SWMU [illegible] | [illegible] |
|---|---|---|---|
| | [illegible] 8 | [illegible] 19 | [illegible] |
| RFW Batch ID: | 2000-106-100 | 2000-107-100 | 2000-108-100 |
| Customer ID: | BH88A008 | BH88A009 | BH88A02[illegible] |
| Laboratory ID: | 9299-28380-8-7 | 9299-28380-8-8 | 9299-28412-2-[illegible] |
| Matrix: | Soil | Soil | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha..... ... ..... | 1[illegible] ± 8 | pci/g | 26 ± 10 | pci/g | 21 ± 9 | pci/g |
| Gross Beta..... | 24 ± 6 | pci/g | 29 ± 6 | pci/g | 15 ± 5 | pci/g |
| Uranium 233, 234.... ..... | 0.59 ± 0.09 | pci/g | 0.80 ± 0.11 | pci/g | 0.58 ± 0.09 | pci/g |
| Uranium 235... ..... ..... | | | | | | |
| Uranium 238..... ... | 0.66 ± 0.09 | pci/g | 0.69 ± 0.10 | pci/g | 0.53 ± 0.09 | pci/g |
| Strontium 89, 90 ... . . | | | | | | |
| Plutonium 239, 240 ... ..... | [illegible] ± [illegible] | pci/g | [illegible] ± [illegible] | pci/g | [illegible] ± [illegible] | pci/g |
| Americium 24..... | -0.0[illegible] ± 0.03 | pci/g | -0.01 ± 0.02 | pci/g | 0.03 ± 0.05 | pci/g |
| Cesium 137.. .. ..... | | | | | | |
| Tritium.. . . .. .. | 0.08 ± 0.15 | pci/ml | 0.05 ± 0.15 | pci/ml | [illegible] ± [illegible] | pci/ml |
| % Moisture .. . . . .. ..... | 4.0 | | 5.[illegible] | | 3.1 | |

| Sample Information | [illegible] | |
|---|---|---|
| | [illegible] | |
| RFW Batch ID: | 200[illegible]-[illegible]9-100 | |
| Customer ID: | BH88A022 | |
| Laboratory ID: | 9299-28412-2-[illegible] | |
| Matrix: | Soil | |

Radio Chemistry

| | | |
|---|---|---|
| Gross Alpha..... | 5 ± 8 | pci/g |
| Gross Beta . ..... . ... | 24 ± 5 | pci/g |
| Uranium 233, 234.. ..... . | 0.70 ± 0.1[illegible] | pci/g |
| Uranium 235..... .. . . .. | | |
| Uranium 238..... | 0.70 ± 0.11 | pci/g |
| Strontium 89, 90.. ..... | | |
| Plutonium 239, 240.... ..... | 0.05 ± 0.03 | pci/g |
| Americium 24..... | -0.01 ± 0.03 | pci/g |
| Cesium 137..... | | |
| Tritium. ..... ..... ... | 0.07 ± 0.15 | pci/ml |
| % Moisture..... .. | 4.5 | |

semivols

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

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# ORGANICS CASE NARRATIVE

Client: ROCKWELL
RFW #: 8810S036
W.O. #: 2029-38-01-0000

FRACTION: BNA

1. This set of samples consisted of 16 soil and 1 water samples collected on 10/12/88 and 10/13/88.

2. The samples were extracted on 10/18/88 and 10/19/88.

3. These samples were analyzed on 11/04/88, 11/06/88 and 11/10/88 in accordance with SW 846 protocols.

4. All required holding times for these samples were met.

5. All tuning and calibration criteria were met for all samples.

6. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

7. Of the 120 surrogates analyzed, 15 were outside of QC limits. Samples not meeting QC limits were BH88A005 (8810S036-005), BH88A007 (8810S036-007), BH88A012 (8810S036-012) and BH88A013 (8810S036-013).

8. Of the 22 matrix spike recoveries, 2 were outside of QC limits. Compounds not meeting QC limits were 4-Chloro-3-Methylpenol and Pentachlorophenol.

9. Of the 11 matrix spike RPD's, 1 was outside QC limits. Compound not meeting QC limits was Pentachlorophenol.

10. Above mentioned samples did not meet QC criteria because of dirty, oily nature of matrices.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.

Date: 11/18/88

Approved by: [signature] for R.F. Cumey

WESTON

# WESTON ANALYTICS
# SEMIVOLATILE ANALYTICAL DATA PACKAGE FOR
# ROCKWELL INTERNATIONAL - RF

DATE RECEIVED: 10/15/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A002 | 8810-036-002 | 10/12/88 | 10/18/88 | 11/04/88 |
| BH88A003 | 8810-036-003 | 10/12/88 | 10/18/88 | 11/04/88 |
| BH88A004 | 8810-036-004 | 10/12/88 | 10/18/88 | 11/06/88 |
| BH88A005 | 8810-036-005 | 10/12/88 | 10/18/88 | 11/06/88 |
| BH88A006 | 8810-036-006 | 10/12/88 | 10/18/88 | 11/06/88 |
| BH88A007 | 8810-036-007 | 10/12/88 | 10/18/88 | 11/06/88 |
| BH88A008 | 8810-036-008 | 10/12/88 | 10/18/88 | 11/06/88 |
| BH88A009 | 8810-036-009 | 10/12/88 | 10/18/88 | 11/06/88 |
| BH88A011 | 8810-036-011 | 10/13/88 | 10/18/88 | 11/06/88 |
| BH88A012 | 8810-036-012 | 10/13/88 | 10/18/88 | 11/06/88 |
| BH88A013 | 8810-036-013 | 10/13/88 | 10/18/88 | 11/06/88 |
| BH88A013 | 8810-036-013 MS | 10/13/88 | 10/18/88 | 11/10/88 |
| BH88A013 | 8810-036-013 MSD | 10/13/88 | 10/18/88 | 11/10/88 |
| BH88A014 | 8810-036-014 | 10/13/88 | 10/18/88 | 11/06/88 |
| BH88A015 | 8810-036-015 | 10/13/88 | 10/18/88 | 11/04/88 |
| BH88A016 | 8810-036-016 | 10/13/88 | 10/18/88 | 11/10/88 |
| BH88A017 | 8810-036-017 | 10/13/88 | 10/18/88 | 11/10/88 |
| BH88A018 | 8810-036-018 | 10/13/88 | 10/18/88 | 11/10/88 |
| BH88A019 | 8810-036-019 | 10/13/88 | 10/18/88 | 11/10/88 |
| LAB QC: | | | | |
| BLANK 10/19 | 8810-036-0001BL | NA | 10/19/88 | 11/04/88 |

11/18/88
DATE

WESTON Analytical Laboratories

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

Sample Information

| | | #174 CS005 | #174 CS002 | #174 CS004 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-0001BL | 8810-036-002 | 8810-036-003 | 8810-036-004 |
| Customer ID: | BLANK 10/19 | BH88A002 | BH88A003 | BH88A004 |
| Matrix: | Water | Soil | Soil | Soil |
| Units: | UG/L | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 5 | 5 | 2 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 75 % | 101 % | 102 % | 41 % |
| Phenol-d5: | 83 % | 128 % | 131 % | 52 % |
| 2,4,6-Br3-Phenol: | 68 % | 117 % | 116 % | 92 % |
| Nitrobenzene-d5: | 53 % | 66 % | 64 % | 36 % |
| 2-Fluorobiphenyl: | 55 % | 67 % | 71 % | 38 % |
| p-Terphenyl-d14: | 106 % | 60 % | 99 % | 61 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Phenol | 10 U | 1800 U | 1800 U | 320 J |
| bis(2-Chloroethyl)Ether | 10 U | 1800 U | 1800 U | 720 U |
| 2-Chlorophenol | 10 U | 1800 U | 1800 U | 720 U |
| 1,3-Dichlorobenzene | 10 U | 1800 U | 1800 U | 720 U |
| 1,4-Dichlorobenzene | 10 U | 1800 U | 1800 U | 720 U |
| Benzyl Alcohol | 10 U | 1800 U | 1800 U | 720 U |
| 1,2-Dichlorobenzene | 10 U | 1800 U | 1800 U | 720 U |
| 2-Methylphenol | 10 U | 1800 U | 1800 U | 720 U |
| bis(2-Chloroisopropyl)Ether | 10 U | 1800 U | 1800 U | 720 U |
| 4-Methylphenol | 10 U | 1800 U | 1800 U | 720 U |
| N-Nitroso-di-n-propylamine | 10 U | 1800 U | 1800 U | 720 U |
| Hexachloroethane | 10 U | 1800 U | 1800 U | 720 U |
| Nitrobenzene | 10 U | 1800 U | 1800 U | 720 U |
| Isophorone | 10 U | 1800 U | 1800 U | 720 U |
| 2-Nitrophenol | 10 U | 1800 U | 1800 U | 720 U |
| 2,4-Dimethylphenol | 10 U | 1800 U | 1800 U | 720 U |
| Benzoic Acid | 50 U | 9300 U | 8900 U | 400 J |
| bis(2-Chloroethoxy)Methane | 10 U | 1800 U | 1800 U | 720 U |
| 2,4-Dichlorophenol | 10 U | 1800 U | 1800 U | 720 U |
| 1,2,4-Trichlorobenzene | 10 U | 1800 U | 1800 U | 720 U |
| Naphthalene | 10 U | 1800 U | 1800 U | 720 U |
| 4-Chloroaniline | 10 U | 1800 U | 1800 U | 720 U |
| Hexachlororbutadiene | 10 U | 1800 U | 1800 U | 720 U |
| 4-Chloro-3-methylphenol | 10 U | 1800 U | 1800 U | 740 |
| 2-Methylnaphthalene | 10 U | 1800 U | 1800 U | 720 U |
| Hexachlorocyclopentadiene | 10 U | 1800 U | 1800 U | 720 U |
| 2,4,6-Trichlorophenol | 10 U | 1800 U | 1800 U | 720 U |
| 2,4,5-Trichlorophenol | 50 U | 9300 U | 8900 U | 3600 U |
| 2-Chloronaphthalene | 10 U | 1800 U | 1800 U | 720 U |
| 2-Nitroaniline | 50 U | 9300 U | 8900 U | 3600 U |
| Dimethyl Phthalate | 10 U | 1800 U | 1800 U | 720 U |
| Acenaphthylene | 10 U | 1800 U | 1800 U | 720 U |

Modified)U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | | #174 C5005 | #174 C5002 | #174 C5004 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-0001BL | 8810-036-002 | 8810-036-003 | 8810-036-004 |
| Customer ID: | BLANK 10/19 | BH88A002 | BH88A003 | BH88A004 |
| Matrix: | Water | Soil | Soil | Soil |
| Units: | UG/L | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 5 | 5 | 2 |

| Analytes | | | | |
|---|---|---|---|---|
| 3-Nitroaniline | 50 U | 9300 U | 8900 U | 3600 U |
| Acenaphthene | 10 U | 1800 U | 1800 U | 720 U |
| 2,4-Dinitrophenol | 50 U | 9300 U | 8900 U | 3600 U |
| 4-Nitrophenol | 50 U | 9300 U | 8900 U | 3600 U |
| Dibenzofuran | 10 U | 1800 U | 1800 U | 720 U |
| 2,4-Dinitrotoluene | 10 U | 1800 U | 1800 U | 720 U |
| 2,6-Dinitrotoluene | 10 U | 1800 U | 1800 U | 720 U |
| Diethylphthalate | 10 U | 1800 U | 1800 U | 720 U |
| 4-Chlorophenyl-phenylether | 10 U | 1800 U | 1800 U | 720 U |
| Fluorene | 10 U | 1800 U | 1800 U | 720 U |
| 4-Nitroaniline | 50 U | 9300 U | 8900 U | 3600 U |
| 4,6-Dinitro-2-methylphenol | 50 U | 9300 U | 8900 U | 3600 U |
| N-Nitrosodiphenylamine | 10 U | 1800 U | 1800 U | 720 U |
| 4-Bromophenyl-phenylether | 10 U | 1800 U | 1800 U | 720 U |
| Hexachlorobenzene | 10 U | 1800 U | 1800 U | 720 U |
| Pentachlorophenol | 50 U | 9300 U | 8900 U | 3600 U |
| Phenanthrene | 10 U | 1800 U | 1800 U | 720 U |
| Anthracene | 10 U | 1800 U | 1800 U | 180 J |
| di-n-Butyl Phthalate | 10 U | 1800 U | 1800 U | 720 U |
| Fluoranthene | 10 U | 1800 U | 1800 U | 720 U |
| Pyrene | 10 U | 1800 U | 1800 U | 720 U |
| Butyl Benzyl Phthalate | 10 U | 1800 U | 1800 U | 720 U |
| 3,3'-Dichlorobenzidine | 20 U | 3700 U | 3500 U | 1400 U |
| Benzo(a)Anthracene | 10 U | 1800 U | 1800 U | 720 U |
| bis(2-Ethylhexyl)Phthalate | 10 U | 1700 J | 1400 J | 1700 |
| Chrysene | 10 U | 1800 U | 1800 U | 720 U |
| di-n-Octyl Phthalate | 10 U | 1800 U | 1800 U | 720 U |
| Benzo(b)Fluoranthene | 10 U | 1800 U | 1800 U | 720 U |
| Benzo(k)Fluoranthene | 10 U | 1800 U | 1800 U | 720 U |
| Benzo(a)Pyrene | 10 U | 1800 U | 1800 U | 720 U |
| Indeno(1,2,3-cd)Pyrene | 10 U | 1800 U | 1800 U | 720 U |
| Dibenz(a,h)Anthracene | 10 U | 1800 U | 1800 U | 720 U |
| Benzo(g,h,i)Perylene | 10 U | 1800 U | 1800 U | 720 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 CS008 | #174 CS009 | #174 CS006 | #174 CS007 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-005 | 8810-036-006 | 8810-036-007 | 8810-036-008 |
| Customer ID: | BH88A005 | BH88A006 | BH88A007 | BH88A008 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 5 | 1 |

| Surrogate Recovery | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 97 % | 75 % | 95 % | 55 % |
| Phenol-d5: | 136 % | 112 % | 123 % | 85 % |
| 2,4,6-Br3-Phenol: | 161 % | 156 % | 151 % | 103 % |
| Nitrobenzene-d5. | 75 % | 59 % | 75 % | 42 % |
| 2-Fluorobiphenyl: | 87 % | 79 % | 79 % | 56 % |
| p-Terphenyl-d14: | 89 % | 90 % | 88 % | 65 % |

| Analytes | | | | |
|---|---|---|---|---|
| Phenol | 360 U | 360 U | 1800 U | 370 U |
| bis(2-Chloroethyl)Ether | 360 U | 360 U | 1800 U | 370 U |
| 2-Chlorophenol | 360 U | 360 U | 1800 U | 370 U |
| 1,3-Dichlorobenzene | 360 U | 360 U | 1800 U | 370 U |
| 1,4-Dichlorobenzene | 360 U | 360 U | 1800 U | 370 U |
| Benzyl Alcohol | 360 U | 360 U | 1800 U | 370 U |
| 1,2-Dichlorobenzene | 360 U | 360 U | 1800 U | 370 U |
| 2-Methylphenol | 360 U | 360 U | 1800 U | 370 U |
| bis(2-Chloroisopropyl)Ether | 360 U | 360 U | 1800 U | 370 U |
| 4-Methylphenol | 360 U | 360 U | 1800 U | 370 U |
| N-Nitroso-di-n-propylamine | 360 U | 360 U | 1800 U | 370 U |
| Hexachloroethane | 360 U | 360 U | 1800 U | 370 U |
| Nitrobenzene | 360 U | 360 U | 1800 U | 370 U |
| Isophorone | 360 U | 360 U | 1800 U | 370 U |
| 2-Nitrophenol | 360 U | 360 U | 1800 U | 370 U |
| 2,4-Dimethylphenol | 360 U | 360 U | 1800 U | 370 U |
| Benzoic Acid | 1800 U | 1800 U | 9000 U | 1800 U |
| bis(2-Chloroethoxy)Methane | 360 U | 360 U | 1800 U | 370 U |
| 2,4-Dichlorophenol | 360 U | 360 U | 1800 U | 370 U |
| 1,2,4-Trichlorobenzene | 360 U | 360 U | 1800 U | 370 U |
| Naphthalene | 360 U | 360 U | 1800 U | 370 U |
| 4-Chloroaniline | 360 U | 360 U | 1800 U | 370 U |
| Hexachlororbutadiene | 360 U | 360 U | 1800 U | 370 U |
| 4-Chloro-3-methylphenol | 360 U | 360 U | 1800 U | 370 U |
| 2-Methylnaphthalene | 360 U | 360 U | 1800 U | 370 U |
| Hexachlorocyclopentadiene | 360 U | 360 U | 1800 U | 370 U |
| 2,4,6-Trichlorophenol | 360 U | 360 U | 1800 U | 370 U |
| 2,4,5-Trichlorophenol | 1800 U | 1800 U | 9000 U | 1800 U |
| 2-Chloronaphthalene | 360 U | 360 U | 1800 U | 370 U |
| 2-Nitroaniline | 1800 U | 1800 U | 9000 U | 1800 U |
| Dimethyl Phthalate | 360 U | 360 U | 1800 U | 370 U |
| Acenaphthylene | 360 U | 360 U | 1800 U | 370 U |
| 3-Nitroaniline | 1800 U | 1800 U | 9000 U | 1800 U |

Modified)U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 CS008 | #174 CS009 | #174 CS006 | #174 CS007 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-005 | 8810-036-006 | 8810-036-007 | 8810-036-008 |
| Customer ID: | BH88A005 | BH88A006 | BH88A007 | BH88A008 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 5 | 1 |

| Analytes | | | | |
|---|---|---|---|---|
| Acenaphthene | 360 U | 360 U | 1800 U | 370 U |
| 2,4-Dinitrophenol | 1800 U | 1800 U | 9000 U | 1800 U |
| 4-Nitrophenol | 1800 U | 1800 U | 9000 U | 1800 U |
| Dibenzofuran | 360 U | 360 U | 1800 U | 370 U |
| 2,4-Dinitrotoluene | 360 U | 360 U | 1800 U | 370 U |
| 2,6-Dinitrotoluene | 360 U | 360 U | 1800 U | 370 U |
| Diethylphthalate | 360 U | 360 U | 1800 U | 370 U |
| 4-Chlorophenyl-phenylether | 360 U | 360 U | 1800 U | 370 U |
| Fluorene | 360 U | 360 U | 1800 U | 370 U |
| 4-Nitroaniline | 1800 U | 1800 U | 9000 U | 1800 U |
| 4,6-Dinitro-2-methylphenol | 1800 U | 1800 U | 9000 U | 1800 U |
| N-Nitrosodiphenylamine | 360 U | 360 U | 1800 U | 370 U |
| 4-Bromophenyl-phenylether | 360 U | 360 U | 1800 U | 370 U |
| Hexachlorobenzene | 360 U | 360 U | 1800 U | 370 U |
| Pentachlorophenol | 1800 U | 1800 U | 9000 U | 1800 U |
| Phenanthrene | 360 U | 360 U | 1800 U | 76 J |
| Anthracene | 360 U | 360 U | 1800 U | 370 U |
| di-n-Butyl Phthalate | 360 U | 360 U | 1800 U | 370 U |
| Fluoranthene | 1900 | 360 U | 1800 U | 130 J |
| Pyrene | 360 U | 360 U | 1800 U | 86 J |
| Butyl Benzyl Phthalate | 360 U | 360 U | 1800 U | 370 U |
| 3,3'-Dichlorobenzidine | 720 U | 720 U | 3600 U | 730 U |
| Benzo(a)Anthracene | 360 U | 360 U | 1800 U | 370 U |
| bis(2-Ethylhexyl)Phthalate | 430 | 630 | 1700 J | 430 |
| Chrysene | 360 U | 360 U | 1800 U | 370 U |
| di-n-Octyl Phthalate | 360 U | 360 U | 1800 U | 370 U |
| Benzo(b)Fluoranthene | 360 U | 360 U | 1800 U | 370 U |
| Benzo(k)Fluoranthene | 360 U | 360 U | 1800 U | 370 U |
| Benzo(a)Pyrene | 360 U | 360 U | 1800 U | 370 U |
| Indeno(1,2,3-cd)Pyrene | 360 U | 360 U | 1800 U | 370 U |
| Dibenz(a,h)Anthracene | 360 U | 360 U | 1800 U | 370 U |
| Benzo(g,h,i)Perylene | 360 U | 360 U | 1800 U | 370 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 CS012 | #174 CS015 | #174 CS013 | ? |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-009 | 8810-036-011 | 8810-036-012 | 8810-036-013 |
| Customer ID: | BH88A009 | BH88A011 | BH88A012 | BH88A013 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 86 % | 74 % | 90 % | 96 % |
| Phenol-d5: | 127 % | 110 % | 127 % | 140 % |
| 2,4,6-Br3-Phenol: | 155 % | 128 % | 160 % | 150 % |
| Nitrobenzene-d5: | 66 % | 56 % | 76 % | 71 % |
| 2-Fluorobiphenyl: | 81 % | 68 % | 72 % | 70 % |
| p-Terphenyl-d14: | 100 % | 86 % | 108 % | 114 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Phenol | 360 U | 370 U | 360 U | 92 J |
| bis(2-Chloroethyl)Ether | 360 U | 370 U | 360 U | 360 U |
| 2-Chlorophenol | 360 U | 370 U | 360 U | 360 U |
| 1,3-Dichlorobenzene | 360 U | 370 U | 360 U | 360 U |
| 1,4-Dichlorobenzene | 360 U | 370 U | 360 U | 360 U |
| Benzyl Alcohol | 360 U | 370 U | 360 U | 360 U |
| 1,2-Dichlorobenzene | 360 U | 370 U | 360 U | 360 U |
| 2-Methylphenol | 360 U | 370 U | 360 U | 360 U |
| bis(2-Chloroisopropyl)Ether | 360 U | 370 U | 360 U | 360 U |
| 4-Methylphenol | 360 U | 370 U | 360 U | 360 U |
| N-Nitroso-di-n-propylamine | 360 U | 370 U | 360 U | 360 U |
| Hexachloroethane | 360 U | 370 U | 360 U | 360 U |
| Nitrobenzene | 360 U | 370 U | 360 U | 360 U |
| Isophorone | 360 U | 370 U | 360 U | 360 U |
| 2-Nitrophenol | 360 U | 370 U | 360 U | 360 U |
| 2,4-Dimethylphenol | 360 U | 370 U | 360 U | 360 U |
| Benzoic Acid | 1800 U | 1800 U | 1800 U | 1800 U |
| bis(2-Chloroethoxy)Methane | 360 U | 370 U | 360 U | 360 U |
| 2,4-Dichlorophenol | 360 U | 370 U | 360 U | 360 U |
| 1,2,4-Trichlorobenzene | 360 U | 370 U | 360 U | 360 U |
| Naphthalene | 360 U | 370 U | 360 U | 360 U |
| 4-Chloroaniline | 360 U | 370 U | 360 U | 360 U |
| Hexachlororbutadiene | 360 U | 370 U | 360 U | 360 U |
| 4-Chloro-3-methylphenol | 360 U | 370 U | 720 | 960 |
| 2-Methylnaphthalene | 360 U | 370 U | 360 U | 360 U |
| Hexachlorocyclopentadiene | 360 U | 370 U | 360 U | 360 U |
| 2,4,6-Trichlorophenol | 360 U | 370 U | 360 U | 360 U |
| 2,4,5-Trichlorophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 2-Chloronaphthalene | 360 U | 370 U | 360 U | 360 U |
| 2-Nitroaniline | 1800 U | 1800 U | 1800 U | 1800 U |
| Dimethyl Phthalate | 360 U | 370 U | 360 U | 81 J |
| Acenaphthylene | 360 U | 370 U | 360 U | 360 U |
| 3-Nitroaniline | 1800 U | 1800 U | 1800 U | 1800 U |

Modifiers)U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 CS012 | #174 CS015 | #174 CS013 | ? |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-009 | 8810-036-011 | 8810-036-012 | 8810-036-013 |
| Customer ID: | BH88A009 | BH88A011 | BH88A012 | BH88A013 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

| Analytes | | | | |
|---|---|---|---|---|
| Acenaphthene | 360 U | 370 U | 360 U | 360 U |
| 2,4-Dinitrophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 4-Nitrophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| Dibenzofuran | 360 U | 370 U | 360 U | 360 U |
| 2,4-Dinitrotoluene | 360 U | 370 U | 360 U | 360 U |
| 2,6-Dinitrotoluene | 360 U | 370 U | 360 U | 360 U |
| Diethylphthalate | 360 U | 370 U | 360 U | 360 U |
| 4-Chlorophenyl-phenylether | 360 U | 370 U | 360 U | 360 U |
| Fluorene | 360 U | 370 U | 360 U | 360 U |
| 4-Nitroaniline | 1800 U | 1800 U | 1800 U | 1800 U |
| 4,6-Dinitro-2-methylphenol | 1800 U | 1800 U | 1800 U | 1800 U |
| N-Nitrosodiphenylamine | 360 U | 370 U | 360 U | 360 U |
| 4-Bromophenyl-phenylether | 360 U | 370 U | 360 U | 360 U |
| Hexachlorobenzene | 360 U | 370 U | 360 U | 360 U |
| Pentachlorophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| Phenanthrene | 360 U | 370 U | 360 U | 360 U |
| Anthracene | 360 U | 370 U | 360 U | 360 U |
| di-n-Butyl Phthalate | 360 U | 370 U | 360 U | 140 J |
| Fluoranthene | 360 U | 370 U | 360 U | 360 U |
| Pyrene | 360 U | 370 U | 360 U | 360 U |
| Butyl Benzyl Phthalate | 360 U | 370 U | 360 U | 360 U |
| 3,3'-Dichlorobenzidine | 710 U | 730 U | 720 U | 720 U |
| Benzo(a)Anthracene | 360 U | 370 U | 360 U | 360 U |
| bis(2-Ethylhexyl)Phthalate | 410 | 380 | 590 | 360 U |
| Chrysene | 360 U | 370 U | 360 U | 360 U |
| di-n-Octyl Phthalate | 360 U | 370 U | 360 U | 360 U |
| Benzo(b)Fluoranthene | 360 U | 370 U | 360 U | 360 U |
| Benzo(k)Fluoranthene | 360 U | 370 U | 360 U | 360 U |
| Benzo(a)Pyrene | 360 U | 370 U | 360 U | 360 U |
| Indeno(1,2,3-cd)Pyrene | 360 U | 370 U | 360 U | 360 U |
| Dibenz(a,h)Anthracene | 360 U | 370 U | 360 U | 360 U |
| Benzo(g,h,i)Perylene | 360 U | 370 U | 360 U | 360 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

Sample Information

| | | | #174 CS011 | FB |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-013 MS | 8810-036-013 MSD | 8810-036-014 | 8810-036-015 |
| Customer ID: | BH88A013 | BH88A013 | BH88A014 | BH88A015 |
| Matrix: | Soil | Soil | Soil | Water |
| Units: | UG/KG | UG/KG | UG/KG | UG/L |
| Dilution Factor: | 1 | 1 | 5 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 66 % | 72 % | 63 % | 49 % |
| Phenol-d5: | 97 % | 104 % | 99 % | 76 % |
| 2,4,6-Br3-Phenol: | 60 % | 109 % | 118 % | 45 % |
| Nitrobenzene-d5· | 52 % | 57 % | 65 % | 50 % |
| 2-Fluorobiphenyl: | 53 % | 54 % | 75 % | 42 % |
| p-Terphenyl-d14: | 86 % | 84 % | 82 % | 83 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Phenol | 71 % | 76 % | 1700 U | 10 U |
| bis(2-Chloroethyl)Ether | 360 U | 360 U | 1700 U | 10 U |
| 2-Chlorophenol | 70 % | 74 % | 1700 U | 10 U |
| 1,3-Dichlorobenzene | 360 U | 360 U | 1700 U | 10 U |
| 1,4-Dichlorobenzene | 45 % | 47 % | 1700 U | 10 U |
| Benzyl Alcohol | 360 U | 360 U | 1700 U | 10 U |
| 1,2-Dichlorobenzene | 360 U | 360 U | 1700 U | 10 U |
| 2-Methylphenol | 360 U | 360 U | 1700 U | 10 U |
| bis(2-Chloroisopropyl)Ether | 360 U | 360 U | 1700 U | 10 U |
| 4-Methylphenol | 360 U | 360 U | 1700 U | 10 U |
| N-Nitroso-di-n-propylamine | 63 % | 66 % | 1700 U | 10 U |
| Hexachloroethane | 360 U | 360 U | 1700 U | 10 U |
| Nitrobenzene | 360 U | 360 U | 1700 U | 10 U |
| Isophorone | 360 U | 360 U | 1700 U | 10 U |
| 2-Nitrophenol | 360 U | 360 U | 1700 U | 10 U |
| 2,4-Dimethylphenol | 360 U | 360 U | 1700 U | 10 U |
| Benzoic Acid | 1800 U | 1800 U | 8700 U | 50 U |
| bis(2-Chloroethoxy)Methane | 360 U | 360 U | 1700 U | 10 U |
| 2,4-Dichlorophenol | 360 U | 360 U | 1700 U | 10 U |
| 1,2,4-Trichlorobenzene | 56 % | 59 % | 1700 U | 10 U |
| Naphthalene | 360 U | 360 U | 1700 U | 10 U |
| 4-Chloroaniline | 360 U | 360 U | 1700 U | 10 U |
| Hexachlororbutadiene | 360 U | 360 U | 1700 U | 10 U |
| 4-Chloro-3-methylphenol | 94 % | 99 % | 1700 U | 10 U |
| 2-Methylnaphthalene | 360 U | 360 U | 1700 U | 10 U |
| Hexachlorocyclopentadiene | 360 U | 360 U | 1700 U | 10 U |
| 2,4,6-Trichlorophenol | 360 U | 360 U | 1700 U | 10 U |
| 2,4,5-Trichlorophenol | 1800 U | 1800 U | 8700 U | 50 U |
| 2-Chloronaphthalene | 360 U | 360 U | 1700 U | 10 U |
| 2-Nitroaniline | 1800 U | 1800 U | 8700 U | 50 U |
| Dimethyl Phthalate | 360 U | 360 U | 1700 U | 10 U |
| Acenaphthylene | 360 U | 360 U | 1700 U | 10 U |
| 3-Nitroaniline | 1800 U | 1800 U | 8700 U | 50 U |

Modifiers)U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

Sample Information

| | | | #174 CS011 | FB |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-013 MS | 8810-036-013 MSD | 8810-036-014 | 8810-036-015 |
| Customer ID. | BH88A013 | BH88A013 | BH88A014 | BH88A015 |
| Matrix: | Soil | Soil | Soil | Water |
| Units: | UG/KG | UG/KG | UG/KG | UG/L |
| Dilution Factor: | 1 | 1 | 5 | 1 |

Analytes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 63 | % | 66 | % | 1700 | U | 10 | U |
| 2,4-Dinitrophenol | 1800 | U | 1800 | U | 8700 | U | 50 | U |
| 4-Nitrophenol | 44 | % | 33 | % | 8700 | U | 50 | U |
| Dibenzofuran | 360 | U | 360 | U | 1700 | U | 10 | U |
| 2,4-Dinitrotoluene | 77 | % | 73 | % | 1700 | U | 10 | U |
| 2,6-Dinitrotoluene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Diethylphthalate | 360 | U | 360 | U | 1700 | U | 10 | U |
| 4-Chlorophenyl-phenylether | 360 | U | 360 | U | 1700 | U | 10 | U |
| Fluorene | 360 | U | 360 | U | 1700 | U | 10 | U |
| 4-Nitroaniline | 1800 | U | 1800 | U | 8700 | U | 50 | U |
| 4,6-Dinitro-2-methylphenol | 1800 | U | 1800 | U | 8700 | U | 50 | U |
| N-Nitrosodiphenylamine | 360 | U | 360 | U | 1700 | U | 10 | U |
| 4-Bromophenyl-phenylether | 360 | U | 360 | U | 1700 | U | 10 | U |
| Hexachlorobenzene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Pentachlorophenol | 59 | % | 122 | % | 8700 | U | 50 | U |
| Phenanthrene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Anthracene | 360 | U | 360 | U | 1700 | U | 10 | U |
| di-n-Butyl Phthalate | 360 | U | 95 | J | 1700 | U | 10 | U |
| Fluoranthene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Pyrene | 66 | % | 68 | % | 1700 | U | 10 | U |
| Butyl Benzyl Phthalate | 360 | U | 360 | U | 1700 | U | 10 | U |
| 3,3'-Dichlorobenzidine | 720 | U | 300 | J | 3500 | U | 20 | U |
| Benzo(a)Anthracene | 360 | U | 360 | U | 1700 | U | 10 | U |
| bis(2-Ethylhexyl)Phthalate | 360 | U | 360 | U | 1100 | J | 10 | U |
| Chrysene | 360 | U | 360 | U | 1700 | U | 10 | U |
| di-n-Octyl Phthalate | 360 | U | 360 | U | 1700 | U | 10 | U |
| Benzo(b)Fluoranthene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Benzo(k)Fluoranthene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Benzo(a)Pyrene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Indeno(1,2,3-cd)Pyrene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Dibenz(a,h)Anthracene | 360 | U | 360 | U | 1700 | U | 10 | U |
| Benzo(g,h,i)Perylene | 360 | U | 360 | U | 1700 | U | 10 | U |

Modifiers: U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 C5014 | #174 C5010 | #174 C5003 | #174 C5001 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-016 | 8810-036-017 | 8810-036-018 | 8810-036-019 |
| Customer ID: | BH88A016 | BH88A017 | BH88A018 | BH88A019 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

| Surrogate Recovery | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 77 % | 80 % | 66 % | 73 % |
| Phenol-d5: | 124 % | 124 % | 98 % | 112 % |
| 2,4,6-Br3-Phenol: | 113 % | 105 % | 96 % | 92 % |
| Nitrobenzene-d5: | 54 % | 55 % | 47 % | 51 % |
| 2-Fluorobiphenyl: | 70 % | 62 % | 66 % | 71 % |
| p-Terphenyl-d14: | 88 % | 71 % | 82 % | 82 % |

| Analytes | | | | |
|---|---|---|---|---|
| Phenol | 350 U | 340 U | 340 U | 340 U |
| bis(2-Chloroethyl)Ether | 350 U | 340 U | 340 U | 340 U |
| 2-Chlorophenol | 350 U | 340 U | 340 U | 340 U |
| 1,3-Dichlorobenzene | 350 U | 340 U | 340 U | 340 U |
| 1,4-Dichlorobenzene | 350 U | 340 U | 340 U | 340 U |
| Benzyl Alcohol | 350 U | 340 U | 340 U | 340 U |
| 1,2-Dichlorobenzene | 350 U | 340 U | 340 U | 340 U |
| 2-Methylphenol | 350 U | 340 U | 340 U | 340 U |
| bis(2-Chloroisopropyl)Ether | 350 U | 340 U | 340 U | 340 U |
| 4-Methylphenol | 350 U | 340 U | 340 U | 340 U |
| N-Nitroso-di-n-propylamine | 350 U | 340 U | 340 U | 340 U |
| Hexachloroethane | 350 U | 340 U | 340 U | 340 U |
| Nitrobenzene | 350 U | 340 U | 340 U | 340 U |
| Isophorone | 350 U | 340 U | 340 U | 340 U |
| 2-Nitrophenol | 350 U | 340 U | 340 U | 340 U |
| 2,4-Dimethylphenol | 350 U | 340 U | 340 U | 340 U |
| Benzoic Acid | 1800 U | 1700 U | 1700 U | 1700 U |
| bis(2-Chloroethoxy)Methane | 350 U | 340 U | 340 U | 340 U |
| 2,4-Dichlorophenol | 350 U | 340 U | 340 U | 340 U |
| 1,2,4-Trichlorobenzene | 350 U | 340 U | 340 U | 340 U |
| Naphthalene | 350 U | 340 U | 340 U | 340 U |
| 4-Chloroaniline | 350 U | 340 U | 340 U | 340 U |
| Hexachlorobutadiene | 350 U | 340 U | 340 U | 340 U |
| 4-Chloro-3-methylphenol | 350 U | 340 U | 340 U | 340 U |
| 2-Methylnaphthalene | 350 U | 340 U | 340 U | 340 U |
| Hexachlorocyclopentadiene | 350 U | 340 U | 340 U | 340 U |
| 2,4,6-Trichlorophenol | 350 U | 340 U | 340 U | 340 U |
| 2,4,5-Trichlorophenol | 1800 U | 1700 U | 1700 U | 1700 U |
| 2-Chloronaphthalene | 350 U | 340 U | 340 U | 340 U |
| 2-Nitroaniline | 1800 U | 1700 U | 1700 U | 1700 U |
| Dimethyl Phthalate | 350 U | 340 U | 340 U | 340 U |
| Acenaphthylene | 350 U | 340 U | 340 U | 340 U |
| 3-Nitroaniline | 1800 U | 1700 U | 1700 U | 1700 U |

(Modified)U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-036 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #174 CS014 | #174 CS010 | #174 CS003 | #174 CS001 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-016 | 8810-036-017 | 8810-036-018 | 8810-036-019 |
| Customer ID: | BH88A016 | BH88A017 | BH88A018 | BH88A019 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

| Analytes | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 350 | U | 340 | U | 340 | U | 340 | U |
| 2,4-Dinitrophenol | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| 4-Nitrophenol | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| Dibenzofuran | 350 | U | 340 | U | 340 | U | 340 | U |
| 2,4-Dinitrotoluene | 350 | U | 340 | U | 340 | U | 340 | U |
| 2,6-Dinitrotoluene | 350 | U | 340 | U | 340 | U | 340 | U |
| Diethylphthalate | 350 | U | 340 | U | 340 | U | 340 | U |
| 4-Chlorophenyl-phenylether | 350 | U | 340 | U | 340 | U | 340 | U |
| Fluorene | 350 | U | 340 | U | 340 | U | 340 | U |
| 4-Nitroaniline | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| 4,6-Dinitro-2-methylphenol | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| N-Nitrosodiphenylamine | 350 | U | 340 | U | 340 | U | 340 | U |
| 4-Bromophenyl-phenylether | 350 | U | 340 | U | 340 | U | 340 | U |
| Hexachlorobenzene | 350 | U | 340 | U | 340 | U | 340 | U |
| Pentachlorophenol | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| Phenanthrene | 350 | U | 340 | U | 90 | J | 340 | U |
| Anthracene | 350 | U | 340 | U | 340 | U | 340 | U |
| di-n-Butyl Phthalate | 350 | U | 340 | U | 340 | U | 340 | U |
| Fluoranthene | 350 | U | 340 | U | 130 | J | 130 | J |
| Pyrene | 350 | U | 340 | U | 110 | J | 97 | J |
| Butyl Benzyl Phthalate | 350 | U | 340 | U | 340 | U | 340 | U |
| 3,3'-Dichlorobenzidine | 700 | U | 670 | U | 680 | U | 690 | U |
| Benzo(a)Anthracene | 350 | U | 340 | U | 110 | J | 340 | U |
| bis(2-Ethylhexyl)Phthalate | 530 | | 420 | | 340 | U | 340 | U |
| Chrysene | 350 | U | 340 | U | 130 | J | 98 | J |
| di-n-Octyl Phthalate | 350 | U | 340 | U | 340 | U | 340 | U |
| Benzo(b)Fluoranthene | 350 | U | 340 | U | 340 | U | 340 | U |
| Benzo(k)Fluoranthene | 350 | U | 340 | U | 340 | U | 340 | U |
| Benzo(a)Pyrene | 350 | U | 340 | U | 340 | U | 340 | U |
| Indeno(1,2,3-cd)Pyrene | 350 | U | 340 | U | 340 | U | 340 | U |
| Dibenz(a,h)Anthracene | 350 | U | 340 | U | 340 | U | 340 | U |
| Benzo(g,h,i)Perylene | 350 | U | 340 | U | 340 | U | 340 | U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

ROCKY FLATS

November 18, 1988

RFW#: 88-10-S036



Tentatively Identified Compounds,
BNA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BLANK | 11/04/88 | | NONE FOUND | |
| BH88A015 | 11/04/88 | | NONE FOUND | |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A002 | 11/04/88 | 1500-2500 | UNRESOLVED HYDROCARBON COMPLEX | |
| BH88A003 | 11/04/88 | 1866 | UNKNOWN | 700 |
| | | 1952 | UNKNOWN | 1240 |
| | | 1975 | UNKNOWN | 2310 |
| | | 2119 | UNKNOWN | 1420 |
| | | 2125 | UNKNOWN | 890 |
| | | 2133 | UNKNOWN | 890 |
| | | 2322 | UNKNOWN | 1070 |
| | | 2640 | UNKNOWN | 8340 |
| | | 2682 | UNKNOWN | 1070 |
| BH88A004 | 11/06/88 | 1100-2450 | UNRESOLVED HYDROCARBON COMPLEX | |
| BH88A005 | 11/06/88 | 1500-3000 | UNRESOLVED HYDROCARBON COMPLEX | |

ROCKY FLATS

November 18, 1988

RFW#: 88-10-S036

Tentatively Identified Compounds,
BNA Fraction



| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A006 | 11/06/88 | 1408 | UNKNOWN | 360 |
| | | 1646 | UNKNOWN | 145 |
| | | 1921 | UNKNOWN | 830 |
| | | 2051 | UNKNOWN | 1400 |
| | | 2226 | UNKNOWN | 720 |
| | | 2552 | UNKNOWN | 580 |
| | | 2877 | UNKNOWN | 5300 |
| | | 2929 | UNKNOWN | 2400 |
| BH88A007 | 11/06/88 | 1890 | UNKNOWN | 900 |
| | | 1906 | UNKNOWN | 1440 |
| | | 1923 | UNKNOWN | 1080 |
| | | 2011 | UNKNOWN | 1795 |
| | | 2028 | UNKNOWN | 2690 |
| | | 2042 | UNKNOWN | 1975 |
| | | 2078 | UNKNOWN | 2330 |

ROCKY FLATS

November 18, 1988

RFW#: 88-10-S036

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Tentatively Identified Compounds,
BNA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A008 | 11/06/88 | 1409 | UNKNOWN | 550 |
| | | 1649 | UNKNOWN | 180 |
| | | 1760 | UNKNOWN | 150 |
| | | 1811 | UNKNOWN | 220 |
| | | 1889 | UNKNOWN | 220 |
| | | 1922 | UNKNOWN | 440 |
| | | 1983 | UNKNOWN | 330 |
| | | 2011 | UNKNOWN | 220 |
| | | 2053 | UNKNOWN | 840 |
| | | 2134 | UNKNOWN | 330 |
| | | 2228 | UNKNOWN | 590 |
| | | 2478 | UNKNOWN | 470 |
| | | 2880 | UNKNOWN | 4500 |
| | | 2932 | UNKNOWN | 660 |
| | | 2972 | UNKNOWN | 430 |
| BH88A009 | 11/06/88 | 1409 | UNKNOWN | 320 |
| | | 1647 | UNKNOWN | 250 |
| | | 1811 | UNKNOWN | 285 |
| | | 1889 | UNKNOWN | 250 |
| | | 1923 | UNKNOWN | 510 |
| | | 1983 | UNKNOWN | 180 |
| | | 2053 | UNKNOWN | 890 |
| | | 2083 | UNKNOWN | 215 |
| | | 2132 | UNKNOWN | 180 |
| | | 2228 | UNKNOWN | 460 |
| | | 2382 | UNKNOWN | 460 |
| | | 2555 | UNKNOWN | 505 |
| | | 2886 | UNKNOWN | 8400 |
| | | 2935 | UNKNOWN | 2100 |

ROCKY FLATS

November 18, 1988

RFW#: 88-10-S036

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Tentatively Identified Compounds,
BNA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A011 | 11/06/88 | 1409 | UNKNOWN | 290 |
| | | 1647 | UNKNOWN | 180 |
| | | 1811 | UNKNOWN | 180 |
| | | 1889 | UNKNOWN | 150 |
| | | 1922 | UNKNOWN | 620 |
| | | 2045 | UNKNOWN | 880 |
| | | 2052 | UNKNOWN | 1400 |
| | | 2227 | UNKNOWN | 850 |
| | | 2379 | UNKNOWN | 540 |
| | | 2552 | UNKNOWN | 740 |
| | | 2879 | UNKNOWN | 7500 |
| | | 2928 | UNKNOWN | 1600 |
| BH88A012 | 11/06/88 | 1500-2500 | UNRESOLVED HYDROCARBON COMPLEX | |
| BH88A013 | 11/06/88 | 1500-2400 | UNRESOLVED HYDROCARBON COMPLEX | |
| BH88A014 | 11/06/88 | 1500-2400 | UNRESOLVED HYDROCARBON COMPLEX | |
| BH88A016 | 11/10/88 | 1408 | UNKNOWN | 1620 |
| | | 1648 | UNKNOWN | 630 |
| | | 1888 | UNKNOWN | 140 |
| | | 1922 | UNKNOWN | 210 |
| | | 2051 | UNKNOWN | 700 |
| | | 2226 | UNKNOWN | 460 |
| | | 2875 | UNKNOWN | 6000 |
| | | 2932 | UNKNOWN | 6460 |

ROCKY FLATS

November 18, 1988

RFW#: 88-10-S036

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Tentatively Identified Compounds,
BNA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A017 | 11/10/88 | 1983 | ALKANE | 470 |
| | | 1991 | PNA | 1100 |
| | | 2052 | UNKNOWN | 720 |
| | | 2227 | UNKNOWN | 1200 |
| | | 2879 | UNKNOWN | 20000 |
| BH88A018 | 11/10/88 | 1407 | UNKNOWN | 480 |
| | | 1645 | UNKNOWN | 140 |
| | | 1887 | UNKNOWN | 170 |
| | | 1921 | UNKNOWN | 204 |
| | | 1982 | UNKNOWN | 140 |
| | | 2051 | UNKNOWN | 750 |
| | | 2477 | UNKNOWN | 600 |
| | | 2883 | UNKNOWN | 8700 |
| | | 2937 | UNKNOWN | 2500 |
| | | 2977 | UNKNOWN | 1060 |
| BH88A019 | 11/10/88 | 1407 | UNKNOWN | 380 |
| | | 1646 | UNKNOWN | 210 |
| | | 1921 | UNKNOWN | 210 |
| | | 2051 | UNKNOWN | 580 |
| | | 2226 | UNKNOWN | 650 |
| | | 2476 | UNKNOWN | 410 |
| | | 2517 | UNKNOWN | 210 |
| | | 2881 | UNKNOWN | 3640 |
| | | 2935 | UNKNOWN | 1310 |

Reviewed and approved for

Robert Carney
Unit Leader

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

# ORGANICS CASE NARRATIVE

Client: ROCKWELL INTERNATIONAL
RFW #: 8810S108
W.O. #: 2029-38-01-0000

FRACTION: VOA

1. This set of samples consisted of 1 water and 2 soil samples collected on 10/27/88.

2. The soil samples were analyzed on 12/03/88 in accordance with SW 846 protocols.

3. Due to GC/MS VOA instrument down time, samples BH88A048; BH88A049; and BH88A050 were not analyzed within the proper holding time. The samples were analyzed by 601/602 GC-ELCD and GC-PID methods. All of sample BH88A050 was used in GC analysis.

4. All tuning and calibration criteria were met for all samples.

5. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

6. Of the 6 surrogates analyzed, none were outside of QC limits.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.
B - Indicates the compound was found in the blank.

Date:
12/30/88

Approved by:

WESTON

WESTON ANALYTICS
VOLATILE ANALYTICAL DATA PACKAGE FOR
ROCKWELL INTERNATIONAL - RF

DATE RECEIVED: 10/31/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A048 | 8810-108-001 | 10/27/88 | NA | 12/03/88 |
| BH88A049 | 8810-108-002 | 10/27/88 | NA | 12/03/88 |
| LAB QC: | | | | |
| BLANK | 8810-108-0001BL | NA | NA | NA |

Robert F. Carney FOR 12/20/88

Norman W. Flynn
Organic Section Manager
WESTON Analytical Laboratories

DATE

ROCKY FLATS

December 20, 1988

88-10-S108

Tentatively Identified Compounds,
VOA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| -001 | 12/03/88 | | NONE FOUND | |
| -002 | 12/03/88 | | NONE FOUND | |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BLANK | 12/03/88 | | NONE FOUND | |

Reviewed and approved R. F. Carney
Robert Carney
Unit Leader

WESTON ANALYTICS
ORGANIC DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-108 Client. ROCKY FLATS 

Sample Information

| | | CS022, #182 | CS023, #182 |
|---|---|---|---|
| RFW Batch ID: | 8810-108-0001BL | 8810-108-001 | 8810-108-002 |
| Customer ID: | BLANK | BH88A048 | BH88A049 |
| Matrix: | Water | Soil | Soil |
| Units: | UG/L | UG/KG | UG/KG |
| Dilution Factor. | 1 | 1 | 1 |

Surrogate Recovery

| | | | |
|---|---|---|---|
| Toluene-d8: | 99 % | 111 % | 97 % |
| Bromofluorobenzene: | 102 % | 80 % | 92 % |
| 1,2-Dichloroethane-d4: | 96 % | 77 % | 70 % |

Analytes

| | | | |
|---|---|---|---|
| Chloromethane | 10 U | 11 U | 11 U |
| Bromomethane | 10 U | 11 U | 11 U |
| Vinyl Chloride | 10 U | 11 U | 11 U |
| Chloroethane | 10 U | 11 U | 11 U |
| Methylene Chloride | 2.0 J | 8 0 B | 7.0 B |
| Acetone | 10 U | 19 | 19 |
| Carbon Disulfide | 5 0 U | 5.6 U | 5 4 U |
| 1,1-Dichloroethene | 5.0 U | 5 0 J | 5.4 U |
| 1,1-Dichloroethane | 5.0 U | 4.0 J | 5.4 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.6 U | 5.4 U |
| Chloroform | 5 0 U | 5.6 U | 5 4 U |
| 1,2-Dichloroethane | 5 0 U | 5.6 U | 5.4 U |
| 2-Butanone | 10 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.0 U | 220 | 5 4 U |
| Carbon Tetrachloride | 5.0 U | 5.6 U | 5 4 U |
| Vinyl Acetate | 10 U | 11 U | 11 U |
| Bromodichloromethane | 5 0 U | 5 6 U | 5.4 U |
| 1,2-Dichloropropane | 5.0 U | 5.6 U | 5 4 U |
| Trans-1,3-Dichloropropene | 5.0 U | 5.6 U | 5 4 U |
| Trichloroethene | 5 0 U | 5.6 U | 5.4 U |
| Dibromochloromethane | 5.0 U | 5.6 U | 5 4 U |
| 1,1,2-Trichloroethane | 5.0 U | 5.6 U | 5.4 U |
| Benzene | 5 0 U | 5.6 U | 5 4 U |
| cis-1,3-Dichloropropene | 5.0 U | 5.6 U | 5 4 U |
| 2-Chloroethylvinylether | 10 U | 11 U | 11 U |
| Bromoform | 5.0 U | 5.6 U | 5.4 U |
| 4-Methyl-2-pentanone | 10 U | 11 U | 11 U |
| 2-Hexanone | 10 U | 11 U | 11 U |
| Tetrachloroethene | 5.0 U | 1.0 J | 5 4 U |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.6 U | 5 4 U |
| Toluene | 5.0 U | 7.0 | 5 4 U |
| Chlorobenzene | 5 0 U | 5.6 U | 5.4 U |
| Ethylbenzene | 5.0 U | 7.0 | 5 4 U |
| Styrene | 5.0 U | 5.6 U | 5 4 U |
| Total Xylenes | 5.0 U | 14 | 5 4 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-0001BL

Customer ID BLANK

GCL#

TENTATIVELY IDENTIFIED COMPOUNDS

Five (5) Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| VOLATILE COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION |
|---|---|---|
| Unknown hydrocarbon | 25/03 | 9 ug/l |
| Unknown | 27.90 | 51 ug/l |
| Unknown hydrocarbon | 28.39 | 6 ug/l |
| Unknown hydrocarbon | 29.39 | 10 ug/l |
| Unknown hydrocarbon | 29.63 | 7 ug/l |

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St , University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-0002BL

Customer ID BLANK

GCL#

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-0003BL

Customer ID BLANK

GCL#

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St , University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-0004BL

Customer ID BLANK

GCL#

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-001 Trip Blank

Customer ID BH88A32

GCL# 142966

TENTATIVELY IDENTIFIED COMPOUNDS

Ten (10) Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| VOLATILE COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION |
|---|---|---|
| Unknown hydrocarbon | 21 95 | 21 ug/l |
| Unknown hydrocarbon | 24 22 | 15 ug/l |
| Unknown hydrocarbon | 25.06 | 83 ug/l |
| Unknown hydrocarbon | 25.77 | 29 ug/l |
| Unknown | 26.37 | 10 ug/l |
| Unknown | 26.75 | 14 ug/l |
| Unknown hydrocarbon | 26.94 | 12 ug/l |
| Unknown hydrocarbon | 27.14 | 11 ug/l |
| Unknown | 27.94 | 65 ug/l |

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St , University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-002 CS031, #176

Customer ID BH88A33

GCL# 142967

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-003

Customer ID BH88A34 CS028, #176

GCL# 142968

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St., University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-004

Customer ID BH88A35 PS029, #176

GCL# 142969

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St , University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-005

Customer ID BH88A36 CS033, #176

GCL# 142970

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St , University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-006

Customer ID BH88A37 es018, #175

GCL# 142971

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St., University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-007

Customer ID BH88A38 CS019, #175

GCL# 142972

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St , University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-008

Customer ID BH88A39 CSOA1, #175

GCL# 142973

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-009

Customer ID BH88A40 not on list

GCL# 142974

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-010

Customer ID BH88A41 Field Blank

GCL# 142975

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St , University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

RFW# 8810-070-011

Customer ID BH88A42 es020, #175

GCL# 142976

TENTATIVELY IDENTIFIED COMPOUNDS

No Volatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search This is exclusive of any priority pollutants, surrogates or internal standards

#176 Unknowns

**EBASCO SERVICES INCORPORATED**

BY _____ DATE _____ SHEET ____ OF ____

DEPT _____

| | COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|---|
| CS028 | Unknown | 6.57 | 5800 | ug/kg | J | A |
| | Unknown | 27.53 | 230 | ug/kg | J | |
| | Unknown | 27.88 | 170 | ug/kg | J | |
| | Unknown | 28.92 | 270 | ug/kg | J | |
| | Unknown | 32.13 | 380 | ug/kg | J | |
| | Unknown Hydrocarbon | 35.51 | 290 | ug/kg | J | |
| | Unknown | 36.64 | 770 | ug/kg | J | |
| | Unknown Hydrocarbon | 38.05 | 440 | ug/kg | J | |
| | Unknown Hydrocarbon | 41.52 | 400 | ug/kg | J | |
| | Unknown | 46.33 | 4000 | ug/kg | J | |
| | Unknown | 47.04 | 720 | ug/kg | J | |
| CS029 | Unknown | 6.55 | 7800 | ug/kg | J | A |
| | Unknown | 32.12 | 390 | ug/kg | J | |
| | Unknown Hydrocarbon | 32.38 | 150 | ug/kg | J | |
| | Unknown Hydrocarbon | 33.43 | 180 | ug/kg | J | |
| | Unknown Hydrocarbon | 34.43 | 200 | ug/kg | J | |
| | Unknown Hydrocarbon | 35.49 | 280 | ug/kg | J | |
| | Unknown | 36.64 | 710 | ug/kg | J | |
| | Unknown Hydrocarbon | 38.03 | 530 | ug/kg | J | |
| | Unknown Hydrocarbon | 41.51 | 390 | ug/kg | J | |
| | Unknown | 42.04 | 140 | ug/kg | J | |
| | Unknown | 46.29 | 3400 | ug/kg | J | |
| | Unknown | 47.03 | 1400 | ug/kg | J | |
| CS034 | Unknown | 6.52 | 6900 | ug/kg | J | A |
| | Unknown | 29.30 | 1100 | ug/kg | J | |
| | Unknown | 32.11 | 480 | ug/kg | J | |
| | Unknown | 36.62 | 700 | ug/kg | J | |
| | Unknown | 46.24 | 2400 | ug/kg | J | |
| | Unknown | 46.98 | 880 | ug/kg | J | |
| CS033 | Unknown | 6.59 | 6900 | ug/kg | J | A |
| | Unknown | 27.89 | 150 | ug/kg | J | |
| | Unknown | 32.11 | 540 | ug/kg | J | |
| | Unknown | 36.63 | 730 | ug/kg | J | |
| | Unknown Hydrocarbon | 38.03 | 340 | ug/kg | J | |
| | Unknown Hydrocarbon | 41.50 | 330 | ug/kg | J | |
| | Unknown | 46.28 | 2200 | ug/kg | J | |
| | Unknown | 47.04 | 1100 | ug/kg | J | |

Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

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#1T2 Unknowns

| | COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|---|
| CS018 | Unknown | 6.63 | 11000 | ug/kg | J | A |
| | Unknown | 29.00 | 890 | ug/kg | J | |
| | Unknown | 32.15 | 670 | ug/kg | J | |
| | Unknown | 35.53 | 460 | ug/kg | J | |
| | Unknown | 36.67 | 860 | ug/kg | J | |
| | Unknown | 46.38 | 3100 | ug/kg | J | |
| | Unknown | 47.14 | 1300 | ug/kg | J | |
| CS019 | Unknown | 6.58 | 9600 | ug/kg | J | A |
| | Unknown Hydrocarbon | 22.18 | 340 | ug/kg | J | |
| | Unknown Hydrocarbon | 22.93 | 280 | ug/kg | J | |
| | Unknown Hydrocarbon | 23.69 | 430 | ug/kg | J | |
| | Unknown Hydrocarbon | 23.77 | 410 | ug/kg | J | |
| | Unknown | 24.66 | 780 | ug/kg | J | |
| | Unknown Hydrocarbon | 25.13 | 350 | ug/kg | J | |
| | Unknown Hydrocarbon | 26.48 | 420 | ug/kg | J | |
| | Unknown Hydrocarbon | 27.77 | 370 | ug/kg | J | |
| | Unknown Hydrocarbon | 29.01 | 350 | ug/kg | J | |
| | Unknown | 30.20 | 390 | ug/kg | J | |
| | Unknown | 31.33 | 250 | ug/kg | J | |
| | Unknown | 32.13 | 620 | ug/kg | J | |
| | Unknown | 32.40 | 250 | ug/kg | J | |
| | Unknown | 33.45 | 280 | ug/kg | J | |
| | Unknown | 34.46 | 180 | ug/kg | J | |
| | Unknown | 35.53 | 290 | ug/kg | J | |
| | Unknown | 36.66 | 870 | ug/kg | J | |
| | Unknown | 46.32 | 1900 | ug/kg | J | |
| | Unknown | 47.08 | 730 | ug/kg | J | |
| CS020 | Unknown | 6.48 | 5100 | ug/kg | J | A |
| | Unknown | 28.76 | 290 | ug/kg | J | B |
| | Unknown | 32.06 | 500 | ug/kg | J | B |
| | Unknown | 36.54 | 830 | ug/kg | J | B |
| | Unknown | 46.09 | 1900 | ug/kg | J | |
| | Unknown | 46.84 | 850 | ug/kg | J | |

EBASCO SERVICES INCORPORATED

SHEET ____ OF ____ DEPT NO ____ OFS NO ____ BY ____ DATE ____ CHKD BY ____ DATE ____ CLIENT ____ PROJECT ____ SUBJECT ____

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#172

Unknowns (continued)

| | | | | | | |
|---|---|---|---|---|---|---|
| CS021 | Unknown | 6.56 | 7600 | ug/kg | J | A |
| | Unknown | 24.65 | 300 | ug/kg | J | |
| | Unknown | 32.15 | 410 | ug/kg | J | |
| | Unknown | 32.77 | 310 | ug/kg | J | |
| | Unknown | 33.47 | 240 | ug/kg | J | |
| | Unknown | 33.66 | 410 | ug/kg | J | |
| | Unknown | 33.95 | 200 | ug/kg | J | |
| | Unknown | 34.48 | 510 | ug/kg | J | |
| | Unknown | 34.81 | 210 | ug/kg | J | |
| | Phosphoric Acid Ester | 35.37 | 260 | ug/kg | J | |
| | Unknown | 35.56 | 390 | ug/kg | J | |
| | Phosphoric Acid Ester | 35.70 | 420 | ug/kg | J | |
| | Unknown | 36.69 | 700 | ug/kg | J | |
| | Unknown | 37.64 | 540 | ug/kg | J | |
| | Unknown | 38.10 | 420 | ug/kg | J | |
| | Unknown Hydrocarbon | 41.56 | 960 | ug/kg | J | |
| | Unknown | 46.34 | 1400 | ug/kg | J | |

Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

EBASCO SERVICES INCORPORATED

BY ____ DATE ____ SHEET ____ OF ____

CHKD BY ____ DATE ____ DEPT NO ____

CLIENT ____ OFS NO ____

PROJECT ____

SUBJECT ____

581 2-88

WESTON
MANAGERS DESIGNERS/CONSULTANTS
7720 LORRAINE AVENUE
SUITE 105
STOCKTON CA 95210
PHONE 209-957-3405

January 4, 1989

Kirk McKinley
Rockwell International

Dear Mr. McKinley:

Enclosed are radiochemistry data for samples collected in October and November, 1988 at Rocky Flats.

Please call me, if you have any questions.

Sincerely,

ROY F. WESTON, INC.

Peg Beaty

Peg Beaty
Senior Project Manager

PB:te

cc: Tom Greengard
Brent Lewis

182 176
176 175
174
170
177

**Accu-Labs Research, Inc.**

485 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423-2766

December 28, 1988

Ms. Peg Beatty
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Ms. Beatty,

Enclosed are the analytical reports in the requested format as per Contract LL-0421 for the following ALR Nos.:

9299-28380-8
9299-28412-2
9299-28389-9
9612-28466-8
9612-28524-2

These reports cover the Radiochemistry portion only.

A floppy disk is being sent under seperate cover which contains all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

For Bud Summers
Radiochemistry
Supervisor

BS/dh

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL ROCKY FLATS) 

| Sample Information | #182 CS022 | # 182 CS023 |
|---|---|---|
| RFW Batch ID: | 2000-127-100 | 2000-128-100 |
| Customer ID: | BH88A048 | BH88A049 |
| Laboratory ID: | 9612-28524-2-1 | 9612-28524-2-2 |
| Matrix: | Soil | Soil |

Radio Chemistry

| | | | | |
|---|---|---|---|---|
| Gross Alpha..... | 26 ± 13 | pci/g | 22 ± 13 | pci/g |
| Gross Beta..... | 25 ± 6 | pci/g | 29 ± 6 | pci/g |
| Uranium 233, 234..... | 1.3 ± 0.2 | pci/g | 0.56 ± 0.10 | pci/g |
| Uranium 235..... | | | | |
| Uranium 238..... | 5.9 ± 0.3 | pci/g | 0.54 ± 0.10 | pci/g |
| Strontium 89, 90..... | | | | |
| Plutonium 239, 240..... | -0.02 ± .10 | pci/g | -0.02 ± 0.10 | pci/g |
| Americium 241..... | -0.03 ± [illegible] | pci/g | -0.04 ± 0.09 | pci/g |
| Cesium 137..... | | | | |
| Tritium..... | 0.13 ± 0.14 | pci/ml | 0.09 ± 0.14 | pci/ml |
| % Moisture..... | 8.1 | | 6.5 | |

uncertainty

ACCU LABS RESEARCH INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

| Sample Information | #176 CS024 | | #176 CS025 | | #176 CS026 | |
|---|---|---|---|---|---|---|
| RFW Batch ID: | 2000-119-100 | | 2000-120-100 | | 2000-121-100 | |
| Customer ID: | [redacted]A024 | | [redacted]A025 | | [redacted]026 | |
| Laboratory ID: | 9612-28466-8-1 | | 9612-28466-8-2 | | 9612-28466-8-3 | |
| Matrix: | Soil | | Soil | | Soil | |
| **Radio Chemistry** | | | | | | |
| Gross Alpha..... | 28 ± 13 | pci/g | 21 ± 12 | pci/g | 16 ± 11 | pci/g |
| Gross Beta..... | 29 ± 6 | pci/g | 22 ± 6 | pci/g | 14 ± 6 | pci/g |
| Uranium 233, 234..... | 1.3 ± 0.3 | pci/g | 0.66 ± 0.16 | pci/g | 0.67 ± 0.14 | pci/g |
| Uranium 235..... .. | | | | | | |
| Uranium 238.... ..... | 1.1 ± 0.3 | pci/g | 0.79 ± 0.16 | pci/g | 0.56 ± 0.12 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240 .. . . .. | 0.43 ± 0.17 | pci/g | 0.20 ± 0.15 | pci/g | 0.19 ± 0.15 | pci/g |
| Americium 241..... .... | 0.39 ± 0.11 | pci/g | 0.17 ± 0.07 | pci/g | 0.28 ± 0.08 | pci/g |
| Cesium 137. ..... ..... | | | | | | |
| Tritium..... | -0.05 ± 0.15 | pci/ml | 0.07 ± 0.16 | pci/ml | -0.03 ± 0.15 | pci/ml |
| % Moisture..... .. ..... | 7.3 | | 5.1 | | 4.0 | |

| Sample Information | | | FB | | #176 CS027 | |
|---|---|---|---|---|---|---|
| RFW Batch ID: | 2000-122-100 | | 2000-123-100 | | 2000-124-100 | |
| Customer ID: | BHAA8027+MS.MSD | – ? | BH88A028 | | [redacted]A029 | |
| Laboratory ID: | 9612-28466-8-4 | Cancelled | 9612-28466-8-5 | | 9612-28466-8-6 | |
| Matrix: | Soil | bore # | water | field blank | Soil | |
| **Radio Chemistry** | | | | | | |
| Gross Alpha..... .. | 13 ± 11 | pci/g | 0 ± 1 | pci/l | 18 ± 12 | pci/g |
| Gross Beta.. . ..... | 13 ± 6 | pci/g | 0 ± 2 | pci/l | 18 ± 6 | pci/g |
| Uranium 233, 234..... | 0.68 ± 0.15 | pci/g | 0.0 ± 0.1 | pci/l | 0.51 ± 0.14 | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... ..... | 0.51 ± 0.12 | pci/g | 0.0 ± 0.1 | pci/l | 0.53 ± 0.13 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... .... | 0.19 ± 0.13 | pci/g | 0.0 ± 0.1 | pci/l | 1.0 ± 0.2 | pci/g |
| Americium 241..... | 0.32 ± 0.08 | pci/g | 0.0 ± 0.1 | pci/l | 0.34 ± 0.08 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... | -0.05 ± 0.15 | pci/ml | 0.10 ± 0.16 | pci/l | -0.01 ± 0.15 | pci/ml |
| % Moisture..... | 4.3 | | | | 5.5 | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | # 176 C5032 | # 176 C5030 |
|---|---|---|
| RFW Batch ID: | 2000-125-100 | 2000-126-100 |
| Customer ID: | [redacted]A030 | [redacted]A031 |
| Laboratory ID: | 9612-28466-8-7 | 9612-28466-8-8 |
| Matrix: | Soil | Soil |

Radio Chemistry

| | | | | |
|---|---|---|---|---|
| Gross Alpha..... | 31 ± 14 | pci/g | 28 ± 13 | pci/g |
| Gross Beta..... ..... | 15 ± 6 | pci/g | 20 ± 6 | pci/g |
| Uranium 233, 234..... | 0.66 ± 0.17 | pci/g | 0.80 ± 0.15 | pci/g |
| Uranium 235..... | | | | |
| Uranium 238..... ..... | 0.64 ± 0.16 | pci/g | 0.57 ± 0.12 | pci/g |
| Strontium 89, 90..... .. | | | | |
| Plutonium 239, 240. .... .. | 0.00 ± 0.12 | pci/g | 0.70 ± 0.16 | pci/g |
| Americium 241..... .. ..... | 0.18 ± 0.07 | pci/g | 0.30 ± 0.08 | pci/g |
| Cesium 137..... .... .... | | | | |
| Tritium..... . . | 0.18 ± 0.16 | pci/ml | 0.05 ± 0.15 | pci/ml |
| % Moisture..... ..... . . | 5.9 | | 3.8 | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

Sample Information

| | | | |
|---|---|---|---|
| | #174 CS015 | #174 CS013 | |
| RFW Batch ID: | 2000-110-100 | 2000-111-100 | 2000-112-100 |
| Customer ID: | BH88A011 | BH88A012 | BH88A013+MS+MSD |
| Laboratory ID: | 9299-28388-9-1 | 9299-28388-9-2 | 9299-28388-9-3 |
| Matrix: | Soil | Soil | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 28 ± 10 | pci/g | 18 ± 9 | pci/g | 26 ± 10 | pci/g |
| Gross Beta..... | 25 ± 6 | pci/g | 26 ± 6 | pci/g | 39 ± 6 | pci/g |
| Uranium 233, 234..... | 0.83 ± 0.13 | pci/g | 0.83 ± 0.12 | pci/g | 0.63 ± 0.09 | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... | 0.81 ± 0.13 | pci/g | 0.81 ± 0.11 | pci/g | 0.49 ± 0.08 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... | 0.05 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g | 0.02 ± 0.03 | pci/g |
| Americium 241..... | 0.[illegible] ± 0.04 | pci/g | 0.03 ± 0.05 | pci/g | 0.00 ± 0.04 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... | -0.01 ± 0.15 | pci/ml | -0.08 ± 0.15 | pci/ml | -0.05 ± 0.15 | pci/ml |
| % Moisture..... | 6.0 | | 5.4 | | 3.8 | |

Sample Information

| | | | |
|---|---|---|---|
| | #174 CS011 | FB | #174 CS014 |
| RFW Batch ID: | 2000-113-100 | 2000-114-100 | 2000-115-100 |
| Customer ID: | BH88A014 | BH88A015 | BH88A016 |
| Laboratory ID: | 9299-28388-9-4 | 9299-28388-9-5 | 9299-28388-9-6 |
| Matrix. | Soil | Water | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 42 ± 12 | pci/g | [illegible] ± [illegible] | pci/l | 25 ± 10 | pci/g |
| Gross Beta..... | 36 ± 6 | pci/g | 5 ± 8 | pci/l | 18 ± 5 | pci/g |
| Uranium 233, 234..... | 0.87 ± 0.11 | pci/g | 0.9 ± 0.3 | pci/l | 0.72 ± 0.2[illegible] | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... | 0.84 ± 0.11 | pci/g | -0.1 ± 0.4 | pci/l | 0.72 ± 0.20 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... | 0.03 ± 0.03 | pci/g | ** | | 0.00 ± 0.02 | pci/g |
| Americium 241..... | 0.02 ± 0.05 | pci/g | ** | | -0.01 ± 0.03 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... | 0.00 ± 0.15 | pci/ml | 30 ± 150 | pci/l | -0.05 ± 0.15 | pci/ml |
| % Moisture..... | [illegible] | | | | 3.1 | |

** Insufficient Sample.

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

| Sample Information | #174 CS010 | #174 CS003 | #174 CS001 |
|---|---|---|---|
| RFW Batch ID: | 2000-116-100 | 2000-117-100 | 2000-118-100 |
| Customer ID: | BH88A017 | BH88A018 | BH88A019 |
| Laboratory ID: | 9299-28386-9-7 | 9299-25388-9-8 | 9299-28388-9-9 |
| Matrix: | Soil | Soil | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 14 ± 8 | pci/g | 28 ± 10 | pci/g | 27 ± 10 | pci/g |
| Gross Beta..... | 22 ± 5 | pci/g | 22 ± 6 | pci/g | 22 ± 5 | pci/g |
| Uranium 233, 234..... | 0.48 ± 0.08 | pci/g | 0.70 ± 0.10 | pci/g | 0.65 ± 0.10 | pci/g |
| Uranium 235.... ..... | | | | | | |
| Uranium 238..... ..... | 0.50 ± 0.08 | pci/g | 0.69 ± 0.10 | pci/g | 0.[illegible] ± 0.1 | pci/g |
| Strontium 89 90..... | | | | | | |
| Plutonium 239, 240..... | 0.00 ± 0.03 | pci/g | 0.02 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g |
| Americium 241 ..... | -0.0[illegible] ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g | 0.04 ± 0.05 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... ..... | 0.08 ± 0.15 | pci/ml | 0.07 ± 0.15 | pci/ml | 0.00 ± 0.15 | pci/ml |
| % Moisture.... ..... ... | 2.0 | | 1.3 | | 2.4 | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

| Sample Information | #174 CS005 | #174 CS002 | #174 CS004 |
|---|---|---|---|
| RFW Batch ID: | 2000-100-100 | 2000-101-100 | 2000-102-100 |
| Customer ID. | BH88A002 | BH88A003 | BH88A004 |
| Laboratory ID: | 9299-28380-8-1 | 9299-28380-8-2 | 9299-28380-8-3 |
| Matrix: | Soil | Soil | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 11 ± 8 | pci/g | 18 ± 9 | pci/g | 15 ± 7 | pci/g |
| Gross Beta..... | 22 ± 6 | pci/g | 18 ± 6 | pci/g | 27 ± 6 | pci/g |
| Uranium 233, 234..... | 0.65 ± 0.11 | pci/g | 0.50 ± 0.10 | pci/g | 0.67 ± 0.13 | pci/g |
| Uranium 235..... ..... | | | | | | |
| Uranium 238..... . | 0.55 ± 0.10 | pci/g | 0.64 ± 0.11 | pci/g | 0.65 ± 0.10 | pci/g |
| Strontium 89, 90.... ..... | | | | | | |
| Plutonium 239, 240.... ..... | 0.01 ± 0.03 | pci/g | 0.01 ± 0.02 | pci/g | 0.04 ± 0.03 | pci/g |
| Americium 241..... | 0.00 ± 0.03 | pci/g | 0.00 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g |
| Cesium 137..... ..... | | | | | | |
| Tritium..... | 0.22 ± 0.16 | pci/ml | 0.10 ± 0.16 | pci/ml | -0.05 ± 0.15 | pci/ml |
| % Moisture..... | 7.4 | | 3.8 | | 4.7 | |

| Sample Information | #174 CS008 | #174 CS009 | #174 CS006 |
|---|---|---|---|
| RFW Batch ID: | 2000-103-100 | 2000-104-100 | 2000-105-100 |
| Customer ID: | BH88A005 | BH88A006 | BH88A007 |
| Laboratory ID: | 9299-28380-8-4 | 9299-28380-8-5 | 9299-28380-8-6 |
| Matrix: | Soil | Soil | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha ..... | 16 ± 9 | pci/g | 12 ± 8 | pci/g | 20 ± 9 | pci/g |
| Gross Beta..... | 15 ± 5 | pci/g | 24 ± 6 | pci/g | 3[illegible] ± 6 | pci/g |
| Uranium 233, 234..... | 0.63 ± 0.09 | pci/g | 0.72 ± 0.11 | pci/g | 0.90 ± 0.12 | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... | 0.65 ± 0.09 | pci/g | 0.84 ± 0.12 | pci/g | 0.77 ± 0.11 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... | 0.01 ± 0.03 | pci/g | 0.01 ± 0.03 | pci/g | 0.07 ± 0.05 | pci/g |
| Americium 241..... | -0.01 ± 0.03 | pci/g | 0.00 ± 0.03 | pci/g | -0.01 ± 0.02 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... .... | 0.01 ± 0.15 | pci/ml | 0.06 ± 0.15 | pci/ml | 0.10 ± 0.16 | pci/ml |
| % Moisture..... | 5.1 | | 4.0 | | 3.3 | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

| Sample Information | #174 CS007 | #174 CS012 | #170? CS016 |
|---|---|---|---|
| RFW Batch ID: | 2000-106-100 | 2000-107-100 | 2000-108-100 |
| Customer ID: | BH88A008 | BH88A009 | BH88A02[illegible] |
| Laboratory ID: | 9299-28380-8-7 | 9299-28380-8-8 | 9299-28412-2-[illegible] |
| Matrix: | Soil | Soil | Soil |

Radio Chemistry

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha | 13 ± 8 | pCi/g | 26 ± 10 | pCi/g | 21 ± 9 | pCi/g |
| Gross Beta | 24 ± 6 | pCi/g | 29 ± 6 | pCi/g | 15 ± 5 | pCi/g |
| Uranium 233, 234 | 0.59 ± 0.09 | pCi/g | 0.80 ± 0.1 | pCi/g | 0.58 ± 0.09 | pCi/g |
| Uranium 235 | | | | | | |
| Uranium 238 | 0.66 ± 0.09 | pCi/g | 0.69 ± 0.10 | pCi/g | 0.50 ± 0.09 | pCi/g |
| Strontium 89, 90 | | | | | | |
| Plutonium 239, 240 | 0.01 ± [illegible] | pCi/g | 0.01 ± [illegible] | pCi/g | 0.02 ± [illegible] | pCi/g |
| Americium 241 | -0.01 ± 0.02 | pCi/g | -0.01 ± 0.02 | pCi/g | 0.03 ± 0.05 | pCi/g |
| Cesium 137 | | | | | | |
| Tritium | 0.08 ± 0.16 | pCi/ml | 0.05 ± 0.15 | pCi/ml | 0.21 ± 0.16 | pCi/ml |
| Moisture | 4.0 | | 5.1 | | 3.1 | |

| Sample Information | #170? CS017 |
|---|---|
| RFW Batch ID: | 2000-109-100 |
| Customer ID: | BH88A022 |
| Laboratory ID: | 9299-28412-2-[illegible] |
| Matrix: | Soil |

Radio Chemistry

| | | |
|---|---|---|
| Gross Alpha | 15 ± 8 | pCi/g |
| Gross Beta | 24 ± 5 | pCi/g |
| Uranium 233, 234 | 0.70 ± 0.1[illegible] | pCi/g |
| Uranium 235 | | |
| Uranium 238 | 0.70 ± 0.11 | pCi/g |
| Strontium 89, 90 | | |
| Plutonium 239, 240 | 0.05 ± 0.03 | pCi/g ✓ |
| Americium 241 | -0.01 ± 0.03 | pCi/g |
| Cesium 137 | | |
| Tritium | 0.07 ± 0.15 | pCi/ml |
| % Moisture | 4.5 | |

Accu-Labs Research, Inc.
5 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423 2766

January 6, 1989

Ms. Peg Beatty
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Ms. Beatty,

Enclosed are the analytical reports in the requested format as per Contract LL-0421 for the following ALR Nos.:

9612-28492-4
9612-28467-10

These reports cover the Radiochemistry portion only.

A floppy disk is being sent under seperate cover which contains all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

Bud Summers
Radiochemistry
Supervisor

BS/dh

[illegible] LABS RESEARCH, [illegible]
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: [illegible] Client: ROCKWELL ROCKY FLATS [illegible] Date: [illegible]

| | #177 CS034 | #177 CS035 | #177 CS036 |
|---|---|---|---|
| RFW Batch ID: | [illegible] | [illegible] | [illegible] |
| Customer ID: | [illegible] | [illegible] | [illegible] |
| Laboratory ID: | [illegible] | [illegible] | [illegible] |
| Matrix | Soil | Soil | Soil |
| Gross Alpha | [illegible] ± 15 | 45 ± 12 | [illegible] ± [illegible] |
| Gross Beta | [illegible] ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Uranium 233, 234 | [illegible] ± 0.1 | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Uranium 235 | | | |
| Uranium 238 | [illegible] ± [illegible] | 1 ± 1.2 | [illegible] ± [illegible] |
| Strontium 89, 90 | | | |
| Plutonium 239, 240 | [illegible] ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Americium 241 | [illegible] ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Cesium 137 | | | |
| Tritium | [illegible] ± [illegible] | 3 ± [illegible] | [illegible] ± [illegible] |
| % Moisture | [illegible] | [illegible] | [illegible] |

| | #177 CS037 |
|---|---|
| RFW Batch ID: | [illegible] |
| Customer ID: | [illegible] |
| Laboratory ID: | [illegible] |
| Matrix | Soil |
| Gross Alpha | [illegible] ± [illegible] |
| Gross Beta | [illegible] ± [illegible] |
| Uranium 233, 234 | [illegible] ± [illegible] |
| Uranium 235 | |
| Uranium 238 | [illegible] ± [illegible] |
| Strontium 89, 90 | |
| Plutonium 239, 240 | [illegible] ± [illegible] |
| Americium 241 | [illegible] ± [illegible] |
| Cesium 137 | |
| Tritium | [illegible] ± [illegible] |
| Moisture | [illegible] |

[illegible] LABS [illegible], INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: [illegible] ROCKY FLATS) Page: 1

| | #176 CS031 | #176 CS028 | #176 CS029 |
|---|---|---|---|
| RFW Batch ID: | [illegible] | [illegible] | [illegible] |
| Customer ID: | [redacted] | [redacted] | [redacted] |
| Laboratory ID. | [illegible] | [illegible] | [illegible] |
| Matrix. | Soil | Soil | Soil |
| Gross Alpha | 29 ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Gross Beta | 32 ± 6 | [illegible] ± 5 | [illegible] ± 5 |
| Uranium 233, 234 | 0.74 ± 0.16 | [illegible] ± 0.18 | [illegible] ± 0.14 |
| Uranium 235 | | | |
| Uranium 238 | 0.50 ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Strontium 89, 90 | | | |
| Plutonium 239, 240 | [illegible] ± [illegible] | [illegible] ± 0.16 | [illegible] ± [illegible] |
| Americium 241 | [illegible] ± [illegible] | [illegible] ± 0.08 | [illegible] ± [illegible] |
| Cesium 137 | | | |
| Tritium | [illegible] ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| % Moisture | [illegible] | [illegible] | [illegible] |

| | #176 CS033 | #175 CS018 | #175 CS019 |
|---|---|---|---|
| RFW Batch ID: | [illegible] | [illegible] | [illegible] |
| Customer ID: | [illegible] | [illegible] | [illegible] |
| Laboratory ID: | [illegible] | [illegible] | [illegible] |
| Matrix: | Soil | Soil | Soil |
| Gross Alpha | [illegible] ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Gross Beta | [illegible] ± 6 | [illegible] ± [illegible] | [illegible] ± 7 |
| Uranium 233, 234 | [illegible] ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Uranium 235 | | | |
| Uranium 238 | [illegible] ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Strontium 89, 90 | | | |
| Plutonium 239, 240 | 0.44 ± 0.15 | [illegible] ± [illegible] | [illegible] ± [illegible] |
| Americium 241 | 0.21 ± 0.08 | [illegible] ± 0.04 | [illegible] ± [illegible] |
| Cesium 137 | | | |
| Tritium | [illegible] ± [illegible] | [illegible] ± [illegible] | [illegible] ± [illegible] |
| % Moisture | [illegible] | [illegible] | [illegible] |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

| | #175 CS021 | | FB | | | | |
|---|---|---|---|---|---|---|---|
| RFW Batch ID: | 2000-139-100 | | 2000-140-100 | | 2000-141-100 | | |
| Customer ID: | BH88A039 | | BH88A040 + MS, MSD | | BH88A041 | | |
| Laboratory ID: | 9612-28467-10-7 | | 9612-28467-10-8 | | 9612-28467-10-9 | | |
| Matrix: | Soil | | Soil | | Water | | |
| Gross Alpha..... .. | 5[illegible] ± 16 | pci/g | 37 ± 14 | pci/g | 0 ± 1 | pci/l | |
| Gross Beta..... | [illegible]6 ± 7 | pci/g | 38 ± 7 | pci/g | [illegible] ± 2 | pci/l | |
| Uranium 233, 234..... . .. | 0.70 ± 0.17 | pci/g | [illegible].0 ± 0.2 | pci/g | -[illegible].1 ± 0.1 | pci/l | |
| Uranium 235..... . ..... | | | | | | | |
| Uranium 238... .. .. . .. | 0.77 ± [illegible].17 | pci/g | 0.95 ± 0.22 | pci/g | 0.0 ± 0.1 | pci/l | |
| Strontium 89, 90..... ... . | | | | | | | |
| Plutonium 239, 240 .. ..... | [illegible].42 ± [illegible].18 | pci/g | [illegible].18 ± 0.20 | pci/g | [illegible].0 ± [illegible] | pci/l | |
| Americium 241. . ..... ... | [illegible].15 ± 0.[illegible]8 | pci/g | 0.08 ± [illegible].07 | pci/g | [illegible].0 ± 0.1 | pci/l | |
| Cesium 137.. ..... ..... | | | | | | | |
| Tritium.. .. .... ..... . | 12 ± 0.16 | pci/ml | [illegible].13 ± [illegible] 16 | pci/ml | 170 ± 169 | pci/l | |
| % Moisture . ..... . . | 5.0 | | 6.0 | | | | |

| | #175 CS020 |
|---|---|
| RFW Batch ID: | 2000-142-100 |
| Customer ID: | BH88A042 |
| Laboratory ID: | 9612-28467-[illegible] |
| Matrix: | Soil |
| Gross Alpha..... ..... | 35 ± 14 pci/g |
| Gross Beta.. .. ..... ... | 39 ± [illegible] pci/g |
| Uranium 233, 234..... | 0.75 ± 0.18 pci/g |
| Uranium 235..... ..... | |
| Uranium 238 .. ..... | 0.30 ± 0.18 pci/g |
| Strontium 89, 90..... | |
| Plutonium 239, 240..... | 0.06 ± [illegible].14 pci/g |
| Americium 241..... | 0.06 ± [illegible].06 pci/g |
| Cesium 137 ..... ..... | |
| Tritium ..... | 0.04 ± [illegible] pci/ml |
| % Moisture ..... | 6.0 |

174
170
176
177
179

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | | | |
|---|---|---|---|---|
| Batch ID: | 8810-036-001 | 8810-036-002 | 8810-036-003 | 8810-036-004 |
| Customer ID. | BH88A001 | BH88A002 | BH88A003 | BH88A004 |
| Collection Date | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 99 % | 112% | 121% | 101% |
| Bromofluorobenzene: | 98 % | 76 % | 77 % | 102% |
| 1,2-Dichloroethane-d4. | 93 % | 96 % | 96 % | 101% |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 11 U | 11 U | 11 U |
| Bromomethane | 10 U | 11 U | 11 U | 11 U |
| Vinyl Chloride | 10 U | 11 U | 11 U | 11 U |
| Chloroethane | 10 U | 11 U | 11 U | 11 U |
| Methylene Chloride | 7 0 B | 12 B | 7 0 B | 20 B |
| Acetone | 10 U | 32 | 11 U | 11 U |
| Carbon Disulfide | 5 0 U | 5.6 U | 5 4 U | 5 4 U |
| 1,1-Dichloroethene | 5 0 U | 5.6 U | 5 4 U | 5 4 U |
| 1,1-Dichloroethane | 5 0 U | 5.6 U | 5 4 U | 5 4 U |
| 1,2-Dichloroethene (total) | NR | NR | NR | NR |
| Chloroform | 5 0 U | 5.6 U | 5.4 U | 5 4 U |
| 1,2-Dichloroethane | 5 0 U | 5.6 U | 5 4 U | 5 4 U |
| 2-Butanone | 10 U | 11 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.0 U | 160 | 5.4 U | 5 4 U |
| Carbon Tetrachloride | 5 0 U | 5.6 U | 5.4 U | 5 4 U |
| Vinyl Acetate | 10 U | 11 U | 11 U | 11 U |
| Bromodichloromethane | 5.0 U | 5.6 U | 5.4 U | 5 4 U |
| 1,2-Dichloropropane | 5 0 U | 5.6 U | 5 4 U | 5 4 U |
| cis-1,3-Dichloropropene | 5 0 U | 5.6 U | 5.4 U | 5 4 U |
| Trichloroethene | 5 0 U | 5.6 U | 5 4 U | 5 4 U |
| Dibromochloromethane | 5 0 U | 5 6 U | 5 4 U | 5 4 U |
| 1,1,2-Trichloroethane | 5 0 U | 5.6 U | 5.4 U | 5 4 U |
| Benzene | 5 0 U | 5.6 U | 5 4 U | 5 4 U |
| Trans-1,3-Dichloropropene | 5 0 U | 5.6 U | 5.4 U | 5 4 U |
| 2-Chloroethylvinylether | 10 U | 11 U | 11 U | 11 U |
| Bromoform | 5 0 U | 5 6 U | 5 4 U | 5 4 U |
| 4-Methyl-2-pentanone | 10 U | 11 U | 11 U | 11 U |
| 2-Hexanone | 10 U | 11 U | 11 U | 11 U |
| Tetrachloroethene | 5 0 U | 4 0 J | 2.0 J | 94 |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.6 U | 5 4 U | 5 4 U |
| Toluene | 5.0 U | 4.0 J | 2 0 J | 5 4 U |
| Chlorobenzene | 5 0 U | 5 6 U | 5 4 U | 5 4 U |
| Ethylbenzene | 5 0 U | 5.6 U | 5.4 U | 5 4 U |
| Styrene | 5 0 U | 5.6 U | 5 4 U | 5 4 U |
| Total Xylenes | 5 0 U | 3 0 J | 5 4 U | 5 4 U |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | #174 [illegible] | #174 [illegible] | #174 [illegible] | #174 [illegible] |
|---|---|---|---|---|
| Batch ID | 8810-036-005 | 8810-036-006 | 8810-036-007 | 8810-036-008 |
| Customer ID· | BH88A005 | BH88A006 | BH88A007 | BH88A008 |
| Collection Date. | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 115% | 115% | 112% | 116% |
| Bromofluorobenzene | 81 % | 81 % | 80 % | 79 % |
| 1,2-Dichloroethane-d4: | 94 % | 96 % | 93 % | 93 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane..... | 11 U | 11 U | 11 U | 11 U |
| Bromomethane..... | 11 U | 11 U | 11 U | 11 U |
| Vinyl Chloride..... | 11 U | 11 U | 11 U | 11 U |
| Chloroethane..... .. | 11 U | 11 U | 11 U | 11 U |
| Methylene Chloride..... | 5.0 JB | 7.0 B | 26 B | 22 B |
| Acetone..... | 11 U | 7.0 J | 11 U | 11 U |
| Carbon Disulfide..... . . | 5.5 U | 5.3 U | 5 4 U | 5 6 U |
| 1,1-Dichloroethene..... | 5.5 U | 5.3 U | 5 4 U | 5 6 U |
| 1,1-Dichloroethane... ..... | 5 5 U | 5.3 U | 5.4 U | 5 6 U |
| 1,2-Dichloroethene (total). . . | NR | NR | NR | NR |
| Chloroform..... . | 5 5 U | 5.3 U | 5 4 U | 5 6 U |
| 1,2-Dichloroethane..... | 5 5 U | 5.3 U | 5.4 U | 5 6 U |
| 2-Butanone..... . | 11 U | 11 U | 11 U | 11 U |
| 1,1,1-Trichloroethane..... | 5.5 U | 5.3 U | 5 4 U | 5 6 U |
| Carbon Tetrachloride..... | 5 5 U | 5.3 U | 5 4 U | 5 6 U |
| Vinyl Acetate..... .. | 11 U | 11 U | 11 U | 11 U |
| Bromodichloromethane..... | 5 5 U | 5.3 U | 5.4 U | 5 6 U |
| 1,2-Dichloropropane..... | 5 5 U | 5.3 U | 5.4 U | 5.6 U |
| cis-1,3-Dichloropropene..... . | 5 5 U | 5.3 U | 5 4 U | 5 6 U |
| Trichloroethene..... | 5.5 U | 5.3 U | 5.4 U | 5.6 U |
| Dibromochloromethane.... ..... | 5 5 U | 5.3 U | 5.4 U | 5 6 U |
| 1,1,2-Trichloroethane..... . .. | 5.5 U | 5.3 U | 5 4 U | 5 6 U |
| Benzene..... | 5.5 U | 5.3 U | 5.4 U | 5 6 U |
| Trans-1,3-Dichloropropene .. .. | 5.5 U | 5.3 U | 5 4 U | 5 6 U |
| 2-Chloroethylvinylether . ... | 11 U | 11 U | 11 U | 11 U |
| Bromoform ..... . | 5 5 U | 5.3 U | 5 4 U | 5 6 U |
| 4-Methyl-2-pentanone..... . | 11 U | 11 U | 11 U | 11 U |
| 2-Hexanone ..... ..... | 11 U | 11 U | 11 U | 11 U |
| Tetrachloroethene..... .... | 5 5 U | 5.3 U | 5 4 U | 5 6 U |
| 1,1,2,2-Tetrachloroethane . | 5.5 U | 5.3 U | 5 4 U | 5 6 U |
| Toluene..... .... | 5 5 U | 2.0 J | 1.0 J | 1 0 J |
| Chlorobenzene..... .. .. | 5 5 U | 5.3 U | 5 4 U | 5 6 U |
| Ethylbenzene..... . | 5 5 U | 5.3 U | 5.4 U | 5 6 U |
| Styrene..... | 5.5 U | 5.3 U | 5 4 U | 5.6 U |
| Total Xylenes..... | 5.5 U | 1.0 J | 5 4 U | 5 6 U |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | #174 | TR | #174 | #174 CS013 |
|---|---|---|---|---|
| Batch ID | 8810-036-009 | ~~8810-036-010~~ | 8810-036-011 | 8810-036-012 |
| Customer ID | BH88A009 | ~~BH88A010~~ | BH88A011 | BH88A012 |
| Collection Date: | 10/12/88 | ~~10/13/88~~ | 10/13/88 | 10/13/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 109% | 100% | 117% | 121% |
| Bromofluorobenzene | 85 % | 98 % | 75 % | 69 % |
| 1,2-Dichloroethane-d4: | 95 % | 97 % | 97 % | 92 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 10 U | 11 U | 11 U |
| Bromomethane | 11 U | 10 U | 11 U | 11 U |
| Vinyl Chloride | 11 U | 10 U | 11 U | 11 U |
| Chloroethane | 11 U | 10 U | 11 U | 11 U |
| Methylene Chloride | 32 B | 8 0 B | 31 B | 36 B |
| Acetone | 4.0 J | 10 U | 11 U | 10 J |
| Carbon Disulfide | 5.4 U | 5.0 U | 5.5 U | 5 4 U |
| 1,1-Dichloroethene | 5.4 U | 5.0 U | 5.5 U | 5.4 U |
| 1,1-Dichloroethane | 5 4 U | 5.0 U | 5.5 U | 5 4 U |
| 1,2-Dichloroethene (total) | NR | NR | NR | NR |
| Chloroform | 5.4 U | 5 0 U | 5 5 U | 5 4 U |
| 1,2-Dichloroethane | 5 4 U | 5.0 U | 5 5 U | 5 4 U |
| 2-Butanone | 11 U | 10 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.4 U | 5.0 U | 5.5 U | 5 4 U |
| Carbon Tetrachloride | 5 4 U | 5.0 U | 5.5 U | 5 4 U |
| Vinyl Acetate | 11 U | 10 U | 11 U | 11 U |
| Bromodichloromethane | 5.4 U | 5.0 U | 5.5 U | 5.4 U |
| 1,2-Dichloropropane | 5.4 U | 5.0 U | 5 5 U | 5 4 U |
| cis-1,3-Dichloropropene | 5 4 U | 5.0 U | 5.5 U | 5 4 U |
| Trichloroethene | 5.4 U | 5.0 U | 5.5 U | 5 4 U |
| Dibromochloromethane | 5.4 U | 5.0 U | 5.5 U | 5 4 U |
| 1,1,2-Trichloroethane | 5.4 U | 5.0 U | 5.5 U | 5.4 U |
| Benzene | 5.4 U | 5.0 U | 5.5 U | 5 4 U |
| Trans-1,3-Dichloropropene | 5 4 U | 5.0 U | 5.5 U | 5 4 U |
| 2-Chloroethylvinylether | 11 U | 10 U | 11 U | 11 U |
| Bromoform | 5 4 U | 5.0 U | 5 5 U | 5 4 U |
| 4-Methyl-2-pentanone | 11 U | 10 U | 11 U | 11 U |
| 2-Hexanone | 11 U | 10 U | 11 U | 11 U |
| Tetrachloroethene | 5 4 U | 5.0 U | 5 5 U | 5 4 U |
| 1,1,2,2-Tetrachloroethane | 5 4 U | 5.0 U | 5.5 U | 5 4 U |
| Toluene | 5 4 U | 5 0 U | 1.0 J | 3 0 J |
| Chlorobenzene | 5 4 U | 5.0 U | 5.5 U | 5 4 U |
| Ethylbenzene | 5.4 U | 5.0 U | 5 5 U | 5 4 U |
| Styrene | 5.4 U | 5 0 U | 5.5 U | 5 4 U |
| Total Xylenes | 5.4 U | 5.0 U | 5.5 U | 5 4 U |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

**Sample Information**

#174
CS013

| | | | | |
|---|---|---|---|---|
| Batch ID: | 8810-036-012 DUP | 8810-036-013 | 8810-036-013 MS | 8810-036-013 MSD |
| Customer ID. | BH88A012 | BH88A013 | BH88A013 | BH88A013 |
| Collection Date: | 10/13/88 | 10/13/88 | 10/13/88 | 10/13/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8. | 143% | 126% | 138% | 132% |
| Bromofluorobenzene | 77 % | 81 % | 74 % | 84 % |
| 1,2-Dichloroethane-d4 | 89 % | 102% | 110% | 119% |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 11 U | 11 U | 11 U |
| Bromomethane | 11 U | 11 U | 11 U | 11 U |
| Vinyl Chloride | 11 U | 11 U | 11 U | 11 U |
| Chloroethane | 11 U | 11 U | 11 U | 11 U |
| Methylene Chloride | 17 B | 15 B | 15 B | 16 B |
| Acetone | 11 U | 11 U | 13 | 18 |
| Carbon Disulfide | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| 1,1-Dichloroethene | 5.4 U | 5.4 U | 88 % | 95 % |
| 1,1-Dichloroethane | 5 4 U | 5.4 U | 5.4 U | 5 4 U |
| 1,2-Dichloroethene (total) | NR | NR | NR | NR |
| Chloroform | 5.4 U | 5.4 U | 5 4 U | 5 4 U |
| 1,2-Dichloroethane | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| 2-Butanone | 11 U | 11 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5 4 U | 5 4 U | 5 4 U | 5 4 U |
| Carbon Tetrachloride | 5 4 U | 5.4 U | 5.4 U | 5 4 U |
| Vinyl Acetate | 11 U | 11 U | 11 U | 11 U |
| Bromodichloromethane | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| 1,2-Dichloropropane | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| cis-1,3-Dichloropropene | 5 4 U | 5.4 U | 5.4 U | 5 4 U |
| Trichloroethene | 5.4 U | 5.4 U | 72 % | 73 % |
| Dibromochloromethane | 5.4 U | 5.4 U | 5 4 U | 5 4 U |
| 1,1,2-Trichloroethane | 5 4 U | 5.4 U | 5 4 U | 5 4 U |
| Benzene | 5 4 U | 5 4 U | 92 % | 95 % |
| Trans-1,3-Dichloropropene | 5.4 U | 5.4 U | 5.4 U | 5 4 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 11 U | 11 U |
| Bromoform | 5 4 U | 5.4 U | 5 4 U | 5 4 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 11 U | 11 U |
| 2-Hexanone | 11 U | 11 U | 11 U | 11 U |
| Tetrachloroethene | 5 4 U | 5.4 U | 5 4 U | 5 4 U |
| 1,1,2,2-Tetrachloroethane | 5 4 U | 5.4 U | 5.4 U | 5 4 U |
| Toluene | 5 0 J | 1.0 J | 111 % | 112 % |
| Chlorobenzene | 5.4 U | 5.4 U | 84 % | 90 % |
| Ethylbenzene | 1 0 J | 5.4 U | 5.4 U | 5 4 U |
| Styrene | 5 4 U | 5.4 U | 5.4 U | 5 4 U |
| Total Xylenes | 5.4 U | 5.4 U | 5.4 U | 5 4 U |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | #174 CS011 | CS0 | FB | #174 CS014 |
|---|---|---|---|---|
| Batch ID | 8810-036-014 | 8810-036-014 DUP | 8810-036-015 | 8810-036-016 |
| Customer ID. | BH88A014 | BH88A014 | BH88A015 | BH88A016 |
| Collection Date: | 10/13/88 | 10/13/88 | 10/13/88 | 10/13/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8 | 137% | 139% | 99 % | 114% |
| Bromofluorobenzene: | 59 % | 69 % | 98 % | 81 % |
| 1,2-Dichloroethane-d4 | 89 % | 100% | 99 % | 95 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 11 U | 10 U | 11 U |
| Bromomethane | 11 U | 11 U | 10 U | 11 U |
| Vinyl Chloride | 11 U | 11 U | 10 U | 11 U |
| Chloroethane | 11 U | 11 U | 10 U | 11 U |
| Methylene Chloride | 40 B | 24 B | 6.0 B | 8 0 B |
| Acetone | 7 0 J | 11 U | 10 U | 11 U |
| Carbon Disulfide | 5 3 U | 5.4 U | 5.0 U | 5 3 U |
| 1,1-Dichloroethene | 5 3 U | 5 4 U | 5 0 U | 5 3 U |
| 1,1-Dichloroethane | 5.3 U | 5.4 U | 5.0 U | 5 3 U |
| 1,2-Dichloroethene (total) | NR | NR | NR | NR |
| Chloroform | 5.3 U | 5.4 U | 3 0 J | 5 3 U |
| 1,2-Dichloroethane | 5 3 U | 5.4 U | 5.0 U | 5.3 U |
| 2-Butanone | 11 U | 11 U | 10 U | 11 U |
| 1,1,1-Trichloroethane | 5.3 U | 5 4 U | 5 0 U | 5 3 U |
| Carbon Tetrachloride | 5.3 U | 5.4 U | 5.0 U | 5.3 U |
| Vinyl Acetate | 11 U | 11 U | 10 U | 11 U |
| Bromodichloromethane | 5.3 U | 5 4 U | 5.0 U | 5 3 U |
| 1,2-Dichloropropane | 5.3 U | 5.4 U | 5.0 U | 5 3 U |
| cis-1,3-Dichloropropene | 5 3 U | 5 4 U | 5 0 U | 5 3 U |
| Trichloroethene | 5.3 U | 5.4 U | 5.0 U | 5 3 U |
| Dibromochloromethane | 5.3 U | 5.4 U | 5.0 U | 5 3 U |
| 1,1,2-Trichloroethane | 5.3 U | 5 4 U | 5.0 U | 5 3 U |
| Benzene | 5.3 U | 5.4 U | 5.0 U | 5 3 U |
| Trans-1,3-Dichloropropene | 5.3 U | 5.4 U | 5.0 U | 5 3 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 10 U | 11 U |
| Bromoform | 5.3 U | 5.4 U | 5 0 U | 5 3 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 10 U | 11 U |
| 2-Hexanone | 11 U | 11 U | 10 U | 11 U |
| Tetrachloroethene | 5.3 U | 5.4 U | 5.0 U | 5 3 U |
| 1,1,2,2-Tetrachloroethane | 5.3 U | 5.4 U | 5.0 U | 5 3 U |
| Toluene | 1.0 J | 2.0 J | 5.0 U | 2 0 J |
| Chlorobenzene | 5.3 U | 5.4 U | 5 0 U | 5 3 U |
| Ethylbenzene | 5.3 U | 5.4 U | 5 0 U | 5 3 U |
| Styrene | 5 3 U | 5.4 U | 5.0 U | 5 3 U |
| Total Xylenes | 5.3 U | 5.4 U | 5 0 U | 2 0 J |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

| Sample Information | #171 CS010 | #174 CS001 | TB | #170 CS016 |
|---|---|---|---|---|
| Batch ID: | 8810-036-017 | 8810-036-019 | 8810-051-001 | 8810-051-002 |
| Customer ID. | BH88A017 | BH88A019 | BH88A020 | BH88A021 |
| Collection Date: | 10/13/88 | 10/13/88 | 10/14/88 | 10/14/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8 | 116% | 113% | 99 % | 117% |
| Bromofluorobenzene | 80 % | 78 % | 101% | 80 % |
| 1,2-Dichloroethane-d4. | 103% | 107% | 97 % | 93 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U | 11 U |
| Bromomethane | 10 U | 10 U | 10 U | 11 U |
| Vinyl Chloride | 10 U | 10 U | 10 U | 11 U |
| Chloroethane | 10 U | 10 U | 10 U | 11 U |
| Methylene Chloride | 7 0 B | 9.0 B | 2.0 JB | 4 0 JB |
| Acetone | 10 U | 5.0 J | 10 U | 11 U |
| Carbon Disulfide | 5.1 U | 5.2 U | 5 0 U | 5 3 U |
| 1,1-Dichloroethene | 5 1 U | 5 2 U | 5.0 U | 5 3 U |
| 1,1-Dichloroethane | 5.1 U | 5.2 U | 5.0 U | 5 3 U |
| 1,2-Dichloroethene (total) | NR | NR | NR | NR |
| Chloroform | 5 1 U | 5.2 U | 5 0 U | 5.3 U |
| 1,2-Dichloroethane | 5 1 U | 5.2 U | 5.0 U | 5 3 U |
| 2-Butanone | 10 U | 10 U | 10 U | 11 U |
| 1,1,1-Trichloroethane | 5.1 U | 5.2 U | 5.0 U | 5 3 U |
| Carbon Tetrachloride | 5.1 U | 5.2 U | 5.0 U | 5 3 U |
| Vinyl Acetate | 10 U | 10 U | 10 U | 11 U |
| Bromodichloromethane | 5 1 U | 5.2 U | 5.0 U | 5 3 U |
| 1,2-Dichloropropane | 5 1 U | 5.2 U | 5.0 U | 5 3 U |
| cis-1,3-Dichloropropene | 5.1 U | 5.2 U | 5 0 U | 5 3 U |
| Trichloroethene | 5.1 U | 5.2 U | 5 0 U | 5 3 U |
| Dibromochloromethane | 5 1 U | 5.2 U | 5 0 U | 5 3 U |
| 1,1,2-Trichloroethane | 5.1 U | 5.2 U | 5.0 U | 5 3 U |
| Benzene | 5.1 U | 5.2 U | 5.0 U | 5 3 U |
| Trans-1,3-Dichloropropene | 5 1 U | 5.2 U | 5.0 U | 5 3 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U | 11 U |
| Bromoform | 5.1 U | 5.2 U | 5 0 U | 5 3 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U | 11 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 11 U |
| Tetrachloroethene | 5.1 U | 5.2 U | 5.0 U | 5 3 U |
| 1,1,2,2-Tetrachloroethane | 5.1 U | 5.2 U | 5 0 U | 5 3 U |
| Toluene | 1 0 J | 2.0 J | 5 0 U | 5 3 U |
| Chlorobenzene | 5 1 U | 5.2 U | 5.0 U | 5.3 U |
| Ethylbenzene | 5.1 U | 5.2 U | 5.0 U | 5 3 U |
| Styrene | 5 1 U | 5.2 U | 5 0 U | 5 3 U |
| Total Xylenes | 2.0 J | 2.0 J | 5.0 U | 5 3 U |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | #170 CS017 | | | TB |
|---|---|---|---|---|
| Batch ID: | 8810-051-003 | 8810-051-003 MS | 8810-051-003 MSD | 8810-062-001 |
| Customer ID. | BH88A022 | BH88A022 | BH88A022 | BH88A023 |
| Collection Date | 10/14/88 | 10/14/88 | 10/14/88 | 10/19/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8· | 114% | 117% | 115% | 98 % |
| Bromofluorobenzene: | 85 % | 80 % | 80 % | 101% |
| 1,2-Dichloroethane-d4. | 95 % | 97 % | 94 % | 97 % |

**Analytes**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Chloromethane | 11 | U | 11 | U | 11 | U | 10 | U |
| Bromomethane | 11 | U | 11 | U | 11 | U | 10 | U |
| Vinyl Chloride | 11 | U | 11 | U | 11 | U | 10 | U |
| Chloroethane | 11 | U | 11 | U | 11 | U | 10 | U |
| Methylene Chloride | 3.0 | JB | 18 | B | 18 | B | 3.0 | JB |
| Acetone | 12 | | 4.0 | J | 4.0 | J | 10 | U |
| Carbon Disulfide | 5.3 | U | 11 | | 12 | | 5 0 | U |
| 1,1-Dichloroethene | 5 3 | U | 85 | % | 90 | % | 5 0 | U |
| 1,1-Dichloroethane | 5.3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| 1,2-Dichloroethene (total) | | NR | | NR | | NR | | NR |
| Chloroform | 5.3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| 1,2-Dichloroethane | 5 3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| 2-Butanone | 11 | U | 11 | U | 11 | U | 10 | U |
| 1,1,1-Trichloroethane | 5 3 | U | 5.3 | U | 5 3 | U | 5 0 | U |
| Carbon Tetrachloride | 5.3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| Vinyl Acetate | 11 | U | 11 | U | 11 | U | 10 | U |
| Bromodichloromethane | 5.3 | U | 5.3 | U | 5.3 | U | 5.0 | U |
| 1,2-Dichloropropane | 5 3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| cis-1,3-Dichloropropene | 5.3 | U | 5.3 | U | 5 3 | U | 5 0 | U |
| Trichloroethene | 5.3 | U | 81 | % | 87 | % | 5 0 | U |
| Dibromochloromethane | 5.3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| 1,1,2-Trichloroethane | 5.3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| Benzene | 5.3 | U | 85 | % | 90 | % | 5 0 | U |
| Trans-1,3-Dichloropropene | 5.3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| 2-Chloroethylvinylether | 11 | U | 11 | U | 11 | U | 10 | U |
| Bromoform | 5.3 | U | 5.3 | U | 5.3 | U | 5.0 | U |
| 4-Methyl-2-pentanone | 11 | U | 11 | U | 11 | U | 10 | U |
| 2-Hexanone | 11 | U | 11 | U | 11 | U | 10 | U |
| Tetrachloroethene. | 5 3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| 1,1,2,2-Tetrachloroethane | 5 3 | U | 5.3 | U | 5 3 | U | 5 0 | U |
| Toluene | 1 0 | J | 96 | % | 99 | % | 5.0 | U |
| Chlorobenzene | 5.3 | U | 83 | % | 87 | % | 5 0 | U |
| Ethylbenzene | 5.3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| Styrene | 5.3 | U | 5.3 | U | 5.3 | U | 5 0 | U |
| Total Xylenes | 5.3 | U | 2.0 | J | 5.3 | U | 5.0 | U |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | #176 CS024 | #176 CS025 | #176 CS026 | |
|---|---|---|---|---|
| Batch ID | 8810-062-002 | 8810-062-003 | 8810-062-004 | 8810-062-005 |
| Customer ID. | BH88A024 | BH88A025 | BH88A026 | BH88A027 |
| Collection Date | 10/19/88 | 10/19/88 | 10/19/88 | 10/19/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8 | 109% | 108% | 111% | 111% |
| Bromofluorobenzene | 92 % | 82 % | 78 % | 82 % |
| 1,2-Dichloroethane-d4: | 96 % | 100% | 98 % | 95 % |

**Analytes**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Chloromethane | 11 | U | 11 | U | 11 | U | 11 | U |
| Bromomethane | 11 | U | 11 | U | 11 | U | 11 | U |
| Vinyl Chloride | 11 | U | 11 | U | 11 | U | 11 | U |
| Chloroethane | 11 | U | 11 | U | 11 | U | 11 | U |
| Methylene Chloride | 25 | B | 20 | B | 18 | B | 13 | B |
| Acetone | 14 | | 10 | J | 12 | | 17 | |
| Carbon Disulfide | 5.6 | U | 5.3 | U | 5.4 | U | 5 3 | U |
| 1,1-Dichloroethene | 5 6 | U | 5.3 | U | 5.4 | U | 5 3 | U |
| 1,1-Dichloroethane | 5 6 | U | 5.3 | U | 5.4 | U | 5 3 | U |
| 1,2-Dichloroethene (total) | | NR | | NR | | NR | | NR |
| Chloroform | 1.0 | J | 1.0 | J | 1.0 | J | 5 3 | U |
| 1,2-Dichloroethane | 5.6 | U | 5.3 | U | 5.4 | U | 5 3 | U |
| 2-Butanone | 11 | U | 11 | U | 11 | U | 11 | U |
| 1,1,1-Trichloroethane | 5 6 | U | 5.3 | U | 5.4 | U | 5.3 | U |
| Carbon Tetrachloride | 5.6 | U | 5.3 | U | 5 4 | U | 5 3 | U |
| Vinyl Acetate | 11 | U | 11 | U | 11 | U | 11 | U |
| Bromodichloromethane | 5.6 | U | 5.3 | U | 5.4 | U | 5.3 | U |
| 1,2-Dichloropropane | 5.6 | U | 5.3 | U | 5.4 | U | 5.3 | U |
| cis-1,3-Dichloropropene | 5.6 | U | 5.3 | U | 5 4 | U | 5 3 | U |
| Trichloroethene | 5.6 | U | 5.3 | U | 5 4 | U | 5.3 | U |
| Dibromochloromethane | 5.6 | U | 5.3 | U | 5 4 | U | 5 3 | U |
| 1,1,2-Trichloroethane | 5.6 | U | 5.3 | U | 5 4 | U | 5 3 | U |
| Benzene | 5.6 | U | 5 3 | U | 5.4 | U | 5 3 | U |
| Trans-1,3-Dichloropropene | 5.6 | U | 5.3 | U | 5 4 | U | 5 3 | U |
| 2-Chloroethylvinylether | 11 | U | 11 | U | 11 | U | 11 | U |
| Bromoform | 5.6 | U | 5 3 | U | 5 4 | U | 5.3 | U |
| 4-Methyl-2-pentanone | 11 | U | 11 | U | 11 | U | 11 | U |
| 2-Hexanone | 11 | U | 11 | U | 11 | U | 11 | U |
| Tetrachloroethene | 5.6 | U | 5.3 | U | 5.4 | U | 5 3 | U |
| 1,1,2,2-Tetrachloroethane | 5.6 | U | 5.3 | U | 5.4 | U | 5 3 | U |
| Toluene | 1.0 | J | 2 0 | J | 3.0 | J | 1 0 | J |
| Chlorobenzene | 5 6 | U | 5.3 | U | 5.4 | U | 5 3 | U |
| Ethylbenzene | 5.6 | U | 5.3 | U | 5 4 | U | 5 3 | U |
| Styrene | 5.6 | U | 5.3 | U | 5.4 | U | 5 3 | U |
| Total Xylenes | 5.6 | U | 2.0 | J | 3.0 | J | 5.3 | U |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | | | |
|---|---|---|---|---|
| | | | FB | #176 CSC27 |
| Batch ID: | 8810-062-005 MS | 8810-062-005 MSD | 8810-062-006 | 8810-062-007 |
| Customer ID: | BH88A027 | BH88A027 | BH88A028 | BH88A029 |
| Collection Date: | 10/19/88 | 10/19/88 | 10/19/88 | 10/19/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8. | 109% | 113% | 99 % | 111% |
| Bromofluorobenzene. | 85 % | 85 % | 101% | 79 % |
| 1,2-Dichloroethane-d4 | 94 % | 94 % | 94 % | 101% |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 11 U | 10 U | 11 U |
| Bromomethane | 11 U | 11 U | 10 U | 11 U |
| Vinyl Chloride | 11 U | 11 U | 10 U | 11 U |
| Chloroethane | 11 U | 11 U | 10 U | 11 U |
| Methylene Chloride | 16 B | 15 B | 4.0 JB | 20 B |
| Acetone | 24 | 24 | 4 0 J | 11 J |
| Carbon Disulfide | 5.3 U | 5.3 U | 5 0 U | 5 5 U |
| 1,1-Dichloroethene | 94 % | 96 % | 5.0 U | 5 5 U |
| 1,1-Dichloroethane | 5.3 U | 5.3 U | 5.0 U | 5 5 U |
| 1,2-Dichloroethene (total) | NR | NR | NR | NR |
| Chloroform | 5.3 U | 5.3 U | 3 0 J | 1 0 J |
| 1,2-Dichloroethane | 5.3 U | 5 3 U | 5.0 U | 5 5 U |
| 2-Butanone | 11 U | 11 U | 10 U | 11 U |
| 1,1,1-Trichloroethane | 5 3 U | 5.3 U | 5.0 U | 5 5 U |
| Carbon Tetrachloride | 5.3 U | 5.3 U | 5.0 U | 5 5 U |
| Vinyl Acetate | 11 U | 11 U | 10 U | 11 U |
| Bromodichloromethane | 5.3 U | 5.3 U | 5 0 U | 5 5 U |
| 1,2-Dichloropropane | 5.3 U | 5.3 U | 5.0 U | 5 5 U |
| cis-1,3-Dichloropropene | 5.3 U | 5.3 U | 5.0 U | 5 5 U |
| Trichloroethene | 90 % | 91 % | 5.0 U | 5 5 U |
| Dibromochloromethane | 5.3 U | 5.3 U | 5.0 U | 5 5 U |
| 1,1,2-Trichloroethane | 5.3 U | 5.3 U | 5.0 U | 5 5 U |
| Benzene | 98 % | 101 % | 5.0 U | 5 5 U |
| Trans-1,3-Dichloropropene | 5 3 U | 5.3 U | 5.0 U | 5 5 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 10 U | 11 U |
| Bromoform | 5.3 U | 5.3 U | 5 0 U | 5.5 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 10 U | 11 U |
| 2-Hexanone | 11 U | 11 U | 10 U | 11 U |
| Tetrachloroethene | 5 3 U | 5.3 U | 5 0 U | 5 5 U |
| 1,1,2,2-Tetrachloroethane | 5 3 U | 5.3 U | 5.0 U | 5 5 U |
| Toluene | 111 % | 117 % | 5.0 U | 2 0 J |
| Chlorobenzene | 92 % | 95 % | 5.0 U | 5 5 U |
| Ethylbenzene | 5.3 U | 5.3 U | 5.0 U | 5 5 U |
| Styrene | 5.3 U | 5.3 U | 5.0 U | 5 5 U |
| Total Xylenes | 5.3 U | 5.3 U | 5.0 U | 2 0 J |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | #176 CS032 | #176 CS030 | TB | #177 CS034 |
|---|---|---|---|---|
| Batch ID: | 8810-062-008 | 8810-062-009 | 8810-093-001 | 8810-093-002 |
| Customer ID: | BH88A030 | BH88A031 | BH88A043 | BH88A044 |
| Collection Date | 10/19/88 | 10/19/88 | 10/25/88 | 10/25/88 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8. | 115% | 115% | 99 % | 113% |
| Bromofluorobenzene. | 80 % | 83 % | 101% | 86 % |
| 1,2-Dichloroethane-d4 | 100% | 92 % | 105% | 103% |

**Analytes**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Chloromethane | 11 | U | 11 | U | 10 | U | 13 | U |
| Bromomethane | 11 | U | 11 | U | 10 | U | 13 | U |
| Vinyl Chloride | 11 | U | 11 | U | 10 | U | 13 | U |
| Chloroethane | 11 | U | 11 | U | 10 | U | 13 | U |
| Methylene Chloride | 14 | B | 20 | B | 5.0 | B | 39 | B |
| Acetone | 12 | | 10 | J | 10 | U | 71 | |
| Carbon Disulfide | 5 5 | U | 5.4 | U | 5.0 | U | 6 3 | U |
| 1,1-Dichloroethene | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| 1,1-Dichloroethane | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| 1,2-Dichloroethene (total) | NR | | NR | | NR | | NR | |
| Chloroform | 1 0 | J | 1.0 | J | 5 | U | 6.3 | U |
| 1,2-Dichloroethane | 5.5 | U | 5.4 | U | 5 | U | 6.3 | U |
| 2-Butanone | 11 | U | 11 | U | 16 | | 13 | U |
| 1,1,1-Trichloroethane | 5.5 | U | 5.4 | U | 5 | U | 6.3 | U |
| Carbon Tetrachloride | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| Vinyl Acetate | 11 | U | 11 | U | 10 | U | 13 | U |
| Bromodichloromethane | 5 5 | U | 5 4 | U | 5 | U | 6 3 | U |
| 1,2-Dichloropropane | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| cis-1,3-Dichloropropene | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| Trichloroethene | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| Dibromochloromethane | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| 1,1,2-Trichloroethane | 5.5 | U | 5.4 | U | 5 | U | 6.3 | U |
| Benzene | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| Trans-1,3-Dichloropropene | 5 5 | U | 5.4 | U | 5 | U | 6 3 | U |
| 2-Chloroethylvinylether | 11 | U | 11 | U | 10 | U | 13 | U |
| Bromoform | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| 4-Methyl-2-pentanone | 11 | U | 11 | U | 10 | U | 13 | U |
| 2-Hexanone | 11 | U | 11 | U | 10 | U | 13 | U |
| Tetrachloroethene | 5 5 | U | 5.4 | U | 5 | U | 4 0 | J |
| 1,1,2,2-Tetrachloroethane | 5.5 | U | 5.4 | U | 5 | U | 6.3 | U |
| Toluene | 2.0 | J | 2.0 | J | 5 | U | 2.0 | J |
| Chlorobenzene | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| Ethylbenzene | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| Styrene | 5.5 | U | 5.4 | U | 5 | U | 6 3 | U |
| Total Xylenes | 1.0 | J | 5.4 | U | 5 | U | 3 0 | J |

WESTON ANALYTICS
VOLATILE
ORGANICS SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | #177 CS035 | #177 CS036 | #177 CS037 | |
|---|---|---|---|---|
| Batch ID | 8810-093-003 | 8810-093-004 | 8810-093-005 | 8810-093-005 MS |
| Customer ID | BH88A045 | BH88A046 | BH88A047 | BH88A047 |
| Collection Date: | 10/25/88 | 10/25/88 | 10/25/88 | 10/25/88 |

| Surrogate Recovery | | | | |
|---|---|---|---|---|
| Toluene-d8: | 112% | 113% | 110% | 109% |
| Bromofluorobenzene: | 91 % | 98 % | 91 % | 93 % |
| 1,2-Dichloroethane-d4 | 105% | 106% | 101% | 103% |

| Analytes | | | | |
|---|---|---|---|---|
| Chloromethane | 12 U | 12 U | 13 U | 13 U |
| Bromomethane | 12 U | 12 U | 13 U | 13 U |
| Vinyl Chloride | 12 U | 12 U | 13 U | 13 U |
| Chloroethane | 12 U | 12 U | 13 U | 13 U |
| Methylene Chloride | 38 B | 35 B | 14 B | 15 B |
| Acetone | 43 | 15 | 71 | 76 |
| Carbon Disulfide | 6 1 U | 5.8 U | 6 3 U | 6 3 U |
| 1,1-Dichloroethene | 6 1 U | 5.8 U | 6 3 U | 93 % |
| 1,1-Dichloroethane | 6 1 U | 5.8 U | 6 3 U | 6.3 U |
| 1,2-Dichloroethene (total) | NR | NR | NR | NR |
| Chloroform | 6 1 U | 5 8 U | 6 3 U | 6 3 U |
| 1,2-Dichloroethane | 6 1 U | 5.8 U | 6.3 U | 6 3 U |
| 2-Butanone | 12 U | 12 U | 15 | 17 |
| 1,1,1-Trichloroethane | 6.1 U | 5 8 U | 6.3 U | 6 3 U |
| Carbon Tetrachloride | 6.1 U | 5.8 U | 6.3 U | 6 3 U |
| Vinyl Acetate | 12 U | 12 U | 13 U | 13 U |
| Bromodichloromethane | 6.1 U | 5.8 U | 6.3 U | 6 3 U |
| 1,2-Dichloropropane | 6.1 U | 5.8 U | 6.3 U | 6 3 U |
| cis-1,3-Dichloropropene | 6.1 U | 5.8 U | 6.3 U | 6 3 U |
| Trichloroethene | 6 1 U | 5.8 U | 6.3 U | 81 % |
| Dibromochloromethane | 6 1 U | 5.8 U | 6.3 U | 6 3 U |
| 1,1,2-Trichloroethane | 6 1 U | 5.8 U | 6.3 U | 6.3 U |
| Benzene | 6 1 U | 5.8 U | 6 3 U | 89 % |
| Trans-1,3-Dichloropropene | 6 1 U | 5 8 U | 6 3 U | 6 3 U |
| 2-Chloroethylvinylether | 12 U | 12 U | 13 U | 13 U |
| Bromoform | 6 1 U | 5.8 U | 6.3 U | 6.3 U |
| 4-Methyl-2-pentanone | 12 U | 12 U | 13 U | 13 U |
| 2-Hexanone | 12 U | 12 U | 13 U | 13 U |
| Tetrachloroethene | 3 0 J | 5.8 U | 6.3 U | 6 3 U |
| 1,1,2,2-Tetrachloroethane | 6.1 U | 5.8 U | 6.3 U | 6 3 U |
| Toluene | 1.0 J | 2.0 J | 1.0 J | 93 % |
| Chlorobenzene | 2 0 J | 5.8 U | 6.3 U | 87 % |
| Ethylbenzene | 2.0 J | 5.8 U | 6.3 U | 6.3 U |
| Styrene | 6.1 U | 5.8 U | 6.3 U | 6.3 U |
| Total Xylenes | 3.0 J | 2.0 J | 2.0 J | 2.0 J |

**EBASCO SERVICES INCORPORATED**

BY KAF DATE 5/16/90 SHEET 1 OF

CHKD BY DATE OFS NO DEPT NO

CLIENT EG&G - Rocky Flats

PROJECT OU-3 - Other Outside Closures Work Plan

SUBJECT Evaluation of Soils Radiochemistry Results.

Attached are the radiochemistry results for soil sampling that Weston performed on SWMU's 174, 175, 182, 176, 129, and 177. The values were compared with "Background Geologic Materials, Tolerance Interval Upper Limits or MDV," also attached, as a basis for comparison.

Radionuclide results are "statistically different from background" (i.e. contaminated) when the reported value minus the error term is greater than the upper limit of tolerance interval, as stated on USACOE, 1990 (881 Hillside Area, Phase III RI/FS Work Plan). (Upper limits of Tolerance Intervals for Rocky Flats Alluvium were used).

Soil samples with radionuclide results that are significantly higher than background have been highlighted in blue.

KAF

581 2-88

TABLE 2-4 (cont.)

BACKGROUND GEOLOGIC MATERIALS
TOLERANCE INTERVAL UPPER LIMITS
OR MAXIMUM DETECTED VALUE

| Analyte | Units | Rocky Flats Alluvium (70 Samples) | Colluvium (28 Samples) | Weathered Claystone (17 Samples) | Weathered Sandstone (4 Samples) |
|---|---|---|---|---|---|
| **Other** | | | | | |
| Sulfide | mg/l | 13* | 5* | 5* | 2* |
| Nitrate | mg/l | 4 3* | 4 274 | 2 0* | 1 9* |
| pH | ---- | 9.64 (6 06) | 9 48 (6 96) | 10 14 (7 04) | 9 2* (8 0)** |
| **Total Radionuclides** | | | | | |
| Gross Alpha | pCi/l | 37 108 | 51 710 | 52.302 | 37 |
| Gross Beta | pCi/l | 36.886 | 35 135 | 35.743 | 29 |
| Uranium 233, 234 | pCi/l | 1 491 | 1.759 | 1.985 | 0 8 |
| Uranium 235 | pCi/l | 0 087 | 0.169 | 0 258 | 0.1 |
| Uranium 238 | pCi/l | 1 353 | 1 675 | 1.643 | 1 0 |
| Strontium 89, 90 | pCi/l | 0 768 | 0 776 | 0.786 | 0.4 |
| Plutonium 239, 240 | pCi/l | 0.017 | 0.023 | 0.020 | 0.01 |
| Americium 241 | pCi/l | 0 018 | NR | NR | NR |
| Cesium 137 | pCi/l | 0.082 | 0 113 | ND | 0 0 |
| Tritium | pCi/l | 0 410 | 0 299 | 0.322 | 0.39 |

Type

ND - Not Detected
NR - Data Not Received
* - Maximum Detected Value
** - Minimum Detected Value
() - Tolerance Interval Lower Limit for Two-Sided Parameter

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

Sample Information

| | | |
|---|---|---|
| RFW Batch ID: | 2900-127-100 | 2900-128-100 |
| Customer ID: | 9H88A048 | 9H88A049 |
| Laboratory ID: | 9612-28524-2-1 | 9612-28524-2-2 |
| Matrix: | Soil | Soil |

| Radiochemistry | SW846 182 CS022 | | SW846 182 CS023 | |
|---|---|---|---|---|
| Gross Alpha..... | 26 ± 13 | pCi/g | 22 ± 13 | pCi/g |
| Gross Beta..... | 25 ± 6 | pCi/g | 29 ± 6 | pCi/g |
| Uranium 233, 234..... | 1.3 ± 0.2 | pCi/g | 0.56 ± 0.10 | pCi/g |
| Uranium 235..... | | | | |
| Uranium 238..... | 5.9 ± 0.3 | pCi/g | 0.54 ± 0.10 | pCi/g |
| Strontium 89, 90..... | | | | |
| Plutonium 239, 240.... ..... | -0.02 ± [illegible] | pCi/g | -0.02 ± 0.10 | pCi/g |
| Americium 241..... .. | -0.03 ± [illegible] | pCi/g | -0.04 ± 0.09 | pCi/g |
| Cesium 137..... . ..... | | | | |
| Tritium.... ..... | [illegible] ± [illegible] | pCi/ml | [illegible] ± 0.14 | pCi/ml |
| % Moisture .... ..... | 8.1 | | 6.5 | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

Sample Information

| | | | |
|---|---|---|---|
| RFW Batch ID: | 2000-119-100 | 2000-120-100 | 2000-121-100 |
| Customer ID: | BH88A024 | BH88A025 | BH88A026 |
| Laboratory ID: | 9612-28466-8-1 | 9612-28466-8-2 | 9612-28466-8-3 |
| Matrix: | Soil | Soil | Soil |

| Radio Chemistry | Summary CS024 | | Summary CS025 | | Summary CS026 | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 28 ± 13 | pci/g | 21 ± 12 | pci/g | 16 ± 11 | pci/g |
| Gross Beta.. ..... | 29 ± 6 | pci/g | 22 ± 6 | pci/g | 14 ± 6 | pci/g |
| Uranium 233, 234..... | 1.3 ± 0.3 | pci/g | 0.66 ± 0.16 | pci/g | 0.67 ± 0.14 | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... ..... | 1.1 ± 0.3 | pci/g | 0.79 ± 0.16 | pci/g | 0.56 ± 0.12 | pci/g |
| Strontium 89, 90. . ..... | | | | | | |
| Plutonium 239, 240..... | 0.43 ± 0.17 | pci/g | 0.20 ± 0.15 | pci/g | 0.19 ± 0.15 | pci/g |
| Americium 241..... .... .. | 0.39 ± 0.11 | pci/g | 0.17 ± 0.07 | pci/g | 0.28 ± [illegible] | pci/g |
| Cesium 137..... .... . .. | | | | | | |
| Tritium .. ..... | -0.05 ± 0.15 | pci/ml | 0.07 ± 0.16 | pci/ml | -0.03 ± 0.15 | pci/ml |
| % Moisture..... | 7.3 | | 5.1 | | 4.0 | |

Sample Information

| | | | |
|---|---|---|---|
| RFW Batch ID: | 2000-122-100 Matrix Spike/Dup | 2000-123-100 Field Blank | 2000-124-100 |
| Customer ID: | BHAA8027-MS,MSD | BH88A028 | BH88A029 |
| Laboratory ID: | 9612-28466-8-4 | 9612-28466-8-5 | 9612-28466-8-6 |
| Matrix: | Soil | water | Soil |

| Radio Chemistry | ? | | | | CS027 | |
|---|---|---|---|---|---|---|
| Gross Alpha..... | 13 ± 11 | pci/g | 0 ± 1 | pci/l | 18 ± 12 | pci/g |
| Gross Beta... ..... | 13 ± 6 | pci/g | 1 ± 2 | pci/l | 18 ± 6 | pci/g |
| Uranium 233, 234..... | 0.68 ± 0.15 | pci/g | 0.0 ± 0.1 | pci/l | 0.51 ± 0.14 | pci/g |
| Uranium 235..... | | | | | | |
| Uranium 238..... | 0.51 ± 0.12 | pci/g | 0.0 ± 0.1 | pci/l | 0.53 ± 0.13 | pci/g |
| Strontium 89, 90..... | | | | | | |
| Plutonium 239, 240..... | 0.19 ± 0.13 | pci/g | 0.0 ± 0.1 | pci/l | 1.0 ± 0.2 | pci/g |
| Americium 241..... | 0.32 ± 0.08 | pci/g | 0.0 ± 0.1 | pci/l | 0.34 ± 0.08 | pci/g |
| Cesium 137..... | | | | | | |
| Tritium..... | -0.05 ± 0.15 | pci/ml | 0.10 ± 0.16 | pci/l | -0.01 ± 0.15 | pci/ml |
| % Moisture..... | [illegible] | | | | 5.5 | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

Sample Information

| | | |
|---|---|---|
| RFW Batch ID: | 2000-125-100 | 2000-126-100 |
| Customer ID: | BH88A030 | BH88A031 |
| Laboratory ID: | 9612-28466-8-7 | 9612-28466-8-8 |
| Matrix: | Soil | Soil |

| Radio Chemistry | Summary CS032 | | Summary CS030 | |
|---|---|---|---|---|
| Gross Alpha..... ..... | 31 ± 14 | pci/g | 28 ± 13 | pci/g |
| Gross Beta..... | 15 ± 6 | pci/g | 20 ± 6 | pci/g |
| Uranium 233, 234..... | 0.66 ± 0.17 | pci/g | 0.80 ± 0.15 | pci/g |
| Uranium 235... .... .. .. | | | | |
| Uranium 238..... | 0.64 ± 0.16 | pci/g | 0.57 ± 0.12 | pci/g |
| Strontium 89, 90..... | | | | |
| Plutonium 239, 240 . ..... | 0.60 ± 0.12 | pci/g | 0.70 ± 0.16 | pci/g |
| Americium 24..... ... . | 0.18 ± 0.07 | pci/g | 0.30 ± 0.08 | pci/g |
| Cesium 137..... . . .. | | | | |
| Tritium..... ... . .. | 0.18 ± 0.16 | pci/ml | .05 ± 0.15 | pci/ml |
| % Moisture..... | 5.9 | | 3.8 | |

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

Semivols 176
175

Weston-Gulf Coast
Rockwell. 142966-142976
VOA. BNA GC/MS

# CASE NARRATIVE

## GENERAL

1. Weston-Gulf Coast uses the following GC/MS systems which can be identified on all raw data by either the Instrument ID or the quantitation file ID:

| ID # | Instrument | Quant ID File |
|---|---|---|
| GCL#1 | Hewlett Packard 5970 MSD | ID_IEF |
| GCL#2 | Hewlett Packard 5996 | ID_V2H |
| GCL#3 | Hewlett Packard 5996 | ID_CAF |
| GCL#4 | Hewlett Packard 5970 MSD | ID_MGH |

2. The Internal Standard and Surrogate peaks are labeled by name.

3. The quantitation of all detected HSL compounds was conducted using the response factors calculated from the continuing calibration standard.

## VOA:

1. All surrogate recoveries in the volatile analyses were within QC limits.

2. All of the samples were analyzed as low level soils or waters and therefore normal detection limits apply.

3. Matrix spike analyses were conducted on another sample that was analyzed with this set.

## BNA:

1. All surrogate recoveries in the semi-volatile analyses were within QC limits except for two surrogates on Method Blank 142975GB that were slightly low.

2. All of the samples were extracted and analyzed as low level soils or waters and therefore normal detection limits apply.

3. Matrix spike analyses were conducted on sample 142974, 142975, and 142976.

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

The following is a list of flags that Gulf Coast Laboratories frequently uses on our analytical reports. All flags may not be applicable for the enclosed reports.

A - Indicates a condensation product

B - Indicates the compound was found in the blank as well as the sample.

C - Pesticide compound confirmed by GC/MS

d - Result is on a dry weight basis

D - Indicates the compound was identified in an analysis at a secondary dilution factor. If a sample is re-analyzed at a higher dilution, the "DL" suffix is appended to sample numbers.

e - Concentrations exceed calibration range of the instrument for that specific analysis.

E - Severe matrix interference

J - Indicates an estimated value which is below detection limit

P - Peaks present but do not appear to be PCBs

R - Spike recovery not within control limit

S - Indicates value determined by Method of Standard Addition

U - Indicates compound was analyzed for but not detected

W - Result is on an "as is basis" (wet weight)

X - Result by calculation.

BDL - Below Detection Limit

NA - Not Applicable

NR - Not Required

* - Duplicate not within control limits

+ - Correlation coefficient for MSA < 0.995

@ - Due to matrix interference, post analytical spike is out of control limits.

WESTON ANALYTICS
SEMIVOLATILE ANALYTICAL DATA PACKAGE FOR
RF

DATE RECEIVED: 10/26/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A33 | 8810-070-002 | 10/20/88 | 10/27/88 | 11/15/88 |
| BH88A34 | 8810-070-003 | 10/20/88 | 10/26/88 | 11/16/88 |
| BH88A35 | 8810-070-004 | 10/20/88 | 10/27/88 | 11/15/88 |
| BH88A36 | 8810-070-005 | 10/20/88 | 10/27/88 | 11/15/88 |
| BH88A37 | 8810-070-006 | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A38 | 8810-070-007 | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A39 | 8810-070-008 | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A40 | 8810-070-009 | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A40 | 8810-070-009 MS | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A40 | 8810-070-009 MSD | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A41 | 8810-070-010 | 10/20/88 | 10/28/88 | 11/16/88 |
| BH88A41 | 8810-070-010 MS | 10/20/88 | 10/28/88 | 11/16/88 |
| BH88A41 | 8810-070-010 MSD | 10/20/88 | 10/28/88 | 11/16/88 |
| BH88A42 | 8810-070-011 | 10/21/88 | 10/28/88 | 11/17/88 |
| BH88A42 | 8810-070-011 MS | 10/21/88 | 10/28/88 | 11/17/88 |
| BH88A42 | 8810-070-011 MSD | 10/21/88 | 10/28/88 | 11/17/88 |
| LAB QC: | | | | |
| BLANK | 8810-070-0001BL | NA | 10/27/88 | 11/15/88 |
| BLANK | 8810-070-0002BL | NA | 10/28/88 | 11/16/88 |
| BLANK | 8810-070-0003BL | NA | 10/28/88 | 11/16/88 |

WESTON ANALYTICS
SEMIVOLATILE ANALYTICAL DATA PACKAGE FOR
RF

DATE RECEIVED: 10/26/88 RFW LOT #: 8810-070

| CLIENT ID | RFW # | MTX | PREP # | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|---|---|
| BH88A33 | 002 | S | 142967 | 10/20/88 | 10/27/88 | 11/15/88 |
| BH88A34 | 003 | S | 142968 | 10/20/88 | 10/26/88 | 11/16/88 |
| BH88A35 | 004 | S | 142969 | 10/20/88 | 10/27/88 | 11/15/88 |
| BH88A36 | 005 | S | 142970 | 10/20/88 | 10/27/88 | 11/15/88 |
| BH88A37 | 006 | S | 142971 | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A38 | 007 | S | 142972 | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A39 | 008 | S | 142973 | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A40 | 009 | S | 142974 | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A40 | 009 MS | S | 142974 M | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A40 | 009 MSD | S | 142974 M | 10/20/88 | 10/27/88 | 11/16/88 |
| BH88A41 | 010 | W | 142975 | 10/20/88 | 10/28/88 | 11/16/88 |
| BH88A41 | 010 MS | W | 142975 M | 10/20/88 | 10/28/88 | 11/16/88 |
| BH88A41 | 010 MSD | W | 142975 M | 10/20/88 | 10/28/88 | 11/16/88 |
| BH88A42 | 011 | S | 142976 | 10/21/88 | 10/28/88 | 11/17/88 |
| BH88A42 | 011 MS | S | 142976 M | 10/21/88 | 10/28/88 | 11/17/88 |
| BH88A42 | 011 MSD | S | 142976 M | 10/21/88 | 10/28/88 | 11/17/88 |
| LAB QC: | | | | | | |
| BLANK | 0001BL | S | BLANK | NA | 10/27/88 | 11/15/88 |
| BLANK | 0002BL | W | BLANK | NA | 10/28/88 | 11/16/88 |
| BLANK | 0003BL | S | BLANK | NA | 10/28/88 | 11/16/88 |

List of Batch IDs starting with· 8810-070

| RFW Batch ID | Customer ID | Laboratory ID |
|---|---|---|
| 8810-070-0001BL | BLANK | BLANK |
| 8810-070-0002BL | BLANK | BLANK |
| 8810-070-0003BL | BLANK | BLANK |
| 8810-070-002 | BH88A33 | 142967 |
| 8810-070-003 | BH88A34 | 142968 |
| 8810-070-004 | BH88A35 | 142969 |
| 8810-070-005 | BH88A36 | 142970 |
| 8810-070-006 | BH88A37 | 142971 |
| 8810-070-007 | BH88A38 | 142972 |
| 8810-070-008 | BH88A39 | 142973 |
| 8810-070-009 | BH88A40 | 142974 |
| 8810-070-009 MS | BH88A40 | 142974 MS |
| 8810-070-009 MSD | BH88A40 | 142974 MSD |
| 8810-070-010 | BH88A41 | 142975 |
| 8810-070-010 MS | BH88A41 | 142975 MS |
| 8810-070-010 MSD | BH88A41 | 142975 MSD |
| 8810-070-011 | BH88A42 | 142976 |
| 8810-070-011 MS | BH88A42 | 142976 MS |
| 8810-070-011 MSD | BH88A42 | 142976 MSD |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client. ROCKY FLATS 

Sample Information

#176
A5031

| | | | | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-070-0001BL | 8810-070-0002BL | 8810-070-0003BL | 8810-070-002 |
| Customer ID | BLANK | BLANK | BLANK | BH88A33 |
| Matrix: | Soil | Water | Soil | Soil |
| Units: | UG/KG | UG/L | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol. | 36 % | 28 % | 46 % | 55 % |
| Phenol-d5. | 32 % | 16 % | 38 % | 46 % |
| 2,4,6-Br3-Phenol: | 83 % | 12 % | 61 % | 72 % |
| Nitrobenzene-d5 | 23 % | 24 % | 26 % | 36 % |
| 2-Fluorobiphenyl | 36 % | 34 % | 47 % | 52 % |
| p-Terphenyl-d14 | 62 % | 38 % | 79 % | 65 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Phenol. | 330 U | 10 U | 330 U | 340 U |
| bis(2-Chloroethyl)Ether | 330 U | 10 U | 330 U | 340 U |
| 2-Chlorophenol | 330 U | 10 U | 330 U | 340 U |
| 1,3-Dichlorobenzene | 330 U | 10 U | 330 U | 340 U |
| 1,4-Dichlorobenzene | 330 U | 10 U | 330 U | 340 U |
| Benzyl Alcohol | 330 U | 10 U | 330 U | 340 U |
| 1,2-Dichlorobenzene | 330 U | 10 U | 330 U | 340 U |
| 2-Methylphenol | 330 U | 10 U | 330 U | 340 U |
| bis(2-Chloroisopropyl)Ether | 330 U | 10 U | 330 U | 340 U |
| 4-Methylphenol | 330 U | 10 U | 330 U | 340 U |
| N-Nitroso-di-n-propylamine | 330 U | 10 U | 330 U | 340 U |
| Hexachloroethane | 330 U | 10 U | 330 U | 340 U |
| Nitrobenzene | 330 U | 10 U | 330 U | 340 U |
| Isophorone | 330 U | 10 U | 330 U | 340 U |
| 2-Nitrophenol | 330 U | 10 U | 330 U | 340 U |
| 2,4-Dimethylphenol | 330 U | 10 U | 330 U | 340 U |
| Benzoic Acid | 1600 U | 50 U | 1600 U | 1700 U |
| bis(2-Chloroethoxy)Methane | 330 U | 10 U | 330 U | 340 U |
| 2,4-Dichlorophenol | 330 U | 10 U | 330 U | 340 U |
| 1,2,4-Trichlorobenzene | 330 U | 10 U | 330 U | 340 U |
| Naphthalene | 330 U | 10 U | 330 U | 340 U |
| 4-Chloroaniline | 330 U | 10 U | 330 U | 340 U |
| Hexachlorobutadiene | 330 U | 10 U | 330 U | 340 U |
| 4-Chloro-3-methylphenol | 330 U | 10 U | 330 U | 340 U |
| 2-Methylnaphthalene | 330 U | 10 U | 330 U | 340 U |
| Hexachlorocyclopentadiene | 330 U | 10 U | 330 U | 340 U |
| 2,4,6-Trichlorophenol | 330 U | 10 U | 330 U | 340 U |
| 2,4,5-Trichlorophenol | 1600 U | 50 U | 1600 U | 1700 U |
| 2-Chloronaphthalene | 330 U | 10 U | 330 U | 340 U |
| 2-Nitroaniline | 1600 U | 50 U | 1600 U | 1700 U |
| Dimethyl Phthalate | 330 U | 10 U | 330 U | 340 U |
| Acenaphthylene | 330 U | 10 U | 330 U | 340 U |

(continued)

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client. ROCKY FLATS 

Sample Information

#176
CSOB'

| | | | | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-070-0001BL | 8810-070-0002BL | 8810-070-0003BL | 8810-070-002 |
| Customer ID. | BLANK | BLANK | BLANK | BH88A33 |
| Matrix: | Soil | Water | Soil | Soil |
| Units: | UG/KG | UG/L | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3-Nitroaniline | 1600 | U | 50 | U | 1600 | U | 1700 | U |
| Acenaphthene | 330 | U | 10 | U | 330 | U | 340 | U |
| 2,4-Dinitrophenol | 1600 | U | 50 | U | 1600 | U | 1700 | U |
| 4-Nitrophenol | 1600 | U | 50 | U | 1600 | U | 1700 | U |
| Dibenzofuran | 330 | U | 10 | U | 330 | U | 340 | U |
| 2,4-Dinitrotoluene | 330 | U | 10 | U | 330 | U | 340 | U |
| 2,6-Dinitrotoluene | 330 | U | 10 | U | 330 | U | 340 | U |
| Diethylphthalate | 330 | U | 10 | U | 330 | U | 340 | U |
| 4-Chlorophenyl-phenylether | 330 | U | 10 | U | 330 | U | 340 | U |
| Fluorene | 330 | U | 10 | U | 330 | U | 340 | U |
| 4-Nitroaniline | 1600 | U | 50 | U | 1600 | U | 1700 | U |
| 4,6-Dinitro-2-methylphenol | 1600 | U | 50 | U | 1600 | U | 1700 | U |
| N-Nitrosodiphenylamine | 330 | U | 10 | U | 330 | U | 340 | U |
| 4-Bromophenyl-phenylether | 330 | U | 10 | U | 330 | U | 340 | U |
| Hexachlorobenzene | 330 | U | 10 | U | 330 | U | 340 | U |
| Pentachlorophenol | 1600 | U | 50 | U | 1600 | U | 1700 | U |
| Phenanthrene | 330 | U | 10 | U | 330 | U | 340 | U |
| Anthracene | 330 | U | 10 | U | 330 | U | 340 | U |
| di-n-Butyl Phthalate | 330 | U | 10 | U | 330 | U | 340 | U |
| Fluoranthene | 330 | U | 10 | U | 330 | U | 340 | U |
| Pyrene | 330 | U | 10 | U | 330 | U | 340 | U |
| Butyl Benzyl Phthalate | 330 | U | 10 | U | 330 | U | 340 | U |
| 3,3'-Dichlorobenzidine | 660 | U | 20 | U | 660 | U | 680 | U |
| Benzo(a)Anthracene | 330 | U | 10 | U | 330 | U | 340 | U |
| bis(2-Ethylhexyl)Phthalate | 72 | J | 1 | J | 190 | J | 130 | JB |
| Chrysene | 330 | U | 10 | U | 330 | U | 340 | U |
| di-n-Octyl Phthalate | 330 | U | 10 | U | 330 | U | 340 | U |
| Benzo(b)Fluoranthene | 330 | U | 10 | U | 330 | U | 340 | U |
| Benzo(k)Fluoranthene | 330 | U | 10 | U | 330 | U | 340 | U |
| Benzo(a)Pyrene | 330 | U | 10 | U | 330 | U | 340 | U |
| Indeno(1,2,3-cd)Pyrene | 330 | U | 10 | U | 330 | U | 340 | U |
| Dibenz(a,h)Anthracene | 330 | U | 10 | U | 330 | U | 340 | U |
| Benzo(g,h,i)Perylene | 330 | U | 10 | U | 330 | U | 340 | U |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client: ROCKY FLATS 

| Sample Information | #176 CS028 | #176 CS029 | #176 CS03 3 | #175 CS018 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-070-003 | 8810-070-004 | 8810-070-005 | 8810-070-006 |
| Customer ID: | BH88A34 | BH88A35 | BH88A36 | BH88A37 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 48 % | 47 % | 47 % | 54 % |
| Phenol-d5: | 46 % | 39 % | 38 % | 47 % |
| 2,4,6-Br3-Phenol. | 89 % | 69 % | 73 % | 70 % |
| Nitrobenzene-d5 | 32 % | 30 % | 31 % | 39 % |
| 2-Fluorobiphenyl· | 53 % | 43 % | 44 % | 55 % |
| p-Terphenyl-d14 | 66 % | 54 % | 52 % | 69 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Phenol..... | 330 U | 340 U | 330 U | 360 U |
| bis(2-Chloroethyl)Ether..... | 330 U | 340 U | 330 U | 360 U |
| 2-Chlorophenol..... | 330 U | 340 U | 330 U | 360 U |
| 1,3-Dichlorobenzene..... | 330 U | 340 U | 330 U | 360 U |
| 1,4-Dichlorobenzene..... | 330 U | 340 U | 330 U | 360 U |
| Benzyl Alcohol..... | 330 U | 340 U | 330 U | 360 U |
| 1,2-Dichlorobenzene..... | 330 U | 340 U | 330 U | 360 U |
| 2-Methylphenol..... | 330 U | 340 U | 330 U | 360 U |
| bis(2-Chloroisopropyl)Ether..... | 330 U | 340 U | 330 U | 360 U |
| 4-Methylphenol..... | 330 U | 340 U | 330 U | 360 U |
| N-Nitroso-di-n-propylamine ..... . | 330 U | 340 U | 330 U | 360 U |
| Hexachloroethane..... | 330 U | 340 U | 330 U | 360 U |
| Nitrobenzene..... | 330 U | 340 U | 330 U | 360 U |
| Isophorone..... | 330 U | 340 U | 330 U | 360 U |
| 2-Nitrophenol..... ..... | 330 U | 340 U | 330 U | 360 U |
| 2,4-Dimethylphenol..... | 330 U | 340 U | 330 U | 360 U |
| Benzoic Acid..... | 1700 U | 1700 U | 1600 U | 1800 U |
| bis(2-Chloroethoxy)Methane..... | 330 U | 340 U | 330 U | 360 U |
| 2,4-Dichlorophenol..... | 330 U | 340 U | 330 U | 360 U |
| 1,2,4-Trichlorobenzene..... | 330 U | 340 U | 330 U | 360 U |
| Naphthalene..... | 330 U | 340 U | 330 U | 360 U |
| 4-Chloroaniline..... | 330 U | 340 U | 330 U | 360 U |
| Hexachlororbutadiene..... | 330 U | 340 U | 330 U | 360 U |
| 4-Chloro-3-methylphenol..... | 330 U | 340 U | 330 U | 360 U |
| 2-Methylnaphthalene..... | 330 U | 340 U | 330 U | 360 U |
| Hexachlorocyclopentadiene..... | 330 U | 340 U | 330 U | 360 U |
| 2,4,6-Trichlorophenol..... | 330 U | 340 U | 330 U | 360 U |
| 2,4,5-Trichlorophenol..... | 1700 U | 1700 U | 1600 U | 1800 U |
| 2-Chloronaphthalene..... .. | 330 U | 340 U | 330 U | 360 U |
| 2-Nitroaniline..... | 1700 U | 1700 U | 1600 U | 1800 U |
| Dimethyl Phthalate..... | 330 U | 340 U | 330 U | 360 U |
| Acenaphthylene..... | 330 U | 340 U | 330 U | 360 U |
| 3-Nitroaniline..... | 1700 U | 1700 U | 1600 U | 1800 U |

(continued)

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



Sample Information

| | #176 CS028 | #176 CS029 | #176 CS033 | #175 CS018 |
|---|---|---|---|---|
| RFW Batch ID | 8810-070-003 | 8810-070-004 | 8810-070-005 | 8810-070-006 |
| Customer ID: | BH88A34 | BH88A35 | BH88A36 | BH88A37 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 330 | U | 340 | U | 330 | U | 360 | U |
| 2,4-Dinitrophenol | 1700 | U | 1700 | U | 1600 | U | 1800 | U |
| 4-Nitrophenol | 1700 | U | 1700 | U | 1600 | U | 1800 | U |
| Dibenzofuran | 330 | U | 340 | U | 330 | U | 360 | U |
| 2,4-Dinitrotoluene | 330 | U | 340 | U | 330 | U | 360 | U |
| 2,6-Dinitrotoluene | 330 | U | 340 | U | 330 | U | 360 | U |
| Diethylphthalate | 330 | U | 340 | U | 330 | U | 360 | U |
| 4-Chlorophenyl-phenylether | 330 | U | 340 | U | 330 | U | 360 | U |
| Fluorene | 330 | U | 340 | U | 330 | U | 360 | U |
| 4-Nitroaniline | 1700 | U | 1700 | U | 1600 | U | 1800 | U |
| 4,6-Dinitro-2-methylphenol | 1700 | U | 1700 | U | 1600 | U | 1800 | U |
| N-Nitrosodiphenylamine | 330 | U | 340 | U | 330 | U | 360 | U |
| 4-Bromophenyl-phenylether | 330 | U | 340 | U | 330 | U | 360 | U |
| Hexachlorobenzene | 330 | U | 340 | U | 330 | U | 360 | U |
| Pentachlorophenol | 1700 | U | 1700 | U | 1600 | U | 1800 | U |
| Phenanthrene | 330 | U | 76 | J | 49 | J | 360 | U |
| Anthracene | 330 | U | 340 | U | 330 | U | 360 | U |
| di-n-Butyl Phthalate | 330 | U | 340 | U | 330 | U | 360 | U |
| Fluoranthene | 46 | J | 120 | J | 82 | J | 360 | U |
| Pyrene | 43 | J | 100 | J | 77 | J | 360 | U |
| Butyl Benzyl Phthalate | 330 | U | 340 | U | 330 | U | 360 | U |
| 3,3'-Dichlorobenzidine | 670 | U | 690 | U | 660 | U | 720 | U |
| Benzo(a)Anthracene | 330 | U | 53 | J | 37 | J | 360 | U |
| bis(2-Ethylhexyl)Phthalate | 130 | JB | 110 | JB | 110 | JB | 180 | JB |
| Chrysene | 330 | U | 61 | J | 42 | J | 360 | U |
| di-n-Octyl Phthalate | 330 | U | 340 | U | 330 | U | 360 | U |
| Benzo(b)Fluoranthene | 330 | U | 51 | J | 28 | J | 360 | U |
| Benzo(k)Fluoranthene | 330 | U | 53 | J | 52 | J | 360 | U |
| Benzo(a)Pyrene | 330 | U | 57 | J | 40 | J | 360 | U |
| Indeno(1,2,3-cd)Pyrene | 330 | U | 340 | U | 330 | U | 360 | U |
| Dibenz(a,h)Anthracene | 330 | U | 340 | U | 330 | U | 360 | U |
| Benzo(g,h,i)Perylene | 330 | U | 340 | U | 330 | U | 360 | U |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client: ROCKY FLATS 

Sample Information

| | #175 CS019 | #175 CS021 | | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-070-007 | 8810-070-008 | 8810-070-009 | 8810-070-009 MS |
| Customer ID: | BH88A38 | BH88A39 | BH88A40 | BH88A40 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol. | 56 % | 47 % | 61 % | 48 % |
| Phenol-d5: | 45 % | 38 % | 51 % | 38 % |
| 2,4,6-Br3-Phenol | 73 % | 72 % | 95 % | 71 % |
| Nitrobenzene-d5: | 36 % | 30 % | 39 % | 33 % |
| 2-Fluorobiphenyl: | 54 % | 45 % | 58 % | 47 % |
| p-Terphenyl-d14 | 61 % | 61 % | 79 % | 59 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Phenol | 340 U | 340 U | 340 U | 35 % |
| bis(2-Chloroethyl)Ether | 340 U | 340 U | 340 U | 340 U |
| 2-Chlorophenol | 340 U | 340 U | 340 U | 37 % |
| 1,3-Dichlorobenzene | 340 U | 340 U | 340 U | 340 U |
| 1,4-Dichlorobenzene | 340 U | 340 U | 340 U | 35 % |
| Benzyl Alcohol | 340 U | 340 U | 340 U | 340 U |
| 1,2-Dichlorobenzene | 340 U | 340 U | 340 U | 340 U |
| 2-Methylphenol | 340 U | 340 U | 340 U | 340 U |
| bis(2-Chloroisopropyl)Ether | 340 U | 340 U | 340 U | 340 U |
| 4-Methylphenol | 340 U | 340 U | 340 U | 340 U |
| N-Nitroso-di-n-propylamine | 340 U | 340 U | 340 U | 44 % |
| Hexachloroethane | 340 U | 340 U | 340 U | 340 U |
| Nitrobenzene | 340 U | 340 U | 340 U | 340 U |
| Isophorone | 340 U | 340 U | 340 U | 340 U |
| 2-Nitrophenol | 340 U | 340 U | 340 U | 340 U |
| 2,4-Dimethylphenol | 340 U | 340 U | 340 U | 340 U |
| Benzoic Acid | 1700 U | 1700 U | 1700 U | 1700 U |
| bis(2-Chloroethoxy)Methane | 340 U | 340 U | 340 U | 340 U |
| 2,4-Dichlorophenol | 340 U | 340 U | 340 U | 340 U |
| 1,2,4-Trichlorobenzene | 340 U | 340 U | 340 U | 39 % |
| Naphthalene | 340 U | 340 U | 340 U | 340 U |
| 4-Chloroaniline | 340 U | 340 U | 340 U | 340 U |
| Hexachlororbutadiene | 340 U | 340 U | 340 U | 340 U |
| 4-Chloro-3-methylphenol | 340 U | 340 U | 340 U | 38 % |
| 2-Methylnaphthalene | 340 U | 340 U | 340 U | 340 U |
| Hexachlorocyclopentadiene | 340 U | 340 U | 340 U | 340 U |
| 2,4,6-Trichlorophenol | 340 U | 340 U | 340 U | 340 U |
| 2,4,5-Trichlorophenol | 1700 U | 1700 U | 1700 U | 1700 U |
| 2-Chloronaphthalene | 340 U | 340 U | 340 U | 340 U |
| 2-Nitroaniline | 1700 U | 1700 U | 1700 U | 1700 U |
| Dimethyl Phthalate | 340 U | 340 U | 340 U | 340 U |
| Acenaphthylene | 340 U | 340 U | 340 U | 340 U |
| 3-Nitroaniline | 1700 U | 1700 U | 1700 U | 1700 U |

(continued)

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



Sample Information

| | #175 CS019 | #175 CS021 | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-070-007 | 8810-070-008 | 8810-070-009 | 8810-070-009 MS |
| Customer ID: | BH88A38 | BH88A39 | BH88A40 | BH88A40 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

*Sample Information*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 340 | U | 340 | U | 340 | U | 42 | % |
| 2,4-Dinitrophenol | 1700 | U | 1700 | U | 1700 | U | 1700 | U |
| 4-Nitrophenol | 1700 | U | 1700 | U | 1700 | U | 39 | % |
| Dibenzofuran | 340 | U | 340 | U | 340 | U | 340 | U |
| 2,4-Dinitrotoluene | 340 | U | 340 | U | 340 | U | 38 | % |
| 2,6-Dinitrotoluene | 340 | U | 340 | U | 340 | U | 340 | U |
| Diethylphthalate | 340 | U | 340 | U | 340 | U | 340 | U |
| 4-Chlorophenyl-phenylether | 340 | U | 340 | U | 340 | U | 340 | U |
| Fluorene | 340 | U | 340 | U | 340 | U | 340 | U |
| 4-Nitroaniline | 1700 | U | 1700 | U | 1700 | U | 1700 | U |
| 4,6-Dinitro-2-methylphenol | 1700 | U | 1700 | U | 1700 | U | 1700 | U |
| N-Nitrosodiphenylamine | 340 | U | 340 | U | 340 | U | 340 | U |
| 4-Bromophenyl-phenylether | 340 | U | 340 | U | 340 | U | 340 | U |
| Hexachlorobenzene | 340 | U | 340 | U | 340 | U | 340 | U |
| Pentachlorophenol | 1700 | U | 1700 | U | 1700 | U | 8 | % |
| Phenanthrene | 340 | U | 40 | J | 200 | J | 38 | J |
| Anthracene | 340 | U | 340 | U | 35 | J | 6 | J |
| di-n-Butyl Phthalate | 340 | U | 340 | U | 340 | U | 340 | U |
| Fluoranthene | 340 | U | 83 | J | 260 | J | 63 | J |
| Pyrene | 340 | U | 81 | J | 260 | J | 43 | % |
| Butyl Benzyl Phthalate | 340 | U | 340 | U | 340 | U | 340 | U |
| 3,3'-Dichlorobenzidine | 670 | U | 680 | U | 690 | U | 690 | U |
| Benzo(a)Anthracene | 340 | U | 340 | U | 120 | J | 26 | J |
| bis(2-Ethylhexyl)Phthalate | 190 | JB | 370 | B | 360 | B | 260 | JB |
| Chrysene | 340 | U | 340 | U | 130 | J | 40 | J |
| di-n-Octyl Phthalate | 340 | U | 340 | U | 340 | U | 340 | U |
| Benzo(b)Fluoranthene | 340 | U | 340 | U | 130 | J | 30 | J |
| Benzo(k)Fluoranthene | 340 | U | 340 | U | 120 | J | 42 | J |
| Benzo(a)Pyrene | 340 | U | 340 | U | 140 | J | 39 | J |
| Indeno(1,2,3-cd)Pyrene | 340 | U | 340 | U | 340 | U | 340 | U |
| Dibenz(a,h)Anthracene | 340 | U | 340 | U | 340 | U | 340 | U |
| Benzo(g,h,i)Perylene | 340 | U | 340 | U | 340 | U | 340 | U |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



Sample Information

| | | | | |
|---|---|---|---|---|
| | | FB | FB | FB |
| RFW Batch ID: | 8810-070-009 MSD | 8810-070-010 | 8810-070-010 MS | 8810-070-010 MSD |
| Customer ID: | BH88A40 | BH88A41 | BH88A41 | BH88A41 |
| Matrix: | Soil | Water | Water | Water |
| Units. | UG/KG | UG/L | UG/L | UG/L |
| Dilution Factor | 1 | 1 | 1 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 58 % | 47 % | 41 % | 60 % |
| Phenol-d5 | 48 % | 28 % | 30 % | 41 % |
| 2,4,6-Br3-Phenol. | 80 % | 63 % | 53 % | 71 % |
| Nitrobenzene-d5: | 40 % | 42 % | 43 % | 41 % |
| 2-Fluorobiphenyl. | 57 % | 52 % | 57 % | 57 % |
| p-Terphenyl-d14 | 73 % | 63 % | 72 % | 72 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Phenol..... | 46 % | 10 U | 26 % | 39 % |
| bis(2-Chloroethyl)Ether..... .. .. | 340 U | 10 U | 10 U | 10 U |
| 2-Chlorophenol..... | 47 % | 10 U | 31 % | 48 % |
| 1,3-Dichlorobenzene..... | 340 U | 10 U | 10 U | 10 U |
| 1,4-Dichlorobenzene..... ... | 45 % | 10 U | 36 % | 35 % |
| Benzyl Alcohol..... | 340 U | 10 U | 10 U | 10 U |
| 1,2-Dichlorobenzene ..... | 340 U | 10 U | 10 U | 10 U |
| 2-Methylphenol..... .. | 340 U | 10 U | 10 U | 10 U |
| bis(2-Chloroisopropyl)Ether.. ..... | 340 U | 10 U | 10 U | 10 U |
| 4-Methylphenol..... .. | 340 U | 10 U | 10 U | 10 U |
| N-Nitroso-di-n-propylamine. ... .. | 58 % | 10 U | 46 % | 52 % |
| Hexachloroethane..... .... | 340 U | 10 U | 10 U | 10 U |
| Nitrobenzene..... ..... | 340 U | 10 U | 10 U | 10 U |
| Isophorone..... . | 340 U | 10 U | 10 U | 10 U |
| 2-Nitrophenol..... . .. | 340 U | 10 U | 10 U | 10 U |
| 2,4-Dimethylphenol..... | 340 U | 10 U | 10 U | 10 U |
| Benzoic Acid..... | 1700 U | 50 U | 50 U | 50 U |
| bis(2-Chloroethoxy)Methane..... | 340 U | 10 U | 10 U | 10 U |
| 2,4-Dichlorophenol..... | 340 U | 10 U | 10 U | 10 U |
| 1,2,4-Trichlorobenzene..... | 50 % | 10 U | 39 % | 41 % |
| Naphthalene..... ... | 340 U | 10 U | 10 U | 10 U |
| 4-Chloroaniline..... | 340 U | 10 U | 10 U | 10 U |
| Hexachlororbutadiene..... | 340 U | 10 U | 10 U | 10 U |
| 4-Chloro-3-methylphenol..... ..... | 49 % | 10 U | 37 % | 53 % |
| 2-Methylnaphthalene..... | 340 U | 10 U | 10 U | 10 U |
| Hexachlorocyclopentadiene..... | 340 U | 10 U | 10 U | 10 U |
| 2,4,6-Trichlorophenol..... | 340 U | 10 U | 10 U | 10 U |
| 2,4,5-Trichlorophenol..... | 1700 U | 50 U | 50 U | 50 U |
| 2-Chloronaphthalene..... | 340 U | 10 U | 10 U | 10 U |
| 2-Nitroaniline..... ..... | 1700 U | 50 U | 50 U | 50 U |
| Dimethyl Phthalate..... | 340 U | 10 U | 10 U | 10 U |
| Acenaphthylene..... | 340 U | 10 U | 10 U | 10 U |
| 3-Nitroaniline..... | 1700 U | 50 U | 50 U | 50 U |

(continued)

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client ROCKY FLATS 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-070-009 MSD | FB 8810-070-010 | FB 8810-070-010 MS | FB 8810-070-010 MSD |
| Customer ID: | BH88A40 | BH88A41 | BH88A41 | BH88A41 |
| Matrix: | Soil | Water | Water | Water |
| Units: | UG/KG | UG/L | UG/L | UG/L |
| Dilution Factor. | 1 | 1 | 1 | 1 |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 53 | % | 10 | U | 55 | % | 56 | % |
| 2,4-Dinitrophenol | 1700 | U | 50 | U | 50 | U | 50 | U |
| 4-Nitrophenol | 51 | % | 50 | U | 21 | % | 35 | % |
| Dibenzofuran | 340 | U | 10 | U | 10 | U | 10 | U |
| 2,4-Dinitrotoluene | 51 | % | 10 | U | 41 | % | 52 | % |
| 2,6-Dinitrotoluene | 340 | U | 10 | U | 10 | U | 10 | U |
| Diethylphthalate | 340 | U | 10 | U | 10 | U | 10 | U |
| 4-Chlorophenyl-phenylether | 340 | U | 10 | U | 10 | U | 10 | U |
| Fluorene | 340 | U | 10 | U | 10 | U | 10 | U |
| 4-Nitroaniline | 1700 | U | 50 | U | 50 | U | 50 | U |
| 4,6-Dinitro-2-methylphenol | 1700 | U | 50 | U | 50 | U | 50 | U |
| N-Nitrosodiphenylamine | 340 | U | 10 | U | 10 | U | 10 | U |
| 4-Bromophenyl-phenylether. | 340 | U | 10 | U | 10 | U | 10 | U |
| Hexachlorobenzene | 340 | U | 10 | U | 10 | U | 10 | U |
| Pentachlorophenol | 12 | % | 50 | U | 37 | % | 56 | % |
| Phenanthrene | 50 | J | 10 | U | 10 | U | 10 | U |
| Anthracene | 8 | J | 10 | U | 10 | U | 10 | U |
| di-n-Butyl Phthalate | 340 | U | 10 | U | 10 | U | 10 | U |
| Fluoranthene | 97 | J | 10 | U | 10 | U | 10 | U |
| Pyrene | 58 | % | 10 | U | 67 | % | 65 | % |
| Butyl Benzyl Phthalate | 340 | U | 10 | U | 10 | U | 10 | U |
| 3,3'-Dichlorobenzidine | 680 | U | 20 | U | 20 | U | 20 | U |
| Benzo(a)Anthracene. | 41 | J | 10 | U | 10 | U | 10 | U |
| bis(2-Ethylhexyl)Phthalate | 380 | B | 4 | JB | 6 | JB | 6 | JB |
| Chrysene | 57 | J | 10 | U | 10 | U | 10 | U |
| di-n-Octyl Phthalate | 340 | U | 10 | U | 10 | U | 10 | U |
| Benzo(b)Fluoranthene | 65 | J | 10 | U | 10 | U | 10 | U |
| Benzo(k)Fluoranthene | 42 | J | 10 | U | 10 | U | 10 | U |
| Benzo(a)Pyrene | 56 | J | 10 | U | 10 | U | 10 | U |
| Indeno(1,2,3-cd)Pyrene | 340 | U | 10 | U | 10 | U | 10 | U |
| Dibenz(a,h)Anthracene | 340 | U | 10 | U | 10 | U | 10 | U |
| Benzo(g,h,i)Perylene | 340 | U | 10 | U | 10 | U | 10 | U |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number. 8810-070 Client. ROCKY FLATS 

Sample Information

#175
15020

| | | | |
|---|---|---|---|
| RFW Batch ID | 8810-070-011 | 8810-070-011 MS | 8810-070-011 MSD |
| Customer ID. | BH88A42 | BH88A42 | BH88A42 |
| Matrix: | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 |

Sample Information

| | | | |
|---|---|---|---|
| 2-Fluorophenol | 42 % | 46 % | 36 % |
| Phenol-d5: | 36 % | 39 % | 40 % |
| 2,4,6-Br3-Phenol. | 97 % | 113 % | 88 % |
| Nitrobenzene-d5. | 30 % | 35 % | 30 % |
| 2-Fluorobiphenyl | 47 % | 49 % | 58 % |
| p-Terphenyl-d14 | 62 % | 58 % | 74 % |

Sample Information

| | | | |
|---|---|---|---|
| Phenol..... | 350 U | 34 % | 35 % |
| bis(2-Chloroethyl)Ether..... ... | 350 U | 350 U | 350 U |
| 2-Chlorophenol..... | 350 U | 34 % | 31 % |
| 1,3-Dichlorobenzene..... | 350 U | 350 U | 350 U |
| 1,4-Dichlorobenzene ..... | 350 U | 33 % | 18 % |
| Benzyl Alcohol..... | 350 U | 350 U | 350 U |
| 1,2-Dichlorobenzene..... | 350 U | 350 U | 350 U |
| 2-Methylphenol..... | 350 U | 350 U | 350 U |
| bis(2-Chloroisopropyl)Ether..... | 350 U | 350 U | 350 U |
| 4-Methylphenol..... | 350 U | 350 U | 350 U |
| N-Nitroso-di-n-propylamine..... | 350 U | 44 % | 42 % |
| Hexachloroethane... ..... ... . | 350 U | 350 U | 350 U |
| Nitrobenzene.... ..... .... | 350 U | 350 U | 350 U |
| Isophorone..... ..... ... | 350 U | 350 U | 350 U |
| 2-Nitrophenol..... | 350 U | 350 U | 350 U |
| 2,4-Dimethylphenol..... ..... | 350 U | 350 U | 350 U |
| Benzoic Acid..... | 1700 U | 1700 U | 1700 U |
| bis(2-Chloroethoxy)Methane..... | 350 U | 350 U | 350 U |
| 2,4-Dichlorophenol..... | 350 U | 350 U | 350 U |
| 1,2,4-Trichlorobenzene..... | 350 U | 39 % | 34 % |
| Naphthalene..... | 350 U | 350 U | 350 U |
| 4-Chloroaniline..... | 350 U | 350 U | 350 U |
| Hexachlororbutadiene..... | 350 U | 350 U | 350 U |
| 4-Chloro-3-methylphenol... ..... | 350 U | 39 % | 51 % |
| 2-Methylnaphthalene..... | 350 U | 350 U | 350 U |
| Hexachlorocyclopentadiene..... | 350 U | 350 U | 350 U |
| 2,4,6-Trichlorophenol..... | 350 U | 350 U | 350 U |
| 2,4,5-Trichlorophenol..... | 1700 U | 1700 U | 1700 U |
| 2-Chloronaphthalene..... | 350 U | 350 U | 350 U |
| 2-Nitroaniline..... ..... | 1700 U | 1700 U | 1700 U |
| Dimethyl Phthalate..... | 350 U | 350 U | 350 U |
| Acenaphthylene..... | 350 U | 350 U | 350 U |
| 3-Nitroaniline..... | 1700 U | 1700 U | 1700 U |

(continued)

WESTON ANALYTICS

GC/MS DATA SUMMARY

Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



Sample Information

#175
CS020

| | | | |
|---|---|---|---|
| RFW Batch ID: | 8810-070-011 | 8810-070-011 MS | 8810-070-011 MSD |
| Customer ID: | BH88A42 | BH88A42 | BH88A42 |
| Matrix: | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 |

Sample Information

| | | | | | | |
|---|---|---|---|---|---|---|
| Acenaphthene | 350 | U | 48 | % | 58 | % |
| 2,4-Dinitrophenol | 1700 | U | 1700 | U | 1700 | U |
| 4-Nitrophenol | 1700 | U | 34 | % | 45 | % |
| Dibenzofuran | 350 | U | 350 | U | 350 | U |
| 2,4-Dinitrotoluene | 350 | U | 42 | % | 52 | % |
| 2,6-Dinitrotoluene | 350 | U | 350 | U | 350 | U |
| Diethylphthalate | 350 | U | 350 | U | 350 | U |
| 4-Chlorophenyl-phenylether | 350 | U | 350 | U | 350 | U |
| Fluorene | 350 | U | 350 | U | 350 | U |
| 4-Nitroaniline | 1700 | U | 1700 | U | 1700 | U |
| 4,6-Dinitro-2-methylphenol | 1700 | U | 1700 | U | 1700 | U |
| N-Nitrosodiphenylamine | 350 | U | 350 | U | 350 | U |
| 4-Bromophenyl-phenylether | 350 | U | 350 | U | 350 | U |
| Hexachlorobenzene | 350 | U | 350 | U | 350 | U |
| Pentachlorophenol | 1700 | U | 28 | % | 42 | % |
| Phenanthrene | 350 | U | 350 | U | 350 | U |
| Anthracene | 350 | U | 350 | U | 350 | U |
| di-n-Butyl Phthalate | 350 | U | 350 | U | 350 | U |
| Fluoranthene | 350 | U | 350 | U | 350 | U |
| Pyrene | 350 | U | 58 | % | 72 | % |
| Butyl Benzyl Phthalate | 350 | U | 350 | U | 350 | U |
| 3,3'-Dichlorobenzidine | 690 | U | 700 | U | 700 | U |
| Benzo(a)Anthracene | 350 | U | 350 | U | 350 | U |
| bis(2-Ethylhexyl)Phthalate | 120 | JB | 130 | JB | 150 | JB |
| Chrysene | 350 | U | 350 | U | 350 | U |
| di-n-Octyl Phthalate | 350 | U | 350 | U | 350 | U |
| Benzo(b)Fluoranthene | 350 | U | 350 | U | 350 | U |
| Benzo(k)Fluoranthene | 350 | U | 350 | U | 350 | U |
| Benzo(a)Pyrene | 350 | U | 350 | U | 350 | U |
| Indeno(1,2,3-cd)Pyrene | 350 | U | 350 | U | 350 | U |
| Dibenz(a,h)Anthracene | 350 | U | 350 | U | 350 | U |
| Benzo(g,h,i)Perylene | 350 | U | 350 | U | 350 | U |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID:

RFW#: 8810-070-0001 Blank

GCL#: Blank 0001

TENTATIVELY IDENTIFIED COMPOUNDS

One (1) Semivolatile Compound greater than 10% of the nearest internal standard was tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION |
|---|---|---|
| Unknown | 6.53 | 4700 ug/kg J A |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID:

RFW#: 8810-070-0002 Blank

GCL#: Blank 0002

## TENTATIVELY IDENTIFIED COMPOUNDS

Three (3) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | |
|---|---|---|---|---|
| Unknown | 28.70 | 25 | ug/l | J |
| Unknown | 32.10 | 17 | ug/l | J |
| Unknown | 36.60 | 21 | ug/l | J |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID:

RFW#: 8810-070-0003 Blank

GCL#: Blank 0003

## TENTATIVELY IDENTIFIED COMPOUNDS

Four (4) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.51 | 5300 | ug/kg | J | A |
| Unknown | 28.79 | 290 | ug/kg | J | |
| Unknown | 32.08 | 710 | ug/kg | J | |
| Unknown | 36.58 | 950 | ug/kg | J | |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A33

RFW#: 8810-070-002

GCL#: 142967

CS031
#176

## TENTATIVELY IDENTIFIED COMPOUNDS

Six (6) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.52 | 6900 | ug/kg | J | A |
| Unknown | 29.30 | 1100 | ug/kg | J | |
| Unknown | 32.11 | 480 | ug/kg | J | |
| Unknown | 36.62 | 700 | ug/kg | J | |
| Unknown | 46.24 | 2400 | ug/kg | J | |
| Unknown | 46.98 | 880 | ug/kg | J | |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A34

RFW#: 8810-070-003 CS028

GCL#: 142968 #176

## TENTATIVELY IDENTIFIED COMPOUNDS

Eleven (11) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.57 | 5800 | ug/kg | J | A |
| Unknown | 27.53 | 230 | ug/kg | J | |
| Unknown | 27.88 | 170 | ug/kg | J | |
| Unknown | 28.92 | 270 | ug/kg | J | |
| Unknown | 32.13 | 380 | ug/kg | J | |
| Unknown Hydrocarbon | 35.51 | 290 | ug/kg | J | |
| Unknown | 36.64 | 770 | ug/kg | J | |
| Unknown Hydrocarbon | 38.05 | 440 | ug/kg | J | |
| Unknown Hydrocarbon | 41.52 | 400 | ug/kg | J | |
| Unknown | 46.33 | 4000 | ug/kg | J | |
| Unknown | 47.04 | 720 | ug/kg | J | |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A35

RFW#: 8810-070-004

GCL#: 142969

CS029 #176

## TENTATIVELY IDENTIFIED COMPOUNDS

Twelve (12) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.55 | 7800 | ug/kg | J | A |
| Unknown | 32.12 | 390 | ug/kg | J | |
| Unknown Hydrocarbon | 32.38 | 150 | ug/kg | J | |
| Unknown Hydrocarbon | 33.43 | 180 | ug/kg | J | |
| Unknown Hydrocarbon | 34.43 | 200 | ug/kg | J | |
| Unknown Hydrocarbon | 35.49 | 280 | ug/kg | J | |
| Unknown | 36.64 | 710 | ug/kg | J | |
| Unknown Hydrocarbon | 38.03 | 530 | ug/kg | J | |
| Unknown Hydrocarbon | 41.51 | 390 | ug/kg | J | |
| Unknown | 42.04 | 140 | ug/kg | J | |
| Unknown | 46.29 | 3400 | ug/kg | J | |
| Unknown | 47.03 | 1400 | ug/kg | J | |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A36

RFW#: 8810-070-005

GCL#: 142970

CS033
#176

## TENTATIVELY IDENTIFIED COMPOUNDS

Eight (8) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.59 | 6900 | ug/kg | J | A |
| Unknown | 27.89 | 150 | ug/kg | J | |
| Unknown | 32.11 | 540 | ug/kg | J | |
| Unknown | 36.63 | 730 | ug/kg | J | |
| Unknown Hydrocarbon | 38.03 | 340 | ug/kg | J | |
| Unknown Hydrocarbon | 41.50 | 330 | ug/kg | J | |
| Unknown | 46.28 | 2200 | ug/kg | J | |
| Unknown | 47.04 | 1100 | ug/kg | J | |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A37

RFW#: 8810-070-006

GCL#: 142971

CS018
#175

## TENTATIVELY IDENTIFIED COMPOUNDS

Seven (7) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.63 | 11000 | ug/kg | J | A |
| Unknown | 29.00 | 890 | ug/kg | J | |
| Unknown | 32.15 | 670 | ug/kg | J | |
| Unknown | 35.53 | 460 | ug/kg | J | |
| Unknown | 36.67 | 860 | ug/kg | J | |
| Unknown | 46.38 | 3100 | ug/kg | J | |
| Unknown | 47.14 | 1300 | ug/kg | J | |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A38 CS019, #175

RFW#: 8810-070-007

GCL#: 142972

## TENTATIVELY IDENTIFIED COMPOUNDS

Twenty (20) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.58 | 9600 | ug/kg | J | A |
| Unknown Hydrocarbon | 22.18 | 340 | ug/kg | J | |
| Unknown Hydrocarbon | 22.93 | 280 | ug/kg | J | |
| Unknown Hydrocarbon | 23.69 | 430 | ug/kg | J | |
| Unknown Hydrocarbon | 23.77 | 410 | ug/kg | J | |
| Unknown | 24.66 | 780 | ug/kg | J | |
| Unknown Hydrocarbon | 25.13 | 350 | ug/kg | J | |
| Unknown Hydrocarbon | 26.48 | 420 | ug/kg | J | |
| Unknown Hydrocarbon | 27.77 | 370 | ug/kg | J | |
| Unknown Hydrocarbon | 29.01 | 350 | ug/kg | J | |
| Unknown | 30.20 | 390 | ug/kg | J | |
| Unknown | 31.33 | 250 | ug/kg | J | |
| Unknown | 32.13 | 620 | ug/kg | J | |
| Unknown | 32.40 | 250 | ug/kg | J | |
| Unknown | 33.45 | 280 | ug/kg | J | |
| Unknown | 34.46 | 180 | ug/kg | J | |
| Unknown | 35.53 | 290 | ug/kg | J | |
| Unknown | 36.66 | 870 | ug/kg | J | |
| Unknown | 46.32 | 1900 | ug/kg | J | |
| Unknown | 47.08 | 730 | ug/kg | J | |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A39 , CS021, #175

RFW#: 8810-070-008

GCL#: 142973

## TENTATIVELY IDENTIFIED COMPOUNDS

Seventeen (17) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.56 | 7600 | ug/kg | J | A |
| Unknown | 24.65 | 300 | ug/kg | J | |
| Unknown | 32.15 | 410 | ug/kg | J | |
| Unknown | 32.77 | 310 | ug/kg | J | |
| Unknown | 33.47 | 240 | ug/kg | J | |
| Unknown | 33.66 | 410 | ug/kg | J | |
| Unknown | 33.95 | 200 | ug/kg | J | |
| Unknown | 34.48 | 510 | ug/kg | J | |
| Unknown | 34.81 | 210 | ug/kg | J | |
| Phosphoric Acid Ester | 35.37 | 260 | ug/kg | J | |
| Unknown | 35.56 | 390 | ug/kg | J | |
| Phosphoric Acid Ester | 35.70 | 420 | ug/kg | J | |
| Unknown | 36.69 | 700 | ug/kg | J | |
| Unknown | 37.64 | 540 | ug/kg | J | |
| Unknown | 38.10 | 420 | ug/kg | J | |
| Unknown Hydrocarbon | 41.56 | 960 | ug/kg | J | |
| Unknown | 46.34 | 1400 | ug/kg | J | |

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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A40 not on list

RFW#: 8810-070-009

GCL#: 142974

## TENTATIVELY IDENTIFIED COMPOUNDS

Nine (9) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.60 | 8100 | ug/kg | J | A |
| Unknown | 24.63 | 220 | ug/kg | J | |
| Unknown | 32.16 | 900 | ug/kg | J | |
| Unknown | 35.54 | 250 | ug/kg | J | |
| Unknown | 36.70 | 1400 | ug/kg | J | |
| Unknown | 38.08 | 470 | ug/kg | J | |
| Unknown | 41.56 | 450 | ug/kg | J | |
| Unknown | 46.35 | 1200 | ug/kg | J | |
| Unknown | 47.13 | 470 | ug/kg | J | |

WESTON-GULF COAST LABORATORIES, INC
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DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A41 Field Blank

RFW#: 8810-070-010

GCL#: 142975

## TENTATIVELY IDENTIFIED COMPOUNDS

Three (3) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 28.70 | 39 | ug/l | J | B |
| Unknown | 32.08 | 27 | ug/l | J | B |
| Unknown | 36.60 | 35 | ug/l | J | B |

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St, University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

DATA SUMMARY FOR: Rockwell/WO#2029-38-01

CLIENT ID: BH88A42, CS020, #175

RFW#: 8810-070-011

GCL#: 142976

## TENTATIVELY IDENTIFIED COMPOUNDS

Six (6) Semivolatile Compounds greater than 10% of the nearest internal standard were tentatively identified by mass spectral library search. This is exclusive of any priority pollutants, surrogates or internal standards.

| COMPOUND | RETENTION TIME | ESTIMATED CONCENTRATION | | | |
|---|---|---|---|---|---|
| Unknown | 6.48 | 5100 | ug/kg | J | A |
| Unknown | 28.76 | 290 | ug/kg | J | B |
| Unknown | 32.06 | 500 | ug/kg | J | B |
| Unknown | 36.54 | 830 | ug/kg | J | B |
| Unknown | 46.09 | 1900 | ug/kg | J | |
| Unknown | 46.84 | 850 | ug/kg | J | |

WESTON ANALYTICS
VOLATILE ANALYTICAL DATA PACKAGE FOR
RF

DATE RECEIVED: 10/26/88 RFW LOT #: 8810-070

| CLIENT ID | RFW # | MTX | PREP # | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|---|---|
| BH88A32 Trip Blank | 001 | W | 142966 | 10/20/88 | NA | 11/07/88 |
| BH88A33 CS031, #176 | 002 | S | 142967 | 10/20/88 | NA | 11/02/88 |
| BH88A34 CS028, #176 | 003 | S | 142968 | 10/20/88 | NA | 11/02/88 |
| BH88A35 CS029, #176 | 004 | S | 142969 | 10/20/88 | NA | 11/02/88 |
| BH88A36 CS033, #176 | 005 | S | 142970 | 10/20/88 | NA | 11/02/88 |
| BH88A37 CS018, #175 | 006 | S | 142971 | 10/20/88 | NA | 11/02/88 |
| BH88A38 CS019, #175 | 007 | S | 142972 | 10/20/88 | NA | 11/02/88 |
| BH88A39 CS031, #175 | 008 | S | 142973 | 10/20/88 | NA | 11/02/88 |
| BH88A40 [illegible] | 009 | S | 142974 | 10/20/88 | NA | 11/02/88 |
| BH88A41 Field Blank | 010 | W | 142975 | 10/20/88 | NA | 10/31/88 |
| BH88A42 CS020, #175 | 011 | S | 142976 | 10/21/88 | NA | 11/02/88 |

LAB QC:

| | | | | | | |
|---|---|---|---|---|---|---|
| BLANK | 0001BL | W | | NA | NA | 11/07/88 |
| BLANK | 0002BL | W | | NA | NA | 11/02/88 |
| BLANK | 0003BL | W | | NA | NA | 11/02/88 |
| BLANK | 0004BL | W | | NA | NA | 10/31/88 |

WESTON ANALYTICS
VOLATILE ANALYTICAL DATA PACKAGE FOR
RF

DATE RECEIVED: 10/26/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A32 | 8810-070-001 | 10/20/88 | NA | 11/07/88 |
| BH88A33 | 8810-070-002 | 10/20/88 | NA | 11/02/88 |
| BH88A34 | 8810-070-003 | 10/20/88 | NA | 11/02/88 |
| BH88A35 | 8810-070-004 | 10/20/88 | NA | 11/02/88 |
| BH88A36 | 8810-070-005 | 10/20/88 | NA | 11/02/88 |
| BH88A37 | 8810-070-006 | 10/20/88 | NA | 11/02/88 |
| BH88A38 | 8810-070-007 | 10/20/88 | NA | 11/02/88 |
| BH88A39 | 8810-070-008 | 10/20/88 | NA | 11/02/88 |
| BH88A40 | 8810-070-009 | 10/20/88 | NA | 11/02/88 |
| BH88A41 | 8810-070-010 | 10/20/88 | NA | 10/31/88 |
| BH88A42 | 8810-070-011 | 10/21/88 | NA | 11/02/88 |
| LAB QC: | | | | |
| BLANK | 8810-070-0001BL | NA | NA | 11/07/88 |
| BLANK | 8810-070-0002BL | NA | NA | 11/02/88 |
| BLANK | 8810-070-0003BL | NA | NA | 11/02/88 |
| BLANK | 8810-070-0004BL | NA | NA | 10/31/88 |

List of Batch IDs starting with: 8810-070

| RFW Batch ID | Customer ID | Laboratory ID |
|---|---|---|
| 8810-070-0001BL | BLANK | |
| 8810-070-0002BL | BLANK | |
| 8810-070-0003BL | BLANK | |
| 8810-070-0004BL | BLANK | |
| 8810-070-001 | BH88A32 | 142966 |
| 8810-070-002 | BH88A33 | 142967 |
| 8810-070-003 | BH88A34 | 142968 |
| 8810-070-004 | BH88A35 | 142969 |
| 8810-070-005 | BH88A36 | 142970 |
| 8810-070-006 | BH88A37 | 142971 |
| 8810-070-007 | BH88A38 | 142972 |
| 8810-070-008 | BH88A39 | 142973 |
| 8810-070-009 | BH88A40 | 142974 |
| 8810-070-010 | BH88A41 | 142975 |
| 8810-070-011 | BH88A42 | 142976 |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client: ROCKY FLATS 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-070-0001BL | 8810-070-0002BL | 8810-070-0003BL | 8810-070-0004BL |
| Customer ID. | BLANK | BLANK | BLANK | BLANK |
| Matrix: | Water | Water | Water | Water |
| Units: | UG/L | UG/L | UG/L | UG/L |
| Dilution Factor. | 1 | 1 | 1 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 97 % | 97 % | 97 % | 97 % |
| Bromofluorobenzene: | 100 % | 106 % | 100 % | 98 % |
| 1,2-Dichloroethane-d4: | 101 % | 94 % | 100 % | 80 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U | 10 U |
| Bromomethane | 10 U | 10 U | 10 U | 10 U |
| Vinyl Chloride | 10 U | 10 U | 10 U | 10 U |
| Chloroethane | 10 U | 10 U | 10 U | 10 U |
| Methylene Chloride | 8 | 18 | 5.0 U | 10 |
| Acetone | 18 | 10 U | 10 U | 19 |
| Carbon Disulfide | 5 0 U | 5.0 U | 5.0 U | 5 0 U |
| 1,1-Dichloroethene | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 5 0 U | 5 0 U |
| Chloroform | 5 0 U | 5.0 U | 5 0 U | 5 0 U |
| 1,2-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| 2-Butanone | 26 | 10 U | 10 U | 5 J |
| 1,1,1-Trichloroethane | 6 | 5 0 U | 5 0 U | 5 0 U |
| Carbon Tetrachloride | 5 0 U | 5 0 U | 5 0 U | 5 0 U |
| Vinyl Acetate | 10 U | 10 U | 10 U | 10 U |
| Bromodichloromethane | 5 0 U | 5 0 U | 5.0 U | 5 0 U |
| 1,2-Dichloropropane | 5 0 U | 5.0 U | 5 0 U | 5 0 U |
| Trans-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Trichloroethene | 5 0 U | 5.0 U | 5.0 U | 5.0 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| 1,1,2-Trichloroethane | 5 0 U | 5.0 U | 5.0 U | 5 0 U |
| Benzene | 5 0 U | 5 0 U | 5 0 U | 5 0 U |
| cis-1,3-Dichloropropene | 5 0 U | 5.0 U | 5 0 U | 5 0 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U | 10 U |
| Bromoform | 5 0 U | 5.0 U | 5.0 U | 5 0 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U | 10 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 10 U |
| Tetrachloroethene | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Toluene | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Chlorobenzene | 5 0 U | 5.0 U | 5.0 U | 5.0 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Styrene | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Total Xylenes | 5.0 U | 5.0 U | 5.0 U | 5 0 U |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client ROCKY FLATS 

Sample Information

| | Trip Blank | #176 CS031 | #176 CS028 | #176 CS029 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-070-001 | 8810-070-002 | 8810-070-003 | 8810-070-004 |
| Customer ID. | BH88A32 | BH88A33 | BH88A34 | BH88A35 |
| Matrix: | Water | Soil | Soil | Soil |
| Units: | UG/L | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 99 % | 102 % | 102 % | 81 % |
| Bromofluorobenzene: | 98 % | 99 % | 91 % | 77 % |
| 1,2-Dichloroethane-d4: | 100 % | 91 % | 94 % | 106 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U | 10 U |
| Bromomethane | 10 U | 10 U | 10 U | 10 U |
| Vinyl Chloride | 10 U | 10 U | 10 U | 10 U |
| Chloroethane | 10 U | 10 U | 10 U | 10 U |
| Methylene Chloride | 23 B | 5 B | 6 B | 14 |
| Acetone | 14 B | 10 U | 10 U | 26 |
| Carbon Disulfide | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1-Dichloroethene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Chloroform | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,2-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2-Butanone | 7 JB | 10 U | 10 U | 10 U |
| 1,1,1-Trichloroethane | 13 B | 5.0 U | 5.0 U | 5.0 U |
| Carbon Tetrachloride | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Vinyl Acetate | 10 U | 10 U | 10 U | 10 U |
| Bromodichloromethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,2-Dichloropropane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Trans-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Trichloroethene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1,2-Trichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Benzene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| cis-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U | 10 U |
| Bromoform | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U | 10 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 10 U |
| Tetrachloroethene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Toluene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Chlorobenzene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Styrene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Total Xylenes | 5.0 U | 5.0 U | 5.0 U | 5.0 U |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client. ROCKY FLATS 

| Sample Information | #176 CS033 | #175 CS018 | #175 CS019 | #175 CS021 |
|---|---|---|---|---|
| RFW Batch ID. | 8810-070-005 | 8810-070-006 | 8810-070-007 | 8810-070-008 |
| Customer ID: | BH88A36 | BH88A37 | BH88A38 | BH88A39 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

| Sample Information | | | | |
|---|---|---|---|---|
| Toluene-d8: | 99 % | 99 % | 98 % | 104 % |
| Bromofluorobenzene: | 87 % | 93 % | 101 % | 88 % |
| 1,2-Dichloroethane-d4. | 92 % | 96 % | 96 % | 101 % |

| Sample Information | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U | 10 U |
| Bromomethane | 10 U | 10 U | 10 U | 10 U |
| Vinyl Chloride | 10 U | 10 U | 10 U | 10 U |
| Chloroethane | 10 U | 10 U | 10 U | 10 U |
| Methylene Chloride | 8 B | 8 B | 6 B | 10 |
| Acetone | 20 | 10 U | 10 U | 20 |
| Carbon Disulfide | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| 1,1-Dichloroethene | 5 0 U | 5.0 U | 5.0 U | 5.0 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 5 0 U | 5.0 U |
| Chloroform | 5.0 U | 5.0 U | 5 0 U | 5.0 U |
| 1,2-Dichloroethane | 5 0 U | 5.0 U | 5.0 U | 5.0 U |
| 2-Butanone | 10 U | 10 U | 10 U | 10 U |
| 1,1,1-Trichloroethane | 5 0 U | 5.0 U | 5.0 U | 5.0 U |
| Carbon Tetrachloride | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Vinyl Acetate | 10 U | 10 U | 10 U | 10 U |
| Bromodichloromethane | 5 0 U | 5 0 U | 5 0 U | 5 0 U |
| 1,2-Dichloropropane | 5 0 U | 5 0 U | 5 0 U | 5 0 U |
| Trans-1,3-Dichloropropene | 5.0 U | 5 0 U | 5 0 U | 5 0 U |
| Trichloroethene | 5 0 U | 5.0 U | 5.0 U | 5.0 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| 1,1,2-Trichloroethane | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Benzene | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| cis-1,3-Dichloropropene | 5.0 U | 5 0 U | 5.0 U | 5 0 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U | 10 U |
| Bromoform | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U | 10 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 10 U |
| Tetrachloroethene | 5 0 U | 5.0 U | 5.0 U | 5 0 U |
| 1,1,2,2-Tetrachloroethane | 5 0 U | 5.0 U | 5.0 U | 5.0 U |
| Toluene | 5 0 U | 5.0 U | 5.0 U | 5.0 U |
| Chlorobenzene | 5.0 U | 5.0 U | 5.0 U | 5 0 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5.0 U | 5.0 U |
| Styrene | 5.0 U | 5.0 U | 5 0 U | 5.0 U |
| Total Xylenes | 5.0 U | 5.0 U | 5.0 U | 5 0 U |

WESTON ANALYTICS

GC/MS DATA SUMMARY

Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-070 Client ROCKY FLATS 

Sample Information

| | not on list | Field Blank | #195 CS020 |
|---|---|---|---|
| RFW Batch ID: | 8810-070-009 | 8810-070-010 | 8810-070-011 |
| Customer ID: | BH88A40 | BH88A41 | BH88A42 |
| Matrix: | Soil | Water | Soil |
| Units: | UG/KG | UG/L | UG/KG |
| Dilution Factor: | 1 | 1 | 1 |

Sample Information

| | | | |
|---|---|---|---|
| Toluene-d8: | 101 % | 98 % | 99 % |
| Bromofluorobenzene: | 93 % | 99 % | 99 % |
| 1,2-Dichloroethane-d4: | 101 % | 110 % | 101 % |

Sample Information

| | | | |
|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U |
| Bromomethane | 10 U | 10 U | 10 U |
| Vinyl Chloride | 10 U | 10 U | 10 U |
| Chloroethane | 10 U | 10 U | 10 U |
| Methylene Chloride | 24 | 19 B | 28 |
| Acetone | 34 | 22 B | 23 |
| Carbon Disulfide | 5.0 U | 5.0 U | 5.0 U |
| 1,1-Dichloroethene | 5.0 U | 5.0 U | 5.0 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 5.0 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 5.0 U |
| Chloroform | 5.0 U | 4 J | 5.0 U |
| 1,2-Dichloroethane | 5.0 U | 5.0 U | 5.0 U |
| 2-Butanone | 10 U | 17 B | 10 U |
| 1,1,1-Trichloroethane | 5.0 U | 5.0 U | 5.0 U |
| Carbon Tetrachloride | 5.0 U | 5.0 U | 5.0 U |
| Vinyl Acetate | 10 U | 10 U | 10 U |
| Bromodichloromethane | 5.0 U | 5.0 U | 5.0 U |
| 1,2-Dichloropropane | 5.0 U | 5.0 U | 5.0 U |
| Trans-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U |
| Trichloroethene | 5.0 U | 5.0 U | 5.0 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 5.0 U |
| 1,1,2-Trichloroethane | 5.0 U | 5.0 U | 5.0 U |
| Benzene | 5.0 U | 5.0 U | 5.0 U |
| cis-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U |
| Bromoform | 5.0 U | 5.0 U | 5.0 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U |
| 2-Hexanone | 10 U | 10 U | 10 U |
| Tetrachloroethene | 5.0 U | 5.0 U | 5.0 U |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.0 U | 5.0 U |
| Toluene | 5.0 U | 5.0 U | 5.0 U |
| Chlorobenzene | 5.0 U | 5.0 U | 5.0 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5.0 U |
| Styrene | 5.0 U | 5.0 U | 5.0 U |
| Total Xylenes | 5.0 U | 5.0 U | 5.0 U |

semi vols

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ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

# ORGANICS CASE NARRATIVE

Client: ROCKY FLATS
RFW #: 8810S062
W.O. #: 2029-38-01-0000

FRACTION: BNA

1. This set of samples consisted of 1 water and 7 soil samples collected on 10/19/88.

2. The samples were extracted on 10/26/88 and 12/01/88.

3. These samples were analyzed on 11/15/88; 11/17/88; 11/29/88; and 12/01/88 in accordance with SW 846 protocols.

4. All required holding times for these samples were met, with the exception of BH88A030 (8810S062-08) which was re-extracted on 12/01/88 due to poor surrogate recovery.

5. All tuning and calibration criteria were met for all samples.

6. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

7. Of the 90 surrogates analyzed, 5 were outside of QC limits.

8. Of the 22 matrix spike recoveries, none were outside of QC limits.

9. Of the 11 matrix spike RPD's, none were outside QC limits.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.
B - Indicates the compound was found in the blank.

Date: 12/8/88

Approved by: R F Cawley

WESTON

WESTON ANALYTICS
SEMIVOLATILE ANALYTICAL DATA PACKAGE FOR
ROCKY FLATS

DATE RECEIVED: 10/21/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A024 | 8810-062-002 | 10/19/88 | 10/26/88 | 11/17/88 |
| BH88A025 | 8810-062-003 | 10/19/88 | 10/26/88 | 11/17/88 |
| BH88A026 | 8810-062-004 | 10/19/88 | 10/26/88 | 11/17/88 |
| BH88A027 | 8810-062-005 | 10/19/88 | 10/26/88 | 11/29/88 |
| BH88A027 | 8810-062-005 MS | 10/19/88 | 10/26/88 | 11/29/88 |
| BH88A027 | 8810-062-005 MSD | 10/19/88 | 10/26/88 | 11/29/88 |
| BH88A028 | 8810-062-006 | 10/19/88 | 10/25/88 | 11/15/88 |
| BH88A028 | 8810-062-006 DUP | 10/19/88 | 10/25/88 | 11/15/88 |
| BH88A029 | 8810-062-007 | 10/19/88 | 10/26/88 | 11/29/88 |
| BH88A030 | 8810-062-008 | 10/19/88 | 12/01/88 | 12/01/88 |
| BH88A031 | 8810-062-009 | 10/19/88 | 10/26/88 | 11/29/88 |
| LAB QC: | | | | |
| BLANK 10/25 | 8810-062-0001BL | NA | 10/25/88 | 11/15/88 |
| BLANK SPK 10/25 | 8810-062-0001BS | NA | 10/25/88 | 11/15/88 |
| BLK SPK DUP 10/25 | 8810-062-0001BSD | NA | 10/25/88 | 11/15/88 |
| BLANK 10/26 | 8810-062-0002BL | NA | 10/26/88 | 11/16/88 |
| BLANK 12/01 | 8810-062-0003BL | NA | 12/01/88 | 12/02/88 |

R F. Carney FOR
Norman W. Flynn
Organic Section Manager
WESTON Analytical Laboratories

12/8/88
DATE

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKY FLATS 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-0001BL | 8810-062-0001BS | 8810-062-0001BSD | 8810-062-0002BL |
| Customer ID. | BLANK 10/25 | BLANK SPK 10/25 | BLK SPK DUP 10/25 | BLANK 10/26 |
| Matrix: | Water | Water | Water | Soil |
| Units: | UG/L | % RECOVERY | % RECOVERY | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 84 % | 83 % | 85 % | 118 % |
| Phenol-d5. | 99 % | 126 % | 130 % | 142 % |
| 2,4,6-Br3-Phenol: | 80 % | 85 % | 88 % | 82 % |
| Nitrobenzene-d5: | 102 % | 90 % | 88 % | 92 % |
| 2-Fluorobiphenyl: | 58 % | 70 % | 66 % | 78 % |
| p-Terphenyl-d14. | 71 % | 78 % | 76 % | 89 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Phenol | 10 U | 103 % | 106 % | 330 U |
| bis(2-Chloroethyl)Ether | 10 U | 10 U | 10 U | 330 U |
| 2-Chlorophenol | 10 U | 113 % | 112 % | 330 U |
| 1,3-Dichlorobenzene | 10 U | 10 U | 10 U | 330 U |
| 1,4-Dichlorobenzene | 10 U | 72 % | 69 % | 330 U |
| Benzyl Alcohol | 10 U | 10 U | 10 U | 330 U |
| 1,2-Dichlorobenzene | 10 U | 10 U | 10 U | 330 U |
| 2-Methylphenol | 10 U | 10 U | 10 U | 330 U |
| bis(2-Chloroisopropyl)Ether | 10 U | 10 U | 10 U | 330 U |
| 4-Methylphenol | 10 U | 10 U | 10 U | 330 U |
| N-Nitroso-di-n-propylamine | 10 U | 89 % | 88 % | 330 U |
| Hexachloroethane | 10 U | 10 U | 10 U | 330 U |
| Nitrobenzene | 10 U | 10 U | 10 U | 330 U |
| Isophorone | 10 U | 10 U | 10 U | 330 U |
| 2-Nitrophenol | 10 U | 10 U | 10 U | 330 U |
| 2,4-Dimethylphenol | 10 U | 10 U | 10 U | 330 U |
| Benzoic Acid | 50 U | 50 U | 50 U | 1600 U |
| bis(2-Chloroethoxy)Methane | 10 U | 10 U | 10 U | 330 U |
| 2,4-Dichlorophenol | 10 U | 10 U | 10 U | 330 U |
| 1,2,4-Trichlorobenzene | 10 U | 74 % | 69 % | 330 U |
| Naphthalene | 10 U | 10 U | 10 U | 330 U |
| 4-Chloroaniline | 10 U | 10 U | 10 U | 330 U |
| Hexachlororbutadiene | 10 U | 10 U | 10 U | 330 U |
| 4-Chloro-3-methylphenol | 10 U | 100 % | 103 % | 330 U |
| 2-Methylnaphthalene | 10 U | 10 U | 10 U | 330 U |
| Hexachlorocyclopentadiene | 10 U | 10 U | 10 U | 330 U |
| 2,4,6-Trichlorophenol | 10 U | 10 U | 10 U | 330 U |
| 2,4,5-Trichlorophenol | 50 U | 50 U | 50 U | 1600 U |
| 2-Chloronaphthalene | 10 U | 10 U | 10 U | 330 U |
| 2-Nitroaniline | 50 U | 50 U | 50 U | 1600 U |
| Dimethyl Phthalate | 10 U | 10 U | 10 U | 330 U |
| Acenaphthylene | 10 U | 10 U | 10 U | 330 U |

Modified)U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKY FLATS 

Sample Information

| RFW Batch ID: | 8810-062-0001BL | 8810-062-0001BS | 8810-062-0001BSD | 8810-062-0002BL |
|---|---|---|---|---|
| Customer ID: | BLANK 10/25 | BLANK SPK 10/25 | BLK SPK DUP 10/25 | BLANK 10/26 |
| Matrix: | Water | Water | Water | Soil |
| Units: | UG/L | % RECOVERY | % RECOVERY | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3-Nitroaniline | 50 | U | 50 | U | 50 | U | 1600 | U |
| Acenaphthene | 10 | U | 89 | % | 86 | % | 330 | U |
| 2,4-Dinitrophenol | 50 | U | 50 | U | 50 | U | 1600 | U |
| 4-Nitrophenol | 50 | U | 112 | % | 110 | % | 1600 | U |
| Dibenzofuran | 10 | U | 10 | U | 10 | U | 330 | U |
| 2,4-Dinitrotoluene | 10 | U | 128 | % | 125 | % | 330 | U |
| 2,6-Dinitrotoluene | 10 | U | 10 | U | 10 | U | 330 | U |
| Diethylphthalate | 10 | U | 10 | U | 10 | U | 330 | U |
| 4-Chlorophenyl-phenylether | 10 | U | 10 | U | 10 | U | 330 | U |
| Fluorene | 10 | U | 10 | U | 10 | U | 330 | U |
| 4-Nitroaniline | 50 | U | 50 | U | 50 | U | 1600 | U |
| 4,6-Dinitro-2-methylphenol | 50 | U | 50 | U | 50 | U | 1600 | U |
| N-Nitrosodiphenylamine | 10 | U | 10 | U | 10 | U | 330 | U |
| 4-Bromophenyl-phenylether | 10 | U | 10 | U | 10 | U | 330 | U |
| Hexachlorobenzene | 10 | U | 10 | U | 10 | U | 330 | U |
| Pentachlorophenol | 50 | U | 100 | % | 98 | % | 1600 | U |
| Phenanthrene | 10 | U | 10 | U | 10 | U | 330 | U |
| Anthracene | 10 | U | 10 | U | 10 | U | 330 | U |
| di-n-Butyl Phthalate | 2 0 | J | 4.0 | JB | 4.0 | JB | 110 | J |
| Fluoranthene | 10 | U | 10 | U | 10 | U | 330 | U |
| Pyrene | 10 | U | 97 | % | 94 | % | 330 | U |
| Butyl Benzyl Phthalate | 10 | U | 10 | U | 10 | U | 330 | U |
| 3,3'-Dichlorobenzidine | 20 | U | 20 | U | 20 | U | 660 | U |
| Benzo(a)Anthracene | 10 | U | 10 | U | 10 | U | 330 | U |
| bis(2-Ethylhexyl)Phthalate | 10 | U | 10 | U | 10 | U | 330 | U |
| Chrysene | 10 | U | 10 | U | 10 | U | 330 | U |
| di-n-Octyl Phthalate | 10 | U | 10 | U | 10 | U | 330 | U |
| Benzo(b)Fluoranthene | 10 | U | 10 | U | 10 | U | 330 | U |
| Benzo(k)Fluoranthene | 10 | U | 10 | U | 10 | U | 330 | U |
| Benzo(a)Pyrene | 10 | U | 10 | U | 10 | U | 330 | U |
| Indeno(1,2,3-cd)Pyrene | 10 | U | 10 | U | 10 | U | 330 | U |
| Dibenz(a,h)Anthracene | 10 | U | 10 | U | 10 | U | 330 | U |
| Benzo(g,h,i)Perylene | 10 | U | 10 | U | 10 | U | 330 | U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKY FLATS 

Sample Information

| | | # 176 CS024 | #176 CS025 | #176 CS026 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-0003BL | 8810-062-002 | 8810-062-003 | 8810-062-004 |
| Customer ID: | BLANK 12/01 | BH88A024 | BH88A025 | BH88A026 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 5 | 5 | 5 |

Sample Information

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 49 % | 65 % | 59 % | 58 % |
| Phenol-d5. | 63 % | 77 % | 74 % | 70 % |
| 2,4,6-Br3-Phenol· | 65 % | 61 % | 82 % | 78 % |
| Nitrobenzene-d5: | 52 % | 53 % | 45 % | 42 % |
| 2-Fluorobiphenyl: | 43 % | 56 % | 57 % | 57 % |
| p-Terphenyl-d14· | 43 % | 70 % | 76 % | 75 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Phenol | 330 U | 1800 U | 1800 U | 1800 U |
| bis(2-Chloroethyl)Ether | 330 U | 1800 U | 1800 U | 1800 U |
| 2-Chlorophenol | 330 U | 1800 U | 1800 U | 1800 U |
| 1,3-Dichlorobenzene | 330 U | 1800 U | 1800 U | 1800 U |
| 1,4-Dichlorobenzene | 330 U | 1800 U | 1800 U | 1800 U |
| Benzyl Alcohol | 330 U | 1800 U | 1800 U | 1800 U |
| 1,2-Dichlorobenzene | 330 U | 1800 U | 1800 U | 1800 U |
| 2-Methylphenol | 330 U | 1800 U | 1800 U | 1800 U |
| bis(2-Chloroisopropyl)Ether | 330 U | 1800 U | 1800 U | 1800 U |
| 4-Methylphenol | 330 U | 1800 U | 1800 U | 1800 U |
| N-Nitroso-di-n-propylamine | 330 U | 1800 U | 1800 U | 1800 U |
| Hexachloroethane | 330 U | 1800 U | 1800 U | 1800 U |
| Nitrobenzene | 330 U | 1800 U | 1800 U | 1800 U |
| Isophorone | 330 U | 1800 U | 1800 U | 1800 U |
| 2-Nitrophenol | 330 U | 1800 U | 1800 U | 1800 U |
| 2,4-Dimethylphenol | 330 U | 1800 U | 1800 U | 1800 U |
| Benzoic Acid | 1600 U | 8900 U | 8900 U | 8800 U |
| bis(2-Chloroethoxy)Methane | 330 U | 1800 U | 1800 U | 1800 U |
| 2,4-Dichlorophenol | 330 U | 1800 U | 1800 U | 1800 U |
| 1,2,4-Trichlorobenzene | 330 U | 1800 U | 1800 U | 1800 U |
| Naphthalene | 330 U | 1800 U | 1800 U | 1800 U |
| 4-Chloroaniline | 330 U | 1800 U | 1800 U | 1800 U |
| Hexachlororbutadiene | 330 U | 1800 U | 1800 U | 1800 U |
| 4-Chloro-3-methylphenol | 330 U | 1800 U | 1800 U | 1800 U |
| 2-Methylnaphthalene | 330 U | 1800 U | 1800 U | 1800 U |
| Hexachlorocyclopentadiene | 330 U | 1800 U | 1800 U | 1800 U |
| 2,4,6-Trichlorophenol | 330 U | 1800 U | 1800 U | 1800 U |
| 2,4,5-Trichlorophenol | 1600 U | 8900 U | 8900 U | 8800 U |
| 2-Chloronaphthalene | 330 U | 1800 U | 1800 U | 1800 U |
| 2-Nitroaniline | 1600 U | 8900 U | 8900 U | 8800 U |
| Dimethyl Phthalate | 330 U | 1800 U | 1800 U | 1800 U |
| Acenaphthylene | 330 U | 1800 U | 1800 U | 1800 U |
| 3-Nitroaniline | 1600 U | 8900 U | 8900 U | 8800 U |

Modifiers)U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client ROCKY FLATS 

Sample Information

| | | #176 CS024 | #176 CS025 | #176 CS026 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-0003BL | 8810-062-002 | 8810-062-003 | 8810-062-004 |
| Customer ID. | BLANK 12/01 | BH88A024 | BH88A025 | BH88A026 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 5 | 5 | 5 |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| 2,4-Dinitrophenol | 1600 | U | 8900 | U | 8900 | U | 8800 | U |
| 4-Nitrophenol | 1600 | U | 8900 | U | 8900 | U | 8800 | U |
| Dibenzofuran | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| 2,4-Dinitrotoluene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| 2,6-Dinitrotoluene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Diethylphthalate | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| 4-Chlorophenyl-phenylether | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Fluorene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| 4-Nitroaniline | 1600 | U | 8900 | U | 8900 | U | 8800 | U |
| 4,6-Dinitro-2-methylphenol | 1600 | U | 8900 | U | 8900 | U | 8800 | U |
| N-Nitrosodiphenylamine | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| 4-Bromophenyl-phenylether | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Hexachlorobenzene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Pentachlorophenol | 1600 | U | 8900 | U | 8900 | U | 8800 | U |
| Phenanthrene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Anthracene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| di-n-Butyl Phthalate | 150 | J | 1800 | U | 1800 | U | 1800 | U |
| Fluoranthene | 330 | U | 1800 | U | 350 | J | 1800 | U |
| Pyrene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Butyl Benzyl Phthalate | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| 3,3'-Dichlorobenzidine | 660 | U | 3500 | U | 3600 | U | 3500 | U |
| Benzo(a)Anthracene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| bis(2-Ethylhexyl)Phthalate | 410 | | 1800 | U | 1800 | U | 1800 | U |
| Chrysene | 330 | U | 1800 | U | 210 | J | 1800 | U |
| di-n-Octyl Phthalate | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Benzo(b)Fluoranthene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Benzo(k)Fluoranthene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Benzo(a)Pyrene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Indeno(1,2,3-cd)Pyrene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Dibenz(a,h)Anthracene | 330 | U | 1800 | U | 1800 | U | 1800 | U |
| Benzo(g,h,i)Perylene | 330 | U | 1800 | U | 1800 | U | 1800 | U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKY FLATS 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-005 | 8810-062-005 MS | 8810-062-005 MSD | 8810-062-006 |
| Customer ID. | BH88A027 | BH88A027 | BH88A027 | BH88A028 |
| Matrix: | Soil | Soil | Soil | Water |
| Units: | UG/KG | % RECOVERY | % RECOVERY | UG/L |
| Dilution Factor. | 5 | 5 | 5 | 1 |

Sample Information

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 48 % | 63 % | 63 % | 88 % |
| Phenol-d5. | 77 % | 111 % | 107 % | 109 % |
| 2,4,6-Br3-Phenol· | 74 % | 23 % | 25 % | 74 % |
| Nitrobenzene-d5: | 46 % | 57 % | 53 % | 95 % |
| 2-Fluorobiphenyl: | 62 % | 57 % | 54 % | 64 % |
| p-Terphenyl-d14· | 53 % | 54 % | 54 % | 99 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Phenol..... | 1900 U | 85 % | 83 % | 10 U |
| bis(2-Chloroethyl)Ether..... .. . | 1900 U | 1900 U | 1900 U | 10 U |
| 2-Chlorophenol.... ..... .. | 1900 U | 67 % | 68 % | 10 U |
| 1,3-Dichlorobenzene..... | 1900 U | 1900 U | 1900 U | 10 U |
| 1,4-Dichlorobenzene..... | 1900 U | 49 % | 52 % | 10 U |
| Benzyl Alcohol..... | 1900 U | 1900 U | 1900 U | 10 U |
| 1,2-Dichlorobenzene..... .... ... | 1900 U | 1900 U | 1900 U | 10 U |
| 2-Methylphenol.... ..... .... | 1900 U | 1900 U | 1900 U | 10 U |
| bis(2-Chloroisopropyl)Ether.. .. .. | 1900 U | 1900 U | 1900 U | 10 U |
| 4-Methylphenol..... . ..... | 1900 U | 1900 U | 1900 U | 10 U |
| N-Nitroso-di-n-propylamine..... | 1900 U | 80 % | 72 % | 10 U |
| Hexachloroethane..... ..... | 1900 U | 1900 U | 1900 U | 10 U |
| Nitrobenzene..... .... | 1900 U | 1900 U | 1900 U | 10 U |
| Isophorone..... ..... | 1900 U | 1900 U | 1900 U | 10 U |
| 2-Nitrophenol..... | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4-Dimethylphenol..... ..... . | 1900 U | 1900 U | 1900 U | 10 U |
| Benzoic Acid..... ... | 9300 U | 9300 U | 9300 U | 50 U |
| bis(2-Chloroethoxy)Methane. .. .... | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4-Dichlorophenol..... .. ... | 1900 U | 1900 U | 1900 U | 10 U |
| 1,2,4-Trichlorobenzene..... | 1900 U | 33 % | 34 % | 10 U |
| Naphthalene..... . .. | 1900 U | 1900 U | 1900 U | 10 U |
| 4-Chloroaniline..... ... | 1900 U | 1900 U | 1900 U | 10 U |
| Hexachlororbutadiene..... | 1900 U | 1900 U | 1900 U | 10 U |
| 4-Chloro-3-methylphenol..... | 1900 U | 72 % | 72 % | 10 U |
| 2-Methylnaphthalene..... | 1900 U | 1900 U | 1900 U | 10 U |
| Hexachlorocyclopentadiene.. ..... | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4,6-Trichlorophenol..... | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4,5-Trichlorophenol..... | 9300 U | 9300 U | 9300 U | 50 U |
| 2-Chloronaphthalene..... | 1900 U | 1900 U | 1900 U | 10 U |
| 2-Nitroaniline..... | 9300 U | 9300 U | 9300 U | 50 U |
| Dimethyl Phthalate..... | 1900 U | 1900 U | 1900 U | 10 U |
| Acenaphthylene..... ... | 1900 U | 1900 U | 1900 U | 10 U |
| 3-Nitroaniline..... | 9300 U | 9300 U | 9300 U | 50 U |

Modified)U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client. ROCKY FLATS 

Sample Information

| RFW Batch ID | 8810-062-005 | 8810-062-005 MS | 8810-062-005 MSD | 8810-062-006 |
|---|---|---|---|---|
| Customer ID | BH88A027 | BH88A027 | BH88A027 | BH88A028 |
| Matrix | Soil | Soil | Soil | Water |
| Units. | UG/KG | % RECOVERY | % RECOVERY | UG/L |
| Dilution Factor | 5 | 5 | 5 | 1 |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 1900 | U | 70 | % | 67 | % | 10 | U |
| 2,4-Dinitrophenol | 9300 | U | 9300 | U | 9300 | U | 50 | U |
| 4-Nitrophenol | 9300 | U | 76 | % | 60 | % | 50 | U |
| Dibenzofuran | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| 2,4-Dinitrotoluene | 1900 | U | 75 | % | 70 | % | 10 | U |
| 2,6-Dinitrotoluene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Diethylphthalate | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| 4-Chlorophenyl-phenylether. | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Fluorene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| 4-Nitroaniline | 9300 | U | 9300 | U | 9300 | U | 50 | U |
| 4,6-Dinitro-2-methylphenol | 9300 | U | 9300 | U | 9300 | U | 50 | U |
| N-Nitrosodiphenylamine | 1900 | U | 710 | J | 1900 | U | 10 | U |
| 4-Bromophenyl-phenylether | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Hexachlorobenzene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Pentachlorophenol | 9300 | U | 29 | % | 27 | % | 50 | U |
| Phenanthrene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Anthracene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| di-n-Butyl Phthalate | 1900 | U | 220 | JB | 240 | JB | 10 | U |
| Fluoranthene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Pyrene | 1900 | U | 78 | % | 79 | % | 10 | U |
| Butyl Benzyl Phthalate | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| 3,3'-Dichlorobenzidine | 3700 | U | 3700 | U | 3700 | U | 20 | U |
| Benzo(a)Anthracene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| bis(2-Ethylhexyl)Phthalate | 310 | J | 1900 | U | 1900 | U | 10 | U |
| Chrysene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| di-n-Octyl Phthalate | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzo(b)Fluoranthene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzo(k)Fluoranthene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzo(a)Pyrene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Indeno(1,2,3-cd)Pyrene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Dibenz(a,h)Anthracene | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzo(g,h,i)Perylene | 1900 | U | 1900 | U | 1900 | U | 10 | U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number. 8810-062 Client: ROCKY FLATS 

Sample Information

| | | #176 CS027 | #176 CS032 | #176 CS030 |
|---|---|---|---|---|
| RFW Batch ID. | 8810-062-006 DUP | 8810-062-007 | 8810-062-008 | 8810-062-009 |
| Customer ID. | BH88A028 | BH88A029 | BH88A030 | BH88A031 |
| Matrix: | Water | Soil | Soil | Soil |
| Units: | UG/L | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 5 | 1 | 5 |

Sample Information

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 91 % | 57 % | 70 % | 60 % |
| Phenol-d5. | 110 % | 91 % | 100 % | 98 % |
| 2,4,6-Br3-Phenol | 73 % | 16 % | 126 % | 19 % |
| Nitrobenzene-d5 | 77 % | 47 % | 86 % | 50 % |
| 2-Fluorobiphenyl | 64 % | 48 % | 78 % | 52 % |
| p-Terphenyl-d14 | 90 % | 43 % | 94 % | 44 % |

Sample Information

| | | | | |
|---|---|---|---|---|
| Phenol | 10 U | 1700 U | 350 U | 1800 U |
| bis(2-Chloroethyl)Ether | 10 U | 1700 U | 350 U | 1800 U |
| 2-Chlorophenol | 10 U | 1700 U | 350 U | 1800 U |
| 1,3-Dichlorobenzene | 10 U | 1700 U | 350 U | 1800 U |
| 1,4-Dichlorobenzene | 10 U | 1700 U | 350 U | 1800 U |
| Benzyl Alcohol | 10 U | 1700 U | 350 U | 1800 U |
| 1,2-Dichlorobenzene | 10 U | 1700 U | 350 U | 1800 U |
| 2-Methylphenol | 10 U | 1700 U | 350 U | 1800 U |
| bis(2-Chloroisopropyl)Ether | 10 U | 1700 U | 350 U | 1800 U |
| 4-Methylphenol | 10 U | 1700 U | 350 U | 1800 U |
| N-Nitroso-di-n-propylamine | 10 U | 1700 U | 350 U | 1800 U |
| Hexachloroethane | 10 U | 1700 U | 350 U | 1800 U |
| Nitrobenzene | 10 U | 1700 U | 350 U | 1800 U |
| Isophorone | 10 U | 1700 U | 350 U | 1800 U |
| 2-Nitrophenol | 10 U | 1700 U | 350 U | 1800 U |
| 2,4-Dimethylphenol | 10 U | 1700 U | 350 U | 1800 U |
| Benzoic Acid | 50 U | 8700 U | 1800 U | 8900 U |
| bis(2-Chloroethoxy)Methane | 10 U | 1700 U | 350 U | 1800 U |
| 2,4-Dichlorophenol | 10 U | 1700 U | 350 U | 1800 U |
| 1,2,4-Trichlorobenzene | 10 U | 1700 U | 350 U | 1800 U |
| Naphthalene | 10 U | 1700 U | 350 U | 1800 U |
| 4-Chloroaniline | 10 U | 1700 U | 350 U | 1800 U |
| Hexachlorobutadiene | 10 U | 1700 U | 350 U | 1800 U |
| 4-Chloro-3-methylphenol | 10 U | 1700 U | 350 U | 1800 U |
| 2-Methylnaphthalene | 10 U | 1700 U | 350 U | 1800 U |
| Hexachlorocyclopentadiene | 10 U | 1700 U | 350 U | 1800 U |
| 2,4,6-Trichlorophenol | 10 U | 1700 U | 350 U | 1800 U |
| 2,4,5-Trichlorophenol | 50 U | 8700 U | 1800 U | 8900 U |
| 2-Chloronaphthalene | 10 U | 1700 U | 350 U | 1800 U |
| 2-Nitroaniline | 50 U | 8700 U | 1800 U | 8900 U |
| Dimethyl Phthalate | 10 U | 1700 U | 350 U | 1800 U |
| Acenaphthylene | 10 U | 1700 U | 350 U | 1800 U |
| 3-Nitroaniline | 50 U | 8700 U | 1800 U | 8900 U |

Modifiers)U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
SEMIVOLATILE DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKY FLATS 

Sample Information

| | | #176 CS027 | #176 CS032 | #176 CS030 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-006 DUP | 8810-062-007 | 8810-062-008 | 8810-062-009 |
| Customer ID: | BH88A028 | BH88A029 | BH88A030 | BH88A031 |
| Matrix: | Water | Soil | Soil | Soil |
| Units: | UG/L | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 5 | 1 | 5 |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Acenaphthene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,4-Dinitrophenol | 50 | U | 8700 | U | 1800 | U | 8900 | U |
| 4-Nitrophenol | 50 | U | 8700 | U | 160 | J | 8900 | U |
| Dibenzofuran | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,4-Dinitrotoluene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,6-Dinitrotoluene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Diethylphthalate | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 4-Chlorophenyl-phenylether | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Fluorene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 4-Nitroaniline | 50 | U | 8700 | U | 1800 | U | 8900 | U |
| 4,6-Dinitro-2-methylphenol | 50 | U | 8700 | U | 1800 | U | 8900 | U |
| N-Nitrosodiphenylamine | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 4-Bromophenyl-phenylether | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Hexachlorobenzene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Pentachlorophenol | 50 | U | 8700 | U | 110 | J | 8900 | U |
| Phenanthrene | 10 | U | 1700 | U | 350 | U | 210 | J |
| Anthracene | 10 | U | 1700 | U | 41 | J | 1800 | U |
| di-n-Butyl Phthalate | 10 | U | 1700 | U | 350 | U | 450 | JB |
| Fluoranthene | 10 | U | 1700 | U | 58 | J | 290 | J |
| Pyrene | 10 | U | 1700 | U | 56 | J | 370 | J |
| Butyl Benzyl Phthalate | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 3,3'-Dichlorobenzidine | 20 | U | 3500 | U | 700 | U | 3500 | U |
| Benzo(a)Anthracene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| bis(2-Ethylhexyl)Phthalate | 10 | U | 1700 | U | 600 | B | 1800 | U |
| Chrysene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| di-n-Octyl Phthalate | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Benzo(b)Fluoranthene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Benzo(k)Fluoranthene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Benzo(a)Pyrene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Indeno(1,2,3-cd)Pyrene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Dibenz(a,h)Anthracene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Benzo(g,h,i)Perylene | 10 | U | 1700 | U | 350 | U | 1800 | U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit B=Present in blank. NS=Not spiked %=Percent recovery

ROCKY FLATS

December 8, 1988

RFW#: 88-10-S062



Tentatively Identified Compounds,
BNA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BLK QA88407 | 11/15/88 | 529 | UNKNOWN | 11 |
| | | 566 | UNKNOWN | 7 |
| BH88A028 | 11/15/88 | 527 | UNKNOWN | 9 |
| | | 565 | UNKNOWN | 7 |
| | | 2076 | UNKNOWN | 17 |
| BH88A028 DUP | 11/15/88 | 525 | UNKNOWN | 6 |
| | | 563 | UNKNOWN | 5 |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/Kg |
|---|---|---|---|---|
| BLK QA88412 | 11/16/88 | 526 | UNKNOWN | 200 |
| | | 1862 | UNKNOWN | 700 |
| BLK QA88438RE | 12/02/88 | | NONE FOUND | |
| BH88A024 | 11/17/88 | 2525 | UNKNOWN | 3000 |
| | | 2661 | UNKNOWN | 3200 |
| BH88A025 | 11/17/88 | 1862 | UNKNOWN | 900 |
| | | 2829 | UNKNOWN | 8000 |

ROCKY FLATS

December 8, 1988

RFW#: 88-10-S062



Tentatively Identified Compounds,
BNA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A026 | 11/17/88 | 2828 | UNKNOWN | 4400 |
| | | 2877 | UNKNOWN | 2200 |
| BH88A027 | 11/29/88 | 1939 | UNKNOWN | 1400 |
| | | 2946 | UNKNOWN | 3500 |
| BH88A029 | 11/29/88 | 1892 | UNKNOWN | 1700 |
| | | 1944 | UNKNOWN | 2200 |
| | | 2964 | UNKNOWN | 2800 |
| BH88A030-RE | 12/01/88 | 527 | UNKNOWN | 330 |
| | | 578 | UNKNOWN | 2700 |
| | | 1656 | UNKNOWN | 2000 |
| | | 1949 | UNKNOWN | 2400 |
| | | 2063 | UNKNOWN | 1500 |
| | | 2241 | UNKNOWN | 1700 |
| | | 2494 | UNKNOWN | 1300 |
| | | 2911 | UNKNOWN | 20000 |
| | | 2966 | UNKNOWN | 9000 |
| BH88A031 | 11/29/88 | 1891 | UNKNOWN | 4900 |
| | | 1944 | UNKNOWN | 1100 |
| | | 2962 | UNKNOWN | 3300 |

Reviewed and approved R F. Carney
Robert Carney
Unit Leader

metals 176

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number 8810-062 Client: ROCKY FLATS 

Sample Information

| | | | #176 CS024 | #176 CS025 |
|---|---|---|---|---|
| RFW Batch ID | 8810-062-0001BL | 8810-062-0002BL | 8810-062-002 | 8810-062-003 |
| Customer ID | BLANK | BLANK | BH88A024 | BH88A025 |
| Matrix: | Soil | Water | Soil | Soil |
| Units: | MG/KG | MG/L | MG/KG | MG/KG |

Sample Information

| | | | | | |
|---|---|---|---|---|---|
| Silver (Ag), total | 2.0 U | 0.010 U | 3.1 | 2 1 U |
| Aluminum (Al), total | 40.0 U | 0.200 U | 11800 | 9820 |
| Arsenic (As), total | 2.0 U | 0.010 U | 6.9 | 2 1 U |
| Barium (Ba), total | 40 0 U | 0.200 U | 107 | 75 7 |
| Beryllium (Be), total | 1.0 U | 0.005 U | 1.1 | 1 0 U |
| Calcium (Ca), total | 200 U | 5.0 U | 13600 | 7580 |
| Cadmium (Cd), total | 1 0 U | 0 005 U | 5 4 | 2 3 |
| Cobalt (Co), total | 10 0 U | 0.050 U | 10.3 U | 10 4 U |
| Chromium (Cr), total | 2 0 U | 0 010 U | 21 1 | 12 9 |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 5.0 U | 0.025 U | 13 1 | 17 4 |
| Iron (Fe), total | 20 0 U | 0.100 U | 11500 | 11400 |
| Mercury (Hg), total | 0 1 U | 0.0002 U | 0 1 U | 0 1 U |
| Potassium (K ), total | 1000 U | 5 0 U | 2840 | 1800 |
| Lithium (Li), total | | | | |
| Magnesium (Mg), total | 200 U | 5.0 U | 2150 | 1660 |
| Manganese (Mn), total | 3 0 U | 0 015 U | 363 | 235 |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 200 U | 5 0 U | 460 | 340 |
| Nickel (Ni), total | 8 0 U | 0.040 U | 47 4 | 70.3 |
| Lead (Pb), total | 1.0 U | 0.005 U | 73 8 | 13 4 |
| Antimony (Sb), total | 12 0 U | 0.060 U | 12 9 U | 12 4 U |
| Selenium (Se), total | 1.0 U | 0 005 U | 1 1 U | 1 0 U |
| Strontium (Sr), total | 40 0 U | 0.200 U | 42 2 | 41 6 U |
| Thallium (Tl), total | 2 0 U | 0 010 U | 2 2 U | 2 1 U |
| Vanadium (V ), total | 10 0 U | 0.050 U | 32 9 | 29 1 |
| Zinc (Zn), total | 4 0 U | 0.020 U | 92 6 | 51.0 |

Modifiers U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-062 Client ROCKY FLATS 

Sample Information

#176 CS026 not on list

| RFW Batch ID | 8810-062-004 | 8810-062-005 | 8810-062-005 DUP | 8810-062-005 MS |
|---|---|---|---|---|
| Customer ID: | BH88A026 | BH88A027 | BH88A027 | BH88A027 |
| Matrix | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | MG/KG | % RECOVERY |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total | 2.1 U | 2.2 U | | |
| Aluminum (Al), total | 12500 | 13500 | | |
| Arsenic (As), total | 8.8 | 8.6 | 9 8 | 67 % |
| Barium (Ba), total | 82.9 | 75.5 | | |
| Beryllium (Be), total | 1.3 | 1.2 | | |
| Calcium (Ca), total | 3490 | 3010 | | |
| Cadmium (Cd), total | 4 5 | 3 5 | | |
| Cobalt (Co), total | 10.3 U | 11 1 U | | |
| Chromium (Cr), total | 15.6 | 14.8 | | |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 12 2 | 10.4 | | |
| Iron (Fe), total | 14100 | 15800 | | |
| Mercury (Hg), total | 0 1 U | 0 1 U | 0 1 U | 80 % |
| Potassium (K ), total | 2320 | 2170 | | |
| Lithium (Li), total | | | | |
| Magnesium (Mg), total | 1630 | 1570 | | |
| Manganese (Mn), total | 205 | 184 | | |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 206 U | 430 | | |
| Nickel (Ni), total | 38 6 | 47.4 | | |
| Lead (Pb), total | 17 7 | 16.1 | 20 1 | * |
| Antimony (Sb), total | 12 8 U | 13 5 U | 13 2 U | 0 % |
| Selenium (Se), total | 1 1 U | 1 1 U | 1.1 U | 0 % |
| Strontium (Sr), total | 41 3 U | 44 3 U | | |
| Thallium (Tl), total | 2 1 U | 2.3 U | 2 2 U | 94 % |
| Vanadium (V ), total | 43 5 | 46.0 | | |
| Zinc (Zn), total | 35 1 | 31.9 | | |

Modifiers: U=Analyzed, not detected. J=Present below detection limit B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number 8810-062 Client ROCKY FLATS 

Sample Information

| | Field Blank | | | #176 CS027 |
|---|---|---|---|---|
| RFW Batch ID | 8810-062-006 | 8810-062-006 DUP | 8810-062-006 MS | 8810-062-007 |
| Customer ID | BH88A028 | BH88A028 | BH88A028 | BH88A029 |
| Matrix | Water | Water | Water | Soil |
| Units. | MG/L | MG/L | % RECOVERY | MG/KG |

Sample Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total..... | 0 010 | U | 0.010 | U | 25 | % | 2 1 | U |
| Aluminum | (Al), total.. ... ... . | 0 200 | U | 0.200 | U | 100 | % | 12100 | |
| Arsenic | (As), total..... . | 0 010 | U | 0.010 | U | 93 | % | 6 6 | |
| Barium | (Ba), total . .... . | 0 200 | U | 0.200 | U | 100 | % | 92 0 | |
| Beryllium | (Be), total . .... .. | 0 005 | U | 0.005 | U | 90 | % | 1 1 | U |
| Calcium | (Ca), total . ..... . ... | 5 0 | U | 5.0 | U | NA | | 3490 | |
| Cadmium | (Cd), total..... . . | 0 005 | U | 0 005 | U | 95 | % | 4 7 | |
| Cobalt | (Co), total. ... . . .. | 0 050 | U | 0.050 | U | 96 | % | 10.6 | U |
| Chromium | (Cr), total. . . .. . | 0 010 | U | 0 010 | U | 94 | % | 12 9 | |
| Cesium | (Cs), total . .... . | | | | | | | | |
| Copper | (Cu), total .... .. | 0.025 | U | 0.025 | U | 95 | % | 13 1 | |
| Iron | (Fe), total... . .. . | 0.100 | U | 0 100 | U | 100 | % | 13200 | |
| Mercury | (Hg), total . | 0 0002 | U | NA | | NA | | 0 1 | U |
| Potassium | (K ), total..... | 5.0 | U | 5.0 | U | NA | | 2280 | |
| Lithium | (Li), total . | | | | | | | | |
| Magnesium | (Mg), total . | 5 0 | U | 5 0 | U | NA | | 1710 | |
| Manganese | (Mn), total .. .. . . | 0 015 | U | 0.015 | U | 94 | % | 261 | |
| Molybdenum | (Mo), total . | | | | | | | | |
| Sodium | (Na), total ... . ..... | 5 0 | U | 5 0 | U | NA | | 265 | |
| Nickel | (Ni), total .... | 0 040 | U | 0 040 | U | 90 | % | 48 5 | |
| Lead | (Pb), total .. . .. .. .. | 0.005 | U | 0.005 | U | 100 | % | 24 3 | |
| Antimony | (Sb), total . . ..... | 0 060 | U | 0.060 | U | 93 | % | 11 8 | U |
| Selenium | (Se), total . ... | 0 005 | U | 0.005 | U | 84 | % | 1 0 | U |
| Strontium | (Sr), total .. . . | 0.200 | U | 0.200 | U | 100 | % | 42 3 | U |
| Thallium | (Tl), total..... . | 0 010 | U | 0 010 | U | 156 | % | 2 3 | |
| Vanadium | (V ), total .. . .. | 0 050 | U | 0 050 | U | 95 | % | 34 5 | |
| Zinc | (Zn), total . . | 0.020 | U | 0 091 | | 94 | % | 41 5 | |

Modifiers· U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number. 8810-062 Client: ROCKY FLATS 

Sample Information

| | #176 CS032 | #176 CS030 | ? | ? |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-008 | 8810-062-009 | 8810-062-LCS1 | 8810-062-LCS2 |
| Customer ID: | BH88A030 | BH88A031 | LCS | LCS |
| Matrix. | Soil | Soil | Soil | Water |
| Units: | MG/KG | MG/KG | % RECOVERY | % RECOVERY |

Sample Information

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total | 2.1 | U | 2.2 | U | 110 | % | 102 % |
| Aluminum | (Al), total | 13200 | | 13900 | | 90 | % | 95 % |
| Arsenic | (As), total | 4 7 | | 19.4 | | 100 | % | 94 % |
| Barium | (Ba), total | 120 | | 43.0 | U | 90 | % | 92 % |
| Beryllium | (Be), total | 1 1 | | 1.1 | | 90 | % | 99 % |
| Calcium | (Ca), total | 4060 | | 3900 | | 90 | % | 98 % |
| Cadmium | (Cd), total | 3.6 | | 7.3 | | 90 | % | 94 % |
| Cobalt | (Co), total | 10.5 | U | 10.8 | U | 100 | % | 94 % |
| Chromium | (Cr), total | 15 0 | | 18.7 | | 90 | % | 95 % |
| Cesium | (Cs), total | | | | | | | |
| Copper | (Cu), total | 11 8 | | 21.4 | | 100 | % | 95 % |
| Iron | (Fe), total | 13400 | | 17500 | | 90 | % | 97 % |
| Mercury | (Hg), total | 0.1 | U | 0.1 | U | 91 | % | 82 % |
| Potassium | (K ), total | 2770 | | 2340 | | 90 | % | 91 % |
| Lithium | (Li), total | | | | | | | |
| Magnesium | (Mg), total | 2310 | | 1770 | | 90 | % | 100 % |
| Manganese | (Mn), total | 330 | | 261 | | 90 | % | 98 % |
| Molybdenum | (Mo), total | | | | | | | |
| Sodium | (Na), total | 615 | | 365 | | 80 | % | 84 % |
| Nickel | (Ni), total | 37 9 | | 45.6 | | 90 | % | 89 % |
| Lead | (Pb), total | 15 9 | | 33.0 | | 110 | % | 99 % |
| Antimony | (Sb), total | 11.9 | U | 12.8 | U | 112 | % | 111 % |
| Selenium | (Se), total | 1 0 | U | 1.1 | U | 100 | % | 90 % |
| Strontium | (Sr), total | 42 1 | U | 43.0 | U | 100 | % | 100 % |
| Thallium | (Tl), total | 2.0 | U | 2.1 | U | 110 | % | 111 % |
| Vanadium | (V ), total | 30 6 | | 32 5 | | 90 | % | 101 % |
| Zinc | (Zn), total | 41 5 | | 58 1 | | 90 | % | 94 % |

Modifiers· U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

# ORGANICS CASE NARRATIVE

Client: ROCKWELL
RFW #: 8810S062
W.O. #: 2029-38-01-0000

FRACTION: VOA

1. This set of samples consisted of 7 soil and 2 water samples collected on 10/19/88.

2. These samples were analyzed on 10/29/88 and 10/31/88 in accordance with SW 846 protocols.

3. All required holding times for these samples were met.

4. All tuning and calibration criteria were met for all samples.

5. All blanks analyzed were below allowable limits of contamination as set forth in the EPA CLP SOW.

6. Of the 39 surrogates analyzed, none were outside of QC limits.

7. Of the 10 matrix spike recoveries, none were outside of QC limits.

8. Of the 5 matrix spike RPD's, none were outside QC limits.

The following data qualifiers are used in this report:

U - Indicates that the compound was analyzed for but not detected.
J - Indicates an estimated trace value.

Date: 11/18/88

Approved by:

WESTON

# WESTON ANALYTICS
# VOLATILE ANALYTICAL DATA PACKAGE FOR
# ROCKWELL INTERNATIONAL - RF

**DATE RECEIVED: 10/21/88**

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A023 Trip Blank | 8810-062-001 | 10/19/88 | NA | 10/29/88 |
| BH88A024 CS024, #176 | 8810-062-002 | 10/19/88 | NA | 10/31/88 |
| BH88A025 CS025, #176 | 8810-062-003 | 10/19/88 | NA | 10/31/88 |
| BH88A026 CS026, #176 | 8810-062-004 | 10/19/88 | NA | 10/31/88 |
| BH88A027 not on list | 8810-062-005 | 10/19/88 | NA | 10/31/88 |
| BH88A027 | 8810-062-005 MS | 10/19/88 | NA | 10/31/88 |
| BH88A027 | 8810-062-005 MSD | 10/19/88 | NA | 10/31/88 |
| BH88A028 Field Blank | 8810-062-006 | 10/19/88 | NA | 10/31/88 |
| BH88A029 CS027, #176 | 8810-062-007 | 10/19/88 | NA | 10/31/88 |
| BH88A030 CS032, #176 | 8810-062-008 | 10/19/88 | NA | 10/31/88 |
| BH88A031 CS030, #176 | 8810-062-009 | 10/19/88 | NA | 10/29/88 |

**LAB QC:**

| | | | | |
|---|---|---|---|---|
| BLANK 10/29 | 8810-062-0001BL | NA | NA | 10/29/88 |
| BLANK 10/31 | 8810-062-0002BL | NA | NA | 10/31/88 |

R. F. Carney

11/17/88
DATE

WESTON Analytical Laboratories

WESTON ANALYTICS
VOLATILE DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKWELL INTERNATIONAL - RF 

Sample Information

| | | | Trip Blank | #176 CS024 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-0001BL | 8810-062-0002BL | 8810-062-001 | 8810-062-002 |
| Customer ID: | BLANK 10/29 | BLANK 10/31 | BH88A023 | BH88A024 |
| Matrix: | Water | Water | Water | Soil |
| Units: | UG/L | UG/L | UG/L | UG/KG |
| Dilution Factor. | 1 | 1 | 1 | 1 |

Surrogate Recovery

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 99 % | 101 % | 98 % | 109 % |
| Bromofluorobenzene: | 98 % | 98 % | 101 % | 92 % |
| 1,2-Dichloroethane-d4: | 95 % | 96 % | 97 % | 96 % |

Analytes

| | | | | |
|---|---|---|---|---|
| Chloromethane | 10 U | 10 U | 10 U | 11 U |
| Bromomethane | 10 U | 10 U | 10 U | 11 U |
| Vinyl Chloride | 10 U | 10 U | 10 U | 11 U |
| Chloroethane | 10 U | 10 U | 10 U | 11 U |
| Methylene Chloride | 4.0 J | 6 0 | 3.0 JB | 25 B |
| Acetone | 10 U | 10 U | 10 U | 14 |
| Carbon Disulfide | 5 0 U | 5.0 U | 5.0 U | 5.6 U |
| 1,1-Dichloroethene | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| 1,1-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5 6 U |
| Trans-1,2-Dichloroethene | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| Chloroform | 5.0 U | 5.0 U | 5.0 U | 1.0 J |
| 1,2-Dichloroethane | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| 2-Butanone | 10 U | 10 U | 10 U | 11 U |
| 1,1,1-Trichloroethane | 5.0 U | 5.0 U | 5.0 U | 5 6 U |
| Carbon Tetrachloride | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| Vinyl Acetate | 10 U | 10 U | 10 U | 11 U |
| Bromodichloromethane | 5 0 U | 5.0 U | 5.0 U | 5.6 U |
| 1,2-Dichloropropane | 5 0 U | 5.0 U | 5.0 U | 5.6 U |
| Trans-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| Trichloroethene | 5 0 U | 5.0 U | 5.0 U | 5.6 U |
| Dibromochloromethane | 5.0 U | 5.0 U | 5.0 U | 5 6 U |
| 1,1,2-Trichloroethane | 5 0 U | 5.0 U | 5.0 U | 5.6 U |
| Benzene | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| cis-1,3-Dichloropropene | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| 2-Chloroethylvinylether | 10 U | 10 U | 10 U | 11 U |
| Bromoform | 5.0 U | 5.0 U | 5.0 U | 5 6 U |
| 4-Methyl-2-pentanone | 10 U | 10 U | 10 U | 11 U |
| 2-Hexanone | 10 U | 10 U | 10 U | 11 U |
| Tetrachloroethene | 5.0 U | 5.0 U | 5.0 U | 5 6 U |
| 1,1,2,2-Tetrachloroethane | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| Toluene | 5.0 U | 5.0 U | 5.0 U | 1 0 J |
| Chlorobenzene | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| Ethylbenzene | 5.0 U | 5.0 U | 5.0 U | 5.6 U |
| Styrene | 5.0 U | 5.0 U | 5.0 U | 5 6 U |
| Total Xylenes | 5.0 U | 5.0 U | 5.0 U | 5.6 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
VOLATILE DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKWELL INTERNATIONAL - RF 

| Sample Information | #176 CS025 | #176 CS026 | not on list | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-003 | 8810-062-004 | 8810-062-005 | 8810-062-005 MS |
| Customer ID. | BH88A025 | BH88A026 | BH88A027 | BH88A027 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

| Surrogate Recovery | | | | |
|---|---|---|---|---|
| Toluene-d8. | 108 % | 111 % | 111 % | 109 % |
| Bromofluorobenzene: | 82 % | 78 % | 82 % | 85 % |
| 1,2-Dichloroethane-d4: | 100 % | 98 % | 95 % | 94 % |

| Analytes | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 11 U | 11 U | 11 U |
| Bromomethane | 11 U | 11 U | 11 U | 11 U |
| Vinyl Chloride | 11 U | 11 U | 11 U | 11 U |
| Chloroethane | 11 U | 11 U | 11 U | 11 U |
| Methylene Chloride. | 20 B | 18 B | 13 B | 16 B |
| Acetone | 10 J | 12 | 17 | 24 |
| Carbon Disulfide | 5.3 U | 5 4 U | 5.3 U | 5 3 U |
| 1,1-Dichloroethene | 5.3 U | 5.4 U | 5.3 U | 94 % |
| 1,1-Dichloroethane | 5.3 U | 5 4 U | 5.3 U | 5.3 U |
| Trans-1,2-Dichloroethene | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| Chloroform | 1.0 J | 1.0 J | 5.3 U | 5 3 U |
| 1,2-Dichloroethane | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| 2-Butanone | 11 U | 11 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| Carbon Tetrachloride | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| Vinyl Acetate | 11 U | 11 U | 11 U | 11 U |
| Bromodichloromethane | 5.3 U | 5.4 U | 5.3 U | 5 3 U |
| 1,2-Dichloropropane | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| Trans-1,3-Dichloropropene | 5.3 U | 5.4 U | 5.3 U | 5 3 U |
| Trichloroethene | 5.3 U | 5.4 U | 5 3 U | 90 % |
| Dibromochloromethane | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| 1,1,2-Trichloroethane | 5 3 U | 5.4 U | 5 3 U | 5.3 U |
| Benzene | 5.3 U | 5 4 U | 5.3 U | 98 % |
| cis-1,3-Dichloropropene | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| 2-Chloroethylvinylether | 11 U | 11 U | 11 U | 11 U |
| Bromoform | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| 4-Methyl-2-pentanone | 11 U | 11 U | 11 U | 11 U |
| 2-Hexanone | 11 U | 11 U | 11 U | 11 U |
| Tetrachloroethene | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| 1,1,2,2-Tetrachloroethane | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| Toluene | 2.0 J | 3.0 J | 1 0 J | 111 % |
| Chlorobenzene | 5.3 U | 5.4 U | 5.3 U | 92 % |
| Ethylbenzene | 5.3 U | 5.4 U | 5 3 U | 5.3 U |
| Styrene | 5.3 U | 5.4 U | 5.3 U | 5.3 U |
| Total Xylenes | 2.0 J | 3.0 J | 5.3 U | 5.3 U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
VOLATILE DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKWELL INTERNATIONAL - RF 

**Sample Information**

| | not on list | Field Blank | #176 CS027 | #176 CS032 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-005 MSD | 8810-062-006 | 8810-062-007 | 8810-062-008 |
| Customer ID. | BH88A027 | BH88A028 | BH88A029 | BH88A030 |
| Matrix: | Soil | Water | Soil | Soil |
| Units: | UG/KG | UG/L | UG/KG | UG/KG |
| Dilution Factor: | 1 | 1 | 1 | 1 |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| Toluene-d8: | 113 % | 99 % | 111 % | 115 % |
| Bromofluorobenzene: | 85 % | 101 % | 79 % | 80 % |
| 1,2-Dichloroethane-d4: | 94 % | 94 % | 101 % | 100 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Chloromethane | 11 U | 10 U | 11 U | 11 U |
| Bromomethane | 11 U | 10 U | 11 U | 11 U |
| Vinyl Chloride | 11 U | 10 U | 11 U | 11 U |
| Chloroethane | 11 U | 10 U | 11 U | 11 U |
| Methylene Chloride | 15 B | 4 0 JB | 20 B | 14 B |
| Acetone | 24 | 4 0 J | 11 J | 12 |
| Carbon Disulfide | 5 3 U | 5 0 U | 5.5 U | 5.5 U |
| 1,1-Dichloroethene | 96 % | 5.0 U | 5.5 U | 5 5 U |
| 1,1-Dichloroethane | 5.3 U | 5 0 U | 5.5 U | 5.5 U |
| Trans-1,2-Dichloroethene | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| Chloroform | 5.3 U | 3 0 J | 1.0 J | 1.0 J |
| 1,2-Dichloroethane | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| 2-Butanone | 11 U | 10 U | 11 U | 11 U |
| 1,1,1-Trichloroethane | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| Carbon Tetrachloride | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| Vinyl Acetate | 11 U | 10 U | 11 U | 11 U |
| Bromodichloromethane | 5.3 U | 5 0 U | 5.5 U | 5.5 U |
| 1,2-Dichloropropane | 5.3 U | 5 0 U | 5.5 U | 5 5 U |
| Trans-1,3-Dichloropropene | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| Trichloroethene | 91 % | 5.0 U | 5.5 U | 5 5 U |
| Dibromochloromethane | 5.3 U | 5.0 U | 5 5 U | 5.5 U |
| 1,1,2-Trichloroethane | 5.3 U | 5.0 U | 5.5 U | 5 5 U |
| Benzene | 101 % | 5 0 U | 5 5 U | 5.5 U |
| cis-1,3-Dichloropropene | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| 2-Chloroethylvinylether | 11 U | 10 U | 11 U | 11 U |
| Bromoform | 5.3 U | 5.0 U | 5.5 U | 5 5 U |
| 4-Methyl-2-pentanone | 11 U | 10 U | 11 U | 11 U |
| 2-Hexanone | 11 U | 10 U | 11 U | 11 U |
| Tetrachloroethene | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| 1,1,2,2-Tetrachloroethane | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| Toluene | 117 % | 5.0 U | 2 0 J | 2.0 J |
| Chlorobenzene | 95 % | 5.0 U | 5.5 U | 5.5 U |
| Ethylbenzene | 5.3 U | 5.0 U | 5.5 U | 5 5 U |
| Styrene | 5.3 U | 5.0 U | 5.5 U | 5.5 U |
| Total Xylenes | 5.3 U | 5.0 U | 2.0 J | 1.0 J |

Modifiers: U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
VOLATILE DATA SUMMARY
Volatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: 8810-062 Client: ROCKWELL INTERNATIONAL - RF 

**Sample Information**

#176
CS030

| | |
|---|---|
| RFW Batch ID. | 8810-062-009 |
| Customer ID: | BH88A031 |
| Matrix: | Soil |
| Units: | UG/KG |
| Dilution Factor: | 1 |

**Surrogate Recovery**

| | |
|---|---|
| Toluene-d8: | 115 % |
| Bromofluorobenzene: | 83 % |
| 1,2-Dichloroethane-d4: | 92 % |

**Analytes**

| | | |
|---|---|---|
| Chloromethane | 11 | U |
| Bromomethane | 11 | U |
| Vinyl Chloride | 11 | U |
| Chloroethane | 11 | U |
| Methylene Chloride | 20 | B |
| Acetone | 10 | J |
| Carbon Disulfide | 5.4 | U |
| 1,1-Dichloroethene | 5.4 | U |
| 1,1-Dichloroethane | 5.4 | U |
| Trans-1,2-Dichloroethene | 5.4 | U |
| Chloroform | 1.0 | J |
| 1,2-Dichloroethane | 5.4 | U |
| 2-Butanone | 11 | U |
| 1,1,1-Trichloroethane | 5.4 | U |
| Carbon Tetrachloride | 5 4 | U |
| Vinyl Acetate | 11 | U |
| Bromodichloromethane | 5.4 | U |
| 1,2-Dichloropropane | 5.4 | U |
| Trans-1,3-Dichloropropene | 5 4 | U |
| Trichloroethene | 5.4 | U |
| Dibromochloromethane | 5.4 | U |
| 1,1,2-Trichloroethane | 5.4 | U |
| Benzene | 5.4 | U |
| cis-1,3-Dichloropropene | 5.4 | U |
| 2-Chloroethylvinylether | 11 | U |
| Bromoform | 5.4 | U |
| 4-Methyl-2-pentanone | 11 | U |
| 2-Hexanone | 11 | U |
| Tetrachloroethene | 5.4 | U |
| 1,1,2,2-Tetrachloroethane | 5.4 | U |
| Toluene | 2.0 | J |
| Chlorobenzene | 5.4 | U |
| Ethylbenzene | 5.4 | U |
| Styrene | 5.4 | U |
| Total Xylenes | 5.4 | U |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

ROCKY FLATS

November 17, 1988

RFW#: 88-10-S061

Tentatively Identified Compounds,
VOA Fraction

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/L |
|---|---|---|---|---|
| BLANK | 10/29/88 | | NONE FOUND | |
| BLANK | 10/31/88 | | NONE FOUND | |
| BH88A023 | 10/29/88 | | NONE FOUND | |
| BH88A028 | 10/31/88 | | NONE FOUND | |

| RFW# | Date Analyzed | Scan No. | Identity | Estimated Conc.,ug/kg |
|---|---|---|---|---|
| BH88A024 | 10/31/88 | | NONE FOUND | |
| BH88A025 | 10/31/88 | | NONE FOUND | |
| BH88A026 | 10/31/88 | | NONE FOUND | |
| BH88A027 | 10/31/88 | | NONE FOUND | |
| BH88A029 | 10/31/88 | | NONE FOUND | |
| BH88A030 | 10/31/88 | | NONE FOUND | |
| BH88A031 | 10/29/88 | | NONE FOUND | |

Reviewed and approved R. F. Carney
Robert Carney
Unit Leader

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

176

Metals

# INORGANICS CASE NARRATIVE

Client: ROCKWELL
RFW #: 8810S062
W.O. #: 2029-38-01-0000

1. All required holding times were met.

2. All method blanks were analyzed below detection limits.

3. All LCS (blank spike) recoveries were within control limits.

4. Matrix spike recoveries for Arsenic, Antimony and Selenium were outside of the 75%-125% control windows established by the USEPA-CLP. This may be due to matrix interferences present in the sample matrix.

5. The following data qualifiers are used in the enclosed report:

   U - Indicates that the sample was analyzed for but not detected.

   * - Indicates that the original sample result was greater than 4 x the spike amount added. The USEPA-CLP has determined that spike sample calculations where this occurs have been proven to be unreliable.

6. Methodology unless otherwise indicated follows the USEPA-CLP SOW-787 for metals analysis; Methods for Chemical Analysis of Water and Wastes for conventional water analyses; and SW-846 for nonmetallic soil parameters.

Date: 12/8/88

Approved: [signature]

WESTON

WESTON ANALYTICS
METALS ANALYTICAL DATA PACKAGE FOR
ROCKWELL INTERNATIONAL - RF

DATE RECEIVED: 10/21/88

| CLIENT ID | RFW BATCH NUMBER | COLLECTION | EXTR./PREP. | ANALYSIS |
|---|---|---|---|---|
| BH88A024 | 8810-062-002 | 10/19/88 | NA | NA |
| BH88A025 | 8810-062-003 | 10/19/88 | NA | NA |
| BH88A026 | 8810-062-004 | 10/19/88 | NA | NA |
| BH88A027 | 8810-062-005 | 10/19/88 | NA | NA |
| BH88A027 | 8810-062-005 DUP | 10/19/88 | NA | NA |
| BH88A027 | 8810-062-005 MS | 10/19/88 | NA | NA |
| BH88A029 | 8810-062-007 | 10/19/88 | NA | NA |
| BH88A030 | 8810-062-008 | 10/19/88 | NA | NA |
| BH88A031 | 8810-062-009 | 10/19/88 | NA | NA |
| LCS | 8810-062-LCS | NA | NA | NA |
| LAB QC: | | | | |
| BLANK | 8810-062-0001BL | NA | NA | NA |

Geo E O'Shea 12/8/88
DATE

WESTON Analytical Laboratories

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number. 8810-062 Client: ROCKY FLATS 

Sample Information

| | | #176 CS024 | #176 CS025 | #176 CS026 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-0001BL | 8810-062-002 | 8810-062-003 | 8810-062-004 |
| Customer ID: | BLANK | BH88A024 | BH88A025 | BH88A026 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |

Metals

| | | | | | |
|---|---|---|---|---|---|
| Silver (Ag), total | 2.0 U | 3.1 | 2.1 U | 2 1 U |
| Aluminum (Al), total | 40.0 U | 11800 | 9820 | 12500 |
| Arsenic (As), total | 2.0 U | 6.9 | 2 1 U | 8 8 |
| Barium (Ba), total | 40.0 U | 107 | 75.7 | 82 9 |
| Beryllium (Be), total | 1.0 U | 1.1 | 1 0 U | 1 3 |
| Calcium (Ca), total | 200 U | 13600 | 7580 | 3490 |
| Cadmium (Cd), total | 1.0 U | 5.4 | 2 3 | 4 5 |
| Cobalt (Co), total | 10 0 U | 10.3 U | 10 4 U | 10 3 U |
| Chromium (Cr), total | 2.0 U | 21.1 | 12.9 | 15 6 |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 5 0 U | 13.1 | 17.4 | 12 2 |
| Iron (Fe), total | 20 0 U | 11500 | 11400 | 14100 |
| Mercury (Hg), total | 0.1 U | 0 1 U | 0.1 U | 0 1 U |
| Potassium (K ), total | 1000 U | 2840 | 1800 | 2320 |
| Lithium (Li), total | | | | |
| Magnesium (Mg), total | 200 U | 2150 | 1660 | 1630 |
| Manganese (Mn), total | 3.0 U | 363 | 235 | 205 |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 200 U | 460 | 340 | 206 U |
| Nickel (Ni), total | 8.0 U | 47.4 | 70.3 | 38 6 |
| Lead (Pb), total | 1.0 U | 73.8 | 13.4 | 17 7 |
| Antimony (Sb), total | 12.0 U | 12.9 U | 12.4 U | 12 8 U |
| Selenium (Se), total | 1.0 U | 1.1 U | 1.0 U | 1 1 U |
| Strontium (Sr), total | 40.0 U | 42.2 | 41.6 U | 41 3 U |
| Thallium (Tl), total | 2 0 U | 2.2 U | 2 1 U | 2 1 U |
| Vanadium (V ), total | 10.0 U | 32.9 | 29 1 | 43 5 |
| Zinc (Zn), total | 4.0 U | 92.6 | 51 0 | 35 1 |

Modifiers. U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-062 Client: ROCKY FLATS 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-005 | 8810-062-005 DUP | 8810-062-005 MS | 8810-062-007 |
| Customer ID: | BH88A027 | BH88A027 | BH88A027 | BH88A029 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | % RECOVERY | MG/KG |

Metals

| | | | | | |
|---|---|---|---|---|---|
| Silver (Ag), total | 2.2 U | | | 2 1 U |
| Aluminum (Al), total | 13500 | | | 12100 |
| Arsenic (As), total | 8.6 | 9.8 | 67 % | 6 6 |
| Barium (Ba), total | 75.5 | | | 92.0 |
| Beryllium (Be), total | 1.2 | | | 1 1 U |
| Calcium (Ca), total | 3010 | | | 3490 |
| Cadmium (Cd), total | 3 5 | | | 4 7 |
| Cobalt (Co), total | 11 1 U | | | 10 6 U |
| Chromium (Cr), total | 14.8 | | | 12 9 |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 10 4 | | | 13 1 |
| Iron (Fe), total | 15800 | | | 13200 |
| Mercury (Hg), total | 0 1 U | 0.1 U | 80 % | 0 1 U |
| Potassium (K ), total | 2170 | | | 2280 |
| Lithium (Li), total | | | | |
| Magnesium (Mg), total | 1570 | | | 1710 |
| Manganese (Mn), total | 184 | | | 261 |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 430 | | | 265 |
| Nickel (Ni), total | 47 4 | | | 48 5 |
| Lead (Pb), total | 16.1 | 20.1 | * | 24 3 |
| Antimony (Sb), total | 13 5 U | 13.2 U | 0 % | 11 8 U |
| Selenium (Se), total | 1 1 U | 1.1 U | 0 % | 1 0 U |
| Strontium (Sr), total | 44 3 U | | | 42 3 U |
| Thallium (Tl), total | 2 3 U | 2.2 U | 94 % | 2 3 |
| Vanadium (V ), total | 46 0 | | | 34 5 |
| Zinc (Zn), total | 31.9 | | | 41 5 |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-062 Client: ROCKY FLATS 

| Sample Information | | | | |
|---|---|---|---|---|
| | | #176 CS032 | #176 CS030 | |
| | RFW Batch ID. | 8810-062-008 | 8810-062-009 | 8810-062-LCS |
| | Customer ID: | BH88A030 | BH88A031 | LCS |
| | Matrix: | Soil | Soil | Soil |
| | Units. | MG/KG | MG/KG | % RECOVERY |
| **Metals** | | | | |
| Silver (Ag), total | | 2 1 U | 2.2 U | 110 % |
| Aluminum (Al), total | | 13200 | 13900 | 90 % |
| Arsenic (As), total | | 4.7 | 19.4 | 100 % |
| Barium (Ba), total | | 120 | 43.0 U | 90 % |
| Beryllium (Be), total | | 1.1 | 1.1 | 90 % |
| Calcium (Ca), total | | 4060 | 3900 | 90 % |
| Cadmium (Cd), total | | 3 6 | 7.3 | 90 % |
| Cobalt (Co), total | | 10.5 U | 10.8 U | 100 % |
| Chromium (Cr), total | | 15.0 | 18.7 | 90 % |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | | 11 8 | 21 4 | 100 % |
| Iron (Fe), total | | 13400 | 17500 | 90 % |
| Mercury (Hg), total | | 0 1 U | 0.1 U | 91 % |
| Potassium (K ), total | | 2770 | 2340 | 90 % |
| Lithium (Li), total | | | | |
| Magnesium (Mg), total | | 2310 | 1770 | 90 % |
| Manganese (Mn), total | | 330 | 261 | 90 % |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | | 615 | 365 | 80 % |
| Nickel (Ni), total | | 37.9 | 45.6 | 90 % |
| Lead (Pb), total | | 15.9 | 33.0 | 110 % |
| Antimony (Sb), total | | 11.9 U | 12.8 U | 112 % |
| Selenium (Se), total | | 1.0 U | 1.1 U | 100 % |
| Strontium (Sr), total | | 42.1 U | 43.0 U | 100 % |
| Thallium (Tl), total | | 2 0 U | 2.1 U | 110 % |
| Vanadium (V ), total | | 30 6 | 32.5 | 90 % |
| Zinc (Zn), total | | 41.5 | 58.1 | 90 % |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON

Metals 176 175

# WESTON ANALYTICS
# INORGANIC LABORATORY CHRONICLE

CLIENT: ROCKWELL
RFW # : 88-10-S070

| | Date |
|---|---|
| Receipt/Refrigeration | 10/22/88 |
| ICP Metals Preparation | 12/06/88 |
| AA Metals Preparation | 10/31/88 |
| Hg Preparation | 11/11/88 |
| CN Distillation | NA |

Metals Analysis:

| | | | | | |
|---|---|---|---|---|---|
| Ag | 12/18/88 | Cr | 12/18/88 | Pb | 12/20/88 |
| Al | 12/14/88 | Cu | 12/16/88 | Sb | 12/20/88 |
| As | 12/20/88 | Fe | 12/16/88 | Se | 12/20/88 |
| Be | 12/16/88 | K | 12/19/88 | Tl | 12/20/88 |
| Ba | 12/14/88 | Mg | 12/18/88 | V | 12/16/88 |
| Ca | 12/18/88 | Mn | 12/16/88 | Zn | 12/14/88 |
| Cd | 12/20/88 | Na | 12/19/88 | Hg | 11/11/88 |
| Co | 12/18/88 | Ni | 12/19/88 | B | NA |
| Mo | NA | Si | NA | Sr | 12/14/88 |

Anions Analysis:

| | | | |
|---|---|---|---|
| Cl | | Br | |
| F | | SO4 | |
| NO3 | | O-PO4 | |
| NO2 | | | |

ROY F. WESTON, INC.
STOCKTON ANALYTICAL LABORATORY

# INORGANICS CASE NARRATIVE

Client: ROCKWELL
RFW #: 8810S070
W.O. #: 2029-38-01-0000

1. All required holding times were met.

2. All method blanks were analyzed below detection limits except Zinc, no corrective action was taken.

3. All LCS (blank spike) recoveries were within control limits.

4. Matrix spike recoveries for Silver, Arsenic, Manganese, Antimony, Selenium and Zinc were outside of the 75%-125% control windows established by the USEPA-CLP. This may be due to matrix interferences present in the sample matrix.

5. The following data qualifiers are used in the enclosed report:

   U - Indicates that the sample was analyzed for but not detected.

   * - Indicates that the original sample result was greater than 4 x the spike amount added. The USEPA-CLP has determined that spike sample calculations where this occurs have been proven to be unreliable.

6. Methodology unless otherwise indicated follows the USEPA-CLP SOW-787 for metals analysis; Methods for Chemical Analysis of Water and Wastes for conventional water analyses; and SW-846 for nonmetallic soil parameters.

7. Sodium, Potassium, Calcium and Magnesium were not included in the matrix spike solution.

Date: 12/27/88

Approved:

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: 8810-070 Client: ROCKY FLATS 

Sample Information

| | | | | | |
|---|---|---|---|---|---|
| | | | | #176 CS031 | #176 CS028 |
| | RFW Batch ID | 8810-070-0001BL | 8810-070-0002BL | 8810-070-002 | 8810-070-003 |
| | Customer ID. | BLANK 1 | BLANK 2 | BH88A033 | BH88A034 |
| | Matrix. | Soil | Water | Soil | Soil |
| | Units. | MG/KG | MG/L | MG/KG | MG/KG |
| Sample Information | | | | | |
| Silver | (Ag), total | 1.0 U | 0.010 U | 2.1 U | 2 1 U |
| Aluminum | (Al), total | 200 U | 0.20 U | 8730 | 7960 |
| Arsenic | (As), total | 2 0 U | 0.010 U | 3.2 | 2 0 U |
| Barium | (Ba), total | 20 0 U | 0.20 U | 87.1 | 84 3 |
| Beryllium | (Be), total | 0.50 U | 0.0050 U | 1 1 | 1 1 |
| Calcium | (Ca), total | 500 U | 5.0 U | 2120 | 3550 |
| Cadmium | (Cd), total | 0 50 U | 0 0050 U | 4 1 | 5 5 |
| Cobalt | (Co), total | 5 0 U | 0 050 U | 10.6 U | 10 4 U |
| Chromium | (Cr), total | 1.0 U | 0 010 U | 14 0 | 12 1 |
| Cesium | (Cs), total | | | | |
| Copper | (Cu), total | 2 5 U | 0.025 U | 16 2 | 18 9 |
| Iron | (Fe), total | 100 U | 0.10 U | 10900 | 10800 |
| Mercury | (Hg), total | | 0.00020 U | 2 9 | 0 11 U |
| Potassium | (K ), total | 500 U | | 1590 | 1880 |
| Lithium | (Li), total | | | | |
| Magnesuim | (Mg), total | 500 U | 5.0 U | 2410 | 2550 |
| Manganese | (Mn), total | 15.0 U | 0.015 U | 180 | 184 |
| Molybdenum | (Mo), total | | | | |
| Sodium | (Na), total | 500 U | 5.0 U | 1060 U | 1040 U |
| Nickel | (Ni), total | 4 0 U | 0.040 U | 8 5 U | 8 4 U |
| Lead | (Pb), total | 1 0 U | 0.0050 U | 11 0 | 17 1 |
| Antimony | (Sb), total | 12 0 U | 0.060 U | 12.9 U | 12 3 U |
| Selenium | (Se), total | 1 0 U | 0.0050 U | 1 1 U | 1 0 U |
| Strontium | (Sr), total | 10 0 U | 0 10 U | 29.6 | 20 9 U |
| Thallium | (Tl), total | 2.0 U | 0.010 U | 2 2 U | 2 0 U |
| Vanadium | (V ), total | 5.0 U | 0.050 U | 23 9 | 23 7 |
| Zinc | (Zn), total | 3 9 | 0.020 U | 35.2 | 45 9 |

Modifiers. U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number 8810-070 Client. ROCKY FLATS 

| Sample Information | #176 CS029 | #176 CS033 | #175 CS018 | #175 CS019 |
|---|---|---|---|---|
| RFW Batch ID | 8810-070-004 | 8810-070-005 | 8810-070-006 | 8810-070-007 |
| Customer ID | BH88A035 | BH88A036 | BH88A037 | BH88A038 |
| Matrix | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | MG/KG | MG/KG |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total | 2.1 U | 2.1 U | 2.1 U | 2 1 U |
| Aluminum (Al), total | 10100 | 10200 | 6570 | 7040 |
| Arsenic (As), total | 0.53 | 5.3 | 2.0 | 3 1 U |
| Barium (Ba), total | 80.4 | 96.9 | 66.0 | 64 0 |
| Beryllium (Be), total | 1 2 | 1 2 | 1 1 U | 1.0 U |
| Calcium (Ca), total | 2920 | 3990 | 11400 | 8630 |
| Cadmium (Cd), total | 4 2 | 8 8 | 2.3 | 3 1 |
| Cobalt (Co), total | 10 4 U | 10.5 U | 10 6 U | 10 3 U |
| Chromium (Cr), total | 10.0 | 8 6 | 6 6 | 15 7 |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 17.1 | 18 0 | 14.2 | 23 3 |
| Iron (Fe), total | 13500 | 12900 | 9520 | 11500 |
| Mercury (Hg), total | 0 11 U | 2.3 | 0.98 | 2 1 |
| Potassium (K ), total | 1940 | 2120 | 1530 | 1730 |
| Lithium (Li), total | | | | |
| Magnesuim (Mg), total | 2290 | 2180 | 2310 | 2450 |
| Manganese (Mn), total | 217 | 265 | 139 | 208 |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 1040 U | 1050 U | 1060 U | 1030 U |
| Nickel (Ni), total | 20.2 | 8.4 U | 8 5 U | 8 2 U |
| Lead (Pb), total | 1 6 | 27.6 | 12 6 | 26 1 |
| Antimony (Sb), total | 1 2 U | 12.7 U | 12 1 U | 18 4 U |
| Selenium (Se), total | 0.10 U | 1 1 U | 1 0 U | 1 5 U |
| Strontium (Sr), total | 20 8 U | 21.0 U | 21 4 | 20 6 U |
| Thallium (Tl), total | 0.20 U | 2.1 U | 2.0 U | 3 1 U |
| Vanadium (V ), total | 30 6 | 29 6 | 19.0 | 20 6 |
| Zinc (Zn), total | 48.3 | 43.6 | 29.5 | 58 0 |

Modifiers U=Analyzed, not detected J=Present below detection limit. B=Present in blank NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number. 8810-070 Client. ROCKY FLATS 

Sample Information

#175
CS021

not on list

| | | | | |
|---|---|---|---|---|
| RFW Batch ID | 8810-070-008 | 8810-070-009 | 8810-070-009 DUP | 8810-070-009 MS |
| Customer ID | BH88A039 | BH88A040 | BH88A040 | BH88A040 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | MG/KG | % RECOVERY |

Sample Information

| | | | | |
|---|---|---|---|---|
| Silver (Ag), total | 2.2 U | 2 1 U | 2.1 U | 0 % |
| Aluminum (Al), total | 7770 | 7350 | 7170 | 0 * % |
| Arsenic (As), total | 2.1 U | 3 7 | 2.1 U | 48 0 % |
| Barium (Ba), total | 67.2 | 66.2 | 68.7 | 92.3 % |
| Beryllium (Be), total | 1 1 U | 1 0 U | 1 1 U | 103 % |
| Calcium (Ca), total | 7200 | 7540 | 7690 | 0 % |
| Cadmium (Cd), total | 3 6 | 3 7 | 3.2 | 93 1 % |
| Cobalt (Co), total | 10.9 U | 10.5 U | 10 7 U | 102 % |
| Chromium (Cr), total | 9 8 | 9 1 | 14 7 | 92 6 % |
| Cesium (Cs), total | | | | |
| Copper (Cu), total | 21.8 | 24 5 | 23 9 | 99 4 % |
| Iron (Fe), total | 10800 | 11500 | 11000 | 0 * % |
| Mercury (Hg), total | 2.3 | 12.2 | 1.8 | 0 * % |
| Potassium (K ), total | 1660 | 1740 | 1690 | |
| Lithium (Li), total | | | | |
| Magnesuim (Mg), total | 2400 | 2510 | 2390 | 0 % |
| Manganese (Mn), total | 158 | 166 | 156 | 69 3 % |
| Molybdenum(Mo), total | | | | |
| Sodium (Na), total | 1090 U | 1050 U | 1070 U | |
| Nickel (Ni), total | 8.7 U | 8 4 U | 14 3 | 97 3 % |
| Lead (Pb), total | 28 4 | 39 9 | 34 0 | 0 * % |
| Antimony (Sb), total | 12 7 U | 12.6 U | 12 4 U | 12 5 % |
| Selenium (Se), total | 1.0 U | 1 0 U | 1.0 U | 0 % |
| Strontium (Sr), total | 21.8 U | 21.0 U | 21 4 U | 925 % |
| Thallium (Tl), total | 2 1 U | 2.1 U | 2 1 U | 90 4 % |
| Vanadium (V ), total | 20.9 | 19 3 | 21 6 | 89 0 % |
| Zinc (Zn), total | 80 2 | 83.4 | 81.4 | 73 4 % |

Modifiers: U=Analyzed, not detected J=Present below detection limit B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number 8810-070 Client: ROCKY FLATS 

Sample Information

| | Field Blank | #175 ESC20 | ? | ? |
|---|---|---|---|---|
| RFW Batch ID. | 8810-070-010 | 8810-070-011 | 8810-070-LCS1 | 8810-070-LCS2 |
| Customer ID. | BH88A041 | BH88A042 | LCS1 | LCS2 |
| Matrix: | Water | Soil | Soil | Soil |
| Units: | MG/L | MG/KG | % RECOVERY | % RECOVERY |

Sample Information

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | (Ag), total | 0.010 | U | 2.2 | U | 92 1 | % | 89 8 | % |
| Aluminum | (Al), total | 0.20 | U | 8250 | | 90.1 | % | 93 8 | % |
| Arsenic | (As), total | 0.010 | U | 2.2 | | 97.0 | % | | |
| Barium | (Ba), total | 0.20 | U | 78.7 | | 89.8 | % | 94 5 | % |
| Beryllium | (Be), total | 0 0050 | U | 1.3 | | 95 4 | % | 98 6 | % |
| Calcium | (Ca), total | 5.0 | U | 11400 | | 110 | % | 110 | % |
| Cadmium | (Cd), total | 0.0050 | U | 3.8 | | 87.9 | % | 89 8 | % |
| Cobalt | (Co), total | 0.050 | U | 11.0 | U | 93 0 | % | 97.6 | % |
| Chromium | (Cr), total | 0 010 | U | 8.4 | | 90 8 | % | 93 8 | % |
| Cesium | (Cs), total | | | | | | | | |
| Copper | (Cu), total | 0.025 | U | 19.0 | | 89 8 | % | 94 0 | % |
| Iron | (Fe), total | 0.10 | U | 12900 | | 86.2 | % | 89 2 | % |
| Mercury | (Hg), total | 0 0010 | | 0.16 | | 114 | % | 85 1 | % |
| Potassium | (K ), total | 5.0 | U | 1960 | | 82.0 | % | 85 0 | % |
| Lithium | (Li), total | | | | | | | | |
| Magnesuim | (Mg), total | 5 0 | U | 2570 | | 109 | % | 112 | % |
| Manganese | (Mn), total | 0 015 | U | 152 | | 87 6 | % | 92 0 | % |
| Molybdenum | (Mo), total | | | | | | | | |
| Sodium | (Na), total | 5.0 | U | 1100 | U | 90.0 | % | 92 0 | % |
| Nickel | (Ni), total | 0.040 | U | 10.4 | | 86.8 | % | 90 1 | % |
| Lead | (Pb), total | 0.0050 | U | 14 5 | | 101 | % | | |
| Antimony | (Sb), total | 0.060 | U | 12.7 | U | 115 | % | | |
| Selenium | (Se), total | 0.0050 | U | 1.0 | U | 88 6 | % | | |
| Strontium | (Sr), total | 0 10 | U | 27 9 | | 87.6 | % | 90 9 | % |
| Thallium | (Tl), total | 0 010 | U | 2 1 | U | 98 4 | % | | |
| Vanadium | (V ), total | 0.050 | U | 23 2 | | 87.3 | % | 91 3 | % |
| Zinc | (Zn), total | 0.020 | U | 40.0 | | 80.0 | % | 82 6 | % |

Modifiers: U=Analyzed, not detected J=Present below detection limit. B=Present in blank. NS=Not spiked. %=Percent recovery

WESTON ANALYTICS
METALS
INORGANICS DATA SUMMARY REPORT

RFW Batch Number 8810-070 Client: ROCKY FLATS 

Sample Information

| | ? | ? |
|---|---|---|
| RFW Batch ID: | 8810-070-LCS3 | 8810-070-LCS4 |
| Customer ID. | LCS3 | LCS4 |
| Matrix: | Water | Water |
| Units. | % RECOVERY | % RECOVERY |

Sample Information

| | | |
|---|---|---|
| Silver (Ag), total | 102 % | 100 % |
| Aluminum (Al), total | 93.2 % | 95 5 % |
| Arsenic (As), total | 80 8 % | 110 % |
| Barium (Ba), total | 90.0 % | 85.8 % |
| Beryllium (Be), total | 82.3 % | 85 0 % |
| Calcium (Ca), total | 99 0 % | 99 0 % |
| Cadmium (Cd), total | 102 % | 106 % |
| Cobalt (Co), total | 101 % | 102 % |
| Chromium (Cr), total | 88 5 % | 86.6 % |
| Cesium (Cs), total | | |
| Copper (Cu), total | 96 0 % | 94.6 % |
| Iron (Fe), total | 96.9 % | 97.2 % |
| Mercury (Hg), total | | |
| Potassium (K ), total | 92 0 % | 95.0 % |
| Lithium (Li), total | | |
| Magnesuim (Mg), total | 92 0 % | 90.0 % |
| Manganese (Mn), total | 100 % | 103 % |
| Molybdenum(Mo), total | | |
| Sodium (Na), total | 94 0 % | 92 0 % |
| Nickel (Ni), total | 97.9 % | 99.3 % |
| Lead (Pb), total | 115 % | 118 % |
| Antimony (Sb), total | 118 % | 96.0 % |
| Selenium (Se), total | 109 % | 114 % |
| Strontium (Sr), total | 98 1 % | 97.2 % |
| Thallium (Tl), total | 112 % | 115 % |
| Vanadium (V ), total | 99.6 % | 101 % |
| Zinc (Zn), total | 99 2 % | 99 4 % |

Modifiers: U=Analyzed, not detected. J=Present below detection limit. B=Present in blank. NS=Not spiked %=Percent recovery

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | #174 CS005 | | | #174 CS002 |
|---|---|---|---|---|
| RFW Batch ID | 8810-036-002 | 8810-036-002 DUP | 8810-036-002 MS | 8810-036-003 |
| Customer ID | BH88A002 | BH88A002 | BH88A002 | BH88A003 |
| Collection Date | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |
| Matrix. | Soil | Soil | Soil | Soil |
| Units. | MG/KG | MG/KG | % RECOVERY | MG/KG |
| **Metals** | | | | |
| Aluminum (Al), total..... | 7080 | 6820 | * | 8640 |
| Antimony (Sb), total..... | 13 4 U | NR | NR | 12 6 U |
| Arsenic (As), total..... | 3 3 | NR | NR | 3 7 |
| Barium (Ba), total..... | 80 6 | 79 4 | 101 % | 82 2 |
| Beryllium (Be), total..... | 14.3 | 9.7 | 80 % | 1 1 U |
| Cadmium (Cd), total..... | 2 4 | 1.6 | 104 % | 2 2 |
| Calcium (Ca), total..... .. | 1590 | 1610 | * | 2130 |
| Cesium (Cs), total..... | NR | NR | NR | NR |
| Chromium (Cr), total..... . | 13.0 | 12.7 | 92 % | 10 0 |
| Cobalt (Co), total..... .. | 10.9 U | 11.3 U | 93 % | 10 5 U |
| Copper (Cu), total..... | 10.3 | 10 7 | 112 % | 8 1 |
| Iron (Fe), total. ... . | 7730 | 8080 | * | 10900 |
| Lead (Pb), total. ... . | 16 4 | NR | NR | 18 7 |
| Lithium (Li), total..... | NR | NR | NR | NR |
| Magnesium (Mg), total..... | 1470 | 1430 | * | 1480 |
| Manganese (Mn), total..... .. | 241 | 244 | * | 178 |
| Mercury (Hg), total. ..... .. | 0.1 U | 0.1 U | 86 % | 0 1 U |
| Molybdenum(Mo), total..... .. | NR | NR | NR | NR |
| Nickel (Ni), total..... | 10.4 | 10.5 | 86 % | 8 4 U |
| Potassium (K ), total .. ... | 1700 | 1630 | * | 1510 |
| Selenium (Se), total..... . | 1 1 U | NR | NR | 1 1 U |
| Silver (Ag), total.. ..... | 2.2 U | 2.3 U | 55 % | 2 1 U |
| Sodium (Na), total ..... . | 688 | 226 U | NS | 831 |
| Strontium (Sr), total..... .... | 43.8 U | 45.1 U | 100 % | 42 0 U |
| Thallium (Tl), total..... .. | 2.2 U | NR | NR | 2 1 U |
| Tin (Sn), total..... | NR | NR | NR | NR |
| Vanadium (V ), total.... ..... | 2120 | 2140 | * | 41 2 |
| Zinc (Zn), total .... .... | 43.1 | 43.3 | 95 % | 33 2 |

174
170
176
175

177
182
129

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

Sample Information

| | | | | |
|---|---|---|---|---|
| | | | #174 CS004 | #174 CS008 |
| RFW Batch ID: | 8810-036-003 DUP | 8810-036-003 MS | 8810-036-004 | 8810-036-005 |
| Customer ID: | BH88A003 | BH88A003 | BH88A004 | BH88A005 |
| Collection Date. | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | MG/KG | % RECOVERY | MG/KG | MG/KG |

Metals

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Aluminum | (Al), | total..... | | NR | | NR | 6170 | | 7900 |
| Antimony | (Sb), | total..... | 13 3 | U | 0 | % | 12 4 | U | 12 6 U |
| Arsenic | (As), | total..... | 4 1 | | 65 | % | 2.9 | | 2 1 U |
| Barium | (Ba), | total..... . | | NR | | NR | 66 7 | | 81 5 |
| Beryllium | (Be), | total..... | | NR | | NR | 1 1 | U | 1 1 U |
| Cadmium | (Cd), | total..... .. | | NR | | NR | 1 3 | | 1 5 |
| Calcium | (Ca), | total..... . | | NR | | NR | 1380 | | 1670 |
| Cesium | (Cs), | total..... | | NR | | NR | | NR | NR |
| Chromium | (Cr), | total..... .. . | | NR | | NR | 6 5 | | 7 8 |
| Cobalt | (Co), | total..... .. | | NR | | NR | 10 8 | U | 10 6 U |
| Copper | (Cu), | total..... ... | | NR | | NR | 9 8 | | 10 9 |
| Iron | (Fe), | total..... . . | | NR | | NR | 7530 | | 10600 |
| Lead | (Pb), | total..... . | 20.2 | | * | | 19 0 | | 20 5 |
| Lithium | (Li), | total..... | | NR | | NR | | NR | NR |
| Magnesium | (Mg), | total..... | | NR | | NR | 1570 | | 1590 |
| Manganese | (Mn), | total..... | | NR | | NR | 154 | | 228 |
| Mercury | (Hg), | total..... | | NR | | NR | 0 1 | U | 0 1 U |
| Molybdenum | (Mo), | total..... | | NR | | NR | | NR | NR |
| Nickel | (Ni), | total..... .. | | NR | | NR | 8 6 | U | 8 5 U |
| Potassium | (K ), | total..... . | | NR | | NR | 1550 | | 1710 |
| Selenium | (Se), | total... ..... | 1 1 | U | 83 | % | 1 0 | U | 1 1 U |
| Silver | (Ag), | total..... ... | | NR | | NR | 2 2 | U | 2 1 U |
| Sodium | (Na), | total..... | | NR | | NR | 592 | | 480 |
| Strontium | (Sr), | total..... | | NR | | NR | 43.0 | U | 42 5 U |
| Thallium | (Tl), | total..... | 2.2 | U | 106 | % | 2.1 | U | 2 1 U |
| Tin | (Sn), | total..... . | | NR | | NR | | NR | NR |
| Vanadium | (V ), | total..... | | NR | | NR | 20 6 | | 25 3 |
| Zinc | (Zn), | total..... | | NR | | NR | 52.0 | | 35 9 |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | #174 CS009 | #174 CS006 | #174 CS007 | #174 CS012 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-006 | 8810-036-007 | 8810-036-008 | 8810-036-009 |
| Customer ID. | BH88A006 | BH88A007 | BH88A008 | BH88A009 |
| Collection Date | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | MG/KG | MG/KG |
| **Metals** | | | | |
| Aluminum (Al), total..... | 10200 | 5180 | 8350 | 8220 |
| Antimony (Sb), total..... | 12.5 U | 12.4 U | 12 9 U | 12 9 U |
| Arsenic (As), total..... | 3 8 | 2.5 | 3 6 | 3 4 |
| Barium (Ba), total..... | 93.1 | 60.0 | 75 3 | 73 8 |
| Beryllium (Be), total..... | 13.1 | 1.1 U | 1 1 U | 1 0 U |
| Cadmium (Cd), total..... | 1.3 | 1.6 | 3 5 | 27 2 |
| Calcium (Ca), total..... | 2160 | 1540 | 1800 | 1990 |
| Cesium (Cs), total..... | NR | NR | NR | NR |
| Chromium (Cr), total..... | 9.8 | 4.1 | 7.4 | 10 0 |
| Cobalt (Co), total..... | 10 7 U | 10.8 U | 11 2 U | 10 5 U |
| Copper (Cu), total..... .. | 8 4 | 8 2 | 9.0 | 13 8 |
| Iron (Fe), total..... | 12700 | 8360 | 10300 | 10700 |
| Lead (Pb), total..... | 16.6 | 28.6 | 24.8 | 22.3 |
| Lithium (Li), total..... | NR | NR | NR | NR |
| Magnesium (Mg), total..... .. | 1610 | 1300 | 1620 | 1710 |
| Manganese (Mn), total..... . | 232 | 193 | 201 | 211 |
| Mercury (Hg), total..... . | 0.1 U | 0.1 U | 0 1 U | 0 1 U |
| Molybdenum(Mo), total..... | NR | NR | NR | NR |
| Nickel (Ni), total..... | 8 5 U | 8 6 U | 8 9 U | 8 4 U |
| Potassium (K ), total..... | 1850 | 1330 | 1700 | 1590 |
| Selenium (Se), total..... | 1.0 U | 1.0 U | 1 1 U | 1 1 U |
| Silver (Ag), total..... .. | 2 1 U | 2.2 U | 2 2 U | 2 1 U |
| Sodium (Na), total..... ... | 468 | 478 | 559 | 539 |
| Strontium (Sr), total..... .. | 42.7 U | 43 0 U | 44 7 U | 41 8 U |
| Thallium (Tl), total. ..... | 2 1 U | 2.1 U | 2 1 U | 2 2 U |
| Tin (Sn), total.... ..... | NR | NR | NR | NR |
| Vanadium (V ), total..... | 2590 | 16 8 | 24 4 | 27 4 |
| Zinc (Zn), total. ... .... | 28 0 | 42.8 | 37.5 | 38 1 |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | #174 CS015 | #174 CS013 | | #174 CS011 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-011 | 8810-036-012 | 8810-036-013 | 8810-036-014 |
| Customer ID. | BH88A011 | BH88A012 | BH88A013 | BH88A014 |
| Collection Date: | 10/13/88 | 10/13/88 | 10/13/88 | 10/13/88 |
| Matrix. | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | MG/KG | MG/KG |
| **Metals** | | | | |
| Aluminum (Al), total..... | 11200 | 7840 | 8290 | 5460 |
| Antimony (Sb), total..... | 13.0 U | 13.0 U | 12 4 U | 12 3 U |
| Arsenic (As), total..... | 3.3 | 3.4 | 2.7 | 3 3 |
| Barium (Ba), total..... | 87.4 | 77 1 | 73.2 | 61 5 |
| Beryllium (Be), total..... | 1.1 U | 1.3 | 1 1 U | 1 0 U |
| Cadmium (Cd), total..... | 3 0 | 1.3 | 1.5 | 1 0 U |
| Calcium (Ca), total..... | 2160 | 1530 | 1610 | 1840 |
| Cesium (Cs), total..... . | NR | NR | NR | NR |
| Chromium (Cr), total..... | 11.7 | 8.0 | 7 6 | 6 0 |
| Cobalt (Co), total..... | 11 0 U | 10 6 U | 10 8 U | 10 2 U |
| Copper (Cu), total.. . .... | 12.8 | 11 5 | 12.1 | 12 7 |
| Iron (Fe), total..... . | 14800 | 9420 | 11600 | 8680 |
| Lead (Pb), total..... | 21 0 | 20.2 | 16 2 | 26 4 |
| Lithium (Li), total..... .. | NR | NR | NR | NR |
| Magnesium (Mg), total..... | 2000 | 1540 | 1650 | 1640 |
| Manganese (Mn), total..... | 216 | 211 | 229 | 187 |
| Mercury (Hg), total..... | 0.1 U | 0.1 U | 0.1 U | 0 1 U |
| Molybdenum(Mo), total..... ... | NR | NR | NR | NR |
| Nickel (Ni), total..... | 9 8 | 8.5 U | 8 7 U | 8 2 U |
| Potassium (K ), total..... | 1980 | 1670 | 1630 | 1530 |
| Selenium (Se), total.. ..... | 1.1 U | 1.1 U | 1 0 U | 1 0 U |
| Silver (Ag), total..... .. | 2 2 U | 2.1 U | 5 3 | 4 2 |
| Sodium (Na), total... . .... | 252 | 299 | 417 | 321 |
| Strontium (Sr), total..... ... | 43.8 U | 42.6 U | 43 3 U | 40 8 U |
| Thallium (Tl), total... ..... | 2.2 U | 2.2 U | 2 1 U | 2 0 U |
| Tin (Sn), total..... | NR | NR | NR | NR |
| Vanadium (V ), total..... | 29 1 | 140 | 41 0 | 14 5 |
| Zinc (Zn), total..... | 38.8 | 38.3 | 37 1 | 71 1 |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | #174 CS014 | | #174 CS010 | | #174 CS003 | |
| RFW Batch ID: | 8810-036-015 | | 8810-036-016 | | 8810-036-017 | | 8810-036 018 | |
| Customer ID: | BH88A015 | | BH88A016 | | BH88A017 | | BH88A018 | |
| Collection Date | 10/13/88 | | 10/13/88 | | 10/13/88 | | 10/13/88 | |
| Matrix: | Water | | Soil | | Soil | | Soil | |
| Units: | MG/L | | MG/KG | | MG/KG | | MG/KG | |
| **Metals** | | | | | | | | |
| Aluminum (Al), total..... | 0.200 | U | 8280 | | 9740 | | 6930 | |
| Antimony (Sb), total..... | 0.060 | U | 12.8 | U | 12 1 | U | 12 0 | U |
| Arsenic (As), total..... | 0.010 | U | 4.0 | | 4.4 | | 2 3 | |
| Barium (Ba), total..... | 0.200 | U | 75.4 | | 84.4 | | 67 1 | |
| Beryllium (Be), total..... | 0.005 | U | 1.0 | U | 1.0 | U | 1 0 | U |
| Cadmium (Cd), total..... | 0.005 | U | 2.3 | | 3 6 | | 3 3 | |
| Calcium (Ca), total..... | 5.0 | U | 1890 | | 2030 | | 1210 | |
| Cesium (Cs), total..... | | NR | | NR | | NR | | NR |
| Chromium (Cr), total..... . | 0 010 | U | 9 0 | | 5 0 | | 2 5 | |
| Cobalt (Co), total..... | 0.050 | U | 10 0 | U | 10.2 | U | 10 2 | U |
| Copper (Cu), total. ..... | 0 025 | U | 8 2 | | 5 1 | U | 5 3 | |
| Iron (Fe), total.... ... . | 0 100 | U | 11000 | | 12300 | | 9420 | |
| Lead (Pb), total.. ..... | 0.005 | U | 18.5 | | 19 4 | | 25 4 | |
| Lithium (Li), total..... .... | | NR | | NR | | NR | | NR |
| Magnesium (Mg), total..... . | 5.0 | U | 1580 | | 1640 | | 1440 | |
| Manganese (Mn), total..... .. | 0.015 | U | 191 | | 180 | | 154 | |
| Mercury (Hg), total..... .. . | 0.0002 | U | 0.1 | U | 0.1 | U | 0 1 | U |
| Molybdenum(Mo), total..... | | NR | | NR | | NR | | NR |
| Nickel (Ni), total..... .. | 0 040 | U | 8.0 | U | 9 9 | | 8 2 | U |
| Potassium (K ), total... ... . | 5.0 | U | 1650 | | 1740 | | 1610 | |
| Selenium (Se), total..... . | 0.005 | U | 1.1 | U | 1.0 | U | 1 0 | U |
| Silver (Ag), total..... | 0.010 | U | 2.0 | U | 2 0 | U | 2 0 | U |
| Sodium (Na), total ..... .. | 5 0 | U | 400 | | 379 | | 917 | |
| Strontium (Sr), total..... | 0.200 | U | 39.9 | U | 41 0 | U | 40 8 | U |
| Thallium (Tl), total.... ..... | 0.010 | U | 2.1 | U | 2 0 | U | 2 0 | U |
| Tin (Sn), total..... | | NR | | NR | | NR | | NR |
| Vanadium (V ), total. ..... | 0 050 | U | 24 1 | | 27 9 | | 19 6 | |
| Zinc (Zn), total. ... ... | 0.020 | U | 28.5 | | 35 7 | | 35 1 | |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | | | | |
|---|---|---|---|---|
| | #174 CS001 | #170 CS016 | | |
| RFW Batch ID | 8810-036-019 | 8810-051-002 | 8810-051-002 DUP | 8810-051-002 MS |
| Customer ID | BH88A019 | BH88A021 | BH88A021 | BH88A021 |
| Collection Date. | 10/13/88 | 10/14/88 | 10/14/88 | 10/14/88 |
| Matrix | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | MG/KG | MG/KG |

**Metals**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | (Al), total..... | 7900 | | 10200 | | 10800 | | * | |
| Antimony | (Sb), total..... | 12 2 | U | 12.0 | | 12.7 | | 8 6 | % |
| Arsenic | (As), total..... | 3.4 | | 4.9 | | 4.9 | | 65 | % |
| Barium | (Ba), total..... | 77 0 | | 83.2 | | 76.4 | | 98 | % |
| Beryllium | (Be), total..... | 1.0 | U | 1.0 | U | 1.0 | U | 101 | % |
| Cadmium | (Cd), total..... | 2.9 | | 2.9 | | 2.2 | | 86 | % |
| Calcium | (Ca), total..... | 1910 | | 2370 | | 2310 | | NS | |
| Cesium | (Cs), total..... | | NR | NA | | NA | | | NR |
| Chromium | (Cr), total..... | 4.0 | | 11.9 | | 11 9 | | 97 | % |
| Cobalt | (Co), total.... .... | 10.4 | U | 10.3 | | 10 1 | | 88 | % |
| Copper | (Cu), total.... ... . | 5.2 | U | 11.6 | | 11 1 | | 99 | % |
| Iron | (Fe), total..... . | 10300 | | 13300 | | 13800 | | NS | |
| Lead | (Pb), total.... ..... | 23.9 | | 20.4 | | 19.3 | | * | |
| Lithium | (Li), total..... | | NR | NA | | NA | | | NR |
| Magnesium | (Mg), total..... . | 1430 | | 1630 | | 1820 | | NS | |
| Manganese | (Mn), total ..... | 209 | | 200 | | 194 | | 92 | % |
| Mercury | (Hg), total..... | 0 1 | U | 0.1 | U | 0.1 | U | 12 | % |
| Molybdenum | (Mo), total..... | | NR | NA | | NA | | | NR |
| Nickel | (Ni), total..... | 8 3 | U | 37.3 | | 33.1 | | 152 | % |
| Potassium | (K ), total..... | 1510 | | 1630 | | 1550 | | NS | |
| Selenium | (Se), total..... | 1.0 | U | 1.0 | U | 1.1 | U | 100 | % |
| Silver | (Ag), total..... . | 2 1 | U | 2.0 | | 2 0 | U | 0 | % |
| Sodium | (Na), total . ... | 255 | | 405 | | 1370 | | NS | |
| Strontium | (Sr), total..... . | 41.6 | U | 41.2 | | 40 4 | U | 101 | % |
| Thallium | (Tl), total..... . | 2 0 | U | 2.0 | U | 2.1 | U | 99 | % |
| Tin | (Sn), total..... | | NR | | NR | | NR | | NR |
| Vanadium | (V ), total..... | 21.4 | | 31.9 | | 30 5 | | 89 | % |
| Zinc | (Zn), total..... | 36.2 | | 110 | | 108 | | 91 | % |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | #170 CS017 | #176 CS024 | #176 CS025 | #176 CS026 |
|---|---|---|---|---|
| RFW Batch ID | 8810-051-003 | 8810-062-002 | 8810-062-003 | 8810-062-004 |
| Customer ID | BH88A022 | BH88A024 | BH88A025 | BH88A026 |
| Collection Date. | 10/14/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | MG/KG | MG/KG |
| **Metals** | | | | |
| Aluminum (Al), total | 11900 | 11800 | 9820 | 12500 |
| Antimony (Sb), total | 12.5 U | 12.9 U | 12 4 U | 12 8 U |
| Arsenic (As), total | 2 9 | 6.9 | 2 1 U | 8 8 |
| Barium (Ba), total | 101 | 107 | 75 7 | 82.9 |
| Beryllium (Be), total | 1.1 U | 1.1 | 1.0 U | 1.3 |
| Cadmium (Cd), total | 2.9 | 5.4 | 2.3 | 4.5 |
| Calcium (Ca), total | 5860 | 13600 | 7580 | 3490 |
| Cesium (Cs), total | NR | NR | NR | NR |
| Chromium (Cr), total | 13.3 | 21.1 | 12 9 | 15 6 |
| Cobalt (Co), total | 10 5 U | 10.3 U | 10 4 U | 10 3 U |
| Copper (Cu), total | 23 4 | 13.1 | 17 4 | 12 2 |
| Iron (Fe), total | 20800 | 11500 | 11400 | 14100 |
| Lead (Pb), total | 16.8 | 73.8 | 13.4 | 17 7 |
| Lithium (Li), total | NR | NR | NR | NR |
| Magnesium (Mg), total | 4700 | 2150 | 1660 | 1630 |
| Manganese (Mn), total | 469 | 363 | 235 | 205 |
| Mercury (Hg), total | 0.1 U | 0.1 U | 0 1 U | 0 1 U |
| Molybdenum(Mo), total | NR | NR | NR | NR |
| Nickel (Ni), total | 43.3 | 47.4 | 70.3 | 38 6 |
| Potassium (K ), total | 2920 | 2840 | 1800 | 2320 |
| Selenium (Se), total | 1.0 U | 1.1 U | 1.0 U | 1 1 U |
| Silver (Ag), total | 2.1 U | 3.1 | 2.1 U | 2 1 U |
| Sodium (Na), total | 1320 | 460 | 340 | 206 U |
| Strontium (Sr), total | 42.0 U | 42.2 | 41.6 U | 41 3 U |
| Thallium (Tl), total | 2.1 U | 2.2 U | 2 1 U | 2.1 U |
| Tin (Sn), total | NR | NR | NR | NR |
| Vanadium (V ), total | 40 4 | 32 9 | 29 1 | 43 5 |
| Zinc (Zn), total | 72 5 | 92.6 | 51 0 | 35 1 |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | | | | |
|---|---|---|---|---|---|
| RFW Batch ID· | 8810-062-005 | 8810-062-005 DUP | 8810-062-005 MS | FB 8810-062-006 |
| Customer ID. | BH88A027 | BH88A027 | BH88A027 | BH88A028 |
| Collection Date | 10/19/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix | Soil | Soil | Soil | Water |
| Units | MG/KG | MG/KG | % RECOVERY | MG/L |

**Metals**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | (Al), total..... | 13500 | | | NR | | | NR | | 0 200 | U |
| Antimony | (Sb), total..... | 13.5 | U | 13.2 | U | 0 | % | | | 0 060 | U |
| Arsenic | (As), total..... | 8.6 | | 9.8 | | 67 | % | | | 0 010 | U |
| Barium | (Ba), total..... | 75 5 | | | NR | | | NR | | 0 200 | U |
| Beryllium | (Be), total..... | 1.2 | | | NR | | | NR | | 0 005 | U |
| Cadmium | (Cd), total..... | 3.5 | | | NR | | | NR | | 0.005 | U |
| Calcium | (Ca), total..... . | 3010 | | | NR | | | NR | | 5 0 | U |
| Cesium | (Cs), total..... | | NR | | NR | | | NR | | | NR |
| Chromium | (Cr), total..... | 14.8 | | | NR | | | NR | | 0 010 | U |
| Cobalt | (Co), total..... .. | 11.1 | U | | NR | | | NR | | 0 050 | U |
| Copper | (Cu), total..... .. | 10 4 | | | NR | | | NR | | 0 025 | U |
| Iron | (Fe), total..... . | 15800 | | | NR | | | NR | | 0 100 | U |
| Lead | (Pb), total..... | 16.1 | | 20.1 | | * | | | | 0 005 | U |
| Lithium | (Li), total..... .. | | NR | | NR | | | NR | | | NR |
| Magnesium | (Mg), total..... ... | 1570 | | | NR | | | NR | | 5 0 | U |
| Manganese | (Mn), total..... | 184 | | | NR | | | NR | | 0 015 | U |
| Mercury | (Hg), total..... | 0 1 | U | 0.1 | U | 80 | % | | | 0 0002 | U |
| Molybdenum | (Mo), total..... ... | | NR | | NR | | | NR | | | NR |
| Nickel | (Ni), total..... . | 47.4 | | | NR | | | NR | | 0 040 | U |
| Potassium | (K ), total..... | 2170 | | | NR | | | NR | | 5 0 | U |
| Selenium | (Se), total..... . | 1.1 | U | 1.1 | U | 0 | % | | | 0 005 | U |
| Silver | (Ag), total..... | 2.2 | U | | NR | | | NR | | 0 010 | U |
| Sodium | (Na), total..... | 430 | | | NR | | | NR | | 5 0 | U |
| Strontium | (Sr), total..... | 44.3 | U | | NR | | | NR | | 0 200 | U |
| Thallium | (Tl), total..... . | 2.3 | U | 2.2 | U | 94 | % | | | 0 010 | U |
| Tin | (Sn), total..... . | | NR | | NR | | | NR | | | NR |
| Vanadium | (V ), total..... | 46 0 | | | NR | | | NR | | 0 050 | U |
| Zinc | (Zn), total..... | 31.9 | | | NR | | | NR | | 0 020 | U |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

Sample Information

| | | | | |
|---|---|---|---|---|
| | | | #176 CS027 | #176 CS032 |
| RFW Batch ID. | 8810-062-006 DUP | 8810-062-006 MS | 8810-062-007 | 8810-062-008 |
| Customer ID. | BH88A028 | BH88A028 | BH88A029 | BH88A030 |
| Collection Date | 10/19/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix: | Water | Water | Soil | Soil |
| Units | MG/L | % RECOVERY | MG/KG | MG/KG |

Metals

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aluminum | (Al), | total..... | 0.200 | U | 100 | % | 12100 | | 13200 | | |
| Antimony | (Sb), | total..... | 0.060 | U | 93 | % | 11.8 | U | 11 9 | U | |
| Arsenic | (As), | total..... | 0.010 | U | 93 | % | 6.6 | | 4 7 | | |
| Barium | (Ba), | total..... | 0.200 | U | 100 | % | 92.0 | | 120 | | |
| Beryllium | (Be), | total..... | 0 005 | U | 90 | % | 1.1 | U | 1 1 | | |
| Cadmium | (Cd), | total..... | 0.005 | U | 95 | % | 4 7 | | 3 6 | | |
| Calcium | (Ca), | total..... | 5.0 | U | NA | | 3490 | | 4060 | | |
| Cesium | (Cs), | total..... | | NR | | NR | | NR | | | NR |
| Chromium | (Cr), | total..... .. | 0.010 | U | 94 | % | 12 9 | | 15 0 | | |
| Cobalt | (Co), | total..... | 0.050 | U | 96 | % | 10 6 | U | 10 5 | U | |
| Copper | (Cu), | total..... | 0.025 | U | 95 | % | 13 1 | | 11 8 | | |
| Iron | (Fe), | total..... . | 0.100 | U | 100 | % | 13200 | | 13400 | | |
| Lead | (Pb), | total..... . | 0.005 | U | 100 | % | 24 3 | | 15 9 | | |
| Lithium | (Li), | total..... | | NR | | NR | | NR | | | NR |
| Magnesium | (Mg), | total..... | 5 0 | U | NA | | 1710 | | 2310 | | |
| Manganese | (Mn), | total..... | 0 015 | U | 94 | % | 261 | | 330 | | |
| Mercury | (Hg), | total.. ..... | NA | | NA | | 0.1 | U | 0 1 | U | |
| Molybdenum | (Mo), | total..... | | NR | | NR | | NR | | | NR |
| Nickel | (Ni), | total.... ..... | 0.040 | U | 90 | % | 48 5 | | 37 9 | | |
| Potassium | (K ), | total..... .... | 5.0 | U | NA | | 2280 | | 2770 | | |
| Selenium | (Se), | total.... .. .. | 0 005 | U | 84 | % | 1 0 | U | 1 0 | U | |
| Silver | (Ag), | total..... . | 0 010 | U | 25 | % | 2.1 | U | 2 1 | U | |
| Sodium | (Na), | total..... .. | 5 0 | U | NA | | 265 | | 615 | | |
| Strontium | (Sr), | total..... . . | 0 200 | U | 100 | % | 42.3 | U | 42 1 | U | |
| Thallium | (Tl), | total..... | 0.010 | U | 156 | % | 2.3 | | 2 0 | U | |
| Tin | (Sn), | total..... | | NR | | NR | | NR | | | NR |
| Vanadium | (V ), | total..... | 0 050 | U | 95 | % | 34.5 | | 30 6 | | |
| Zinc | (Zn), | total... ..... | 0 091 | | 94 | % | 41 5 | | 41 5 | | |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | | | | |
|---|---|---|---|---|
| | #176 C5030 | #176 C5031 | #176 C5028 | #176 C5029 |
| RFW Batch ID: | 8810-062-009 | 8810-070-002 | 8810-070-003 | 8810-070-004 |
| Customer ID | BH88A031 | BH88A033 | BH88A034 | BH88A035 |
| Collection Date: | 10/19/88 | / / | / / | / / |
| Matrix. | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | MG/KG | MG/KG |

**Metals**

| | | | | |
|---|---|---|---|---|
| Aluminum (Al), total..... | 13900 | 8730 | 7960 | 10100 |
| Antimony (Sb), total..... | 12.8 U | 12.9 U | 12.3 U | 1.2 U |
| Arsenic (As), total..... | 19.4 | 3.2 | 2.0 U | 0.53 |
| Barium (Ba), total..... | 43.0 U | 87.1 | 84.3 | 80 4 |
| Beryllium (Be), total..... | 1.1 | 1.1 | 1 1 | 1 2 |
| Cadmium (Cd), total..... | 7.3 | 4 1 | 5.5 | 4 2 |
| Calcium (Ca), total..... | 3900 | 2120 | 3550 | 2920 |
| Cesium (Cs), total..... | NR | NR | NR | NR |
| Chromium (Cr), total..... | 18.7 | 14.0 | 12 1 | 10 0 |
| Cobalt (Co), total..... | 10.8 U | 10.6 U | 10.4 U | 10 4 U |
| Copper (Cu), total..... | 21 4 | 16.2 | 18 9 | 17 1 |
| Iron (Fe), total..... | 17500 | 10900 | 10800 | 13500 |
| Lead (Pb), total..... | 33.0 | 11.0 | 17.1 | 1 6 |
| Lithium (Li), total..... | NR | NR | NR | NR |
| Magnesium (Mg), total..... | 1770 | 2410 | 2550 | 2290 |
| Manganese (Mn), total..... | 261 | 180 | 184 | 217 |
| Mercury (Hg), total..... . | 0.1 U | 2.9 | 0 11 U | 0.11 U |
| Molybdenum(Mo), total..... .. | NR | NR | NR | NR |
| Nickel (Ni), total. ... . . | 45 6 | 8.5 U | 8 4 U | 20 2 |
| Potassium (K ), total..... | 2340 | 1590 | 1880 | 1940 |
| Selenium (Se), total..... | 1.1 U | 1.1 U | 1.0 U | 0 10 U |
| Silver (Ag), total .... . | 2 2 U | 2.1 U | 2.1 U | 2 1 U |
| Sodium (Na), total..... | 365 | 1060 U | 1040 U | 1040 U |
| Strontium (Sr), total..... .. | 43 0 U | 29.6 | 20 9 U | 20 8 U |
| Thallium (Tl), total..... . . | 2 1 U | 2.2 U | 2.0 U | 0 20 U |
| Tin (Sn), total..... | NR | NR | NR | NR |
| Vanadium (V ), total..... .. | 32.5 | 23.9 | 23 7 | 30 6 |
| Zinc (Zn), total..... . | 58 1 | 35 2 | 45 9 | 48 3 |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | #176 CS033 | #175 CS018 | #175 CS019 | #175 CS021 |
|---|---|---|---|---|
| RFW Batch ID | 8810-070-005 | 8810-070-006 | 8810-070-007 | 8810-070-008 |
| Customer ID: | BH88A036 | BH88A037 | BH88A038 | BH88A039 |
| Collection Date. | / / | / / | / / | / / |
| Matrix. | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |
| **Metals** | | | | |
| Aluminum (Al), total..... | 10200 | 6570 | 7040 | 7770 |
| Antimony (Sb), total..... | 12.7 U | 12.1 U | 18 4 U | 12 7 U |
| Arsenic (As), total..... | 5.3 | 2.0 | 3.1 U | 2 1 U |
| Barium (Ba), total..... | 96 9 | 66.0 | 64.0 | 67 2 |
| Beryllium (Be), total..... | 1 2 | 1.1 U | 1 0 U | 1 1 U |
| Cadmium (Cd), total..... | 8.8 | 2.3 | 3.1 | 3 6 |
| Calcium (Ca), total..... | 3990 | 11400 | 8630 | 7200 |
| Cesium (Cs), total..... | NR | NR | NR | NR |
| Chromium (Cr), total..... | 8 6 | 6.6 | 15.7 | 9 8 |
| Cobalt (Co), total..... | 10.5 U | 10.6 U | 10 3 U | 10 9 U |
| Copper (Cu), total..... | 18.0 | 14.2 | 23.3 | 21 8 |
| Iron (Fe), total..... | 12900 | 9520 | 11500 | 10800 |
| Lead (Pb), total..... | 27.6 | 12.6 | 26 1 | 28 4 |
| Lithium (Li), total..... | NR | NR | NR | NR |
| Magnesium (Mg), total.... .... | 2180 | 2310 | 2450 | 2400 |
| Manganese (Mn), total..... . | 265 | 139 | 208 | 158 |
| Mercury (Hg), total .... .... | 2 3 | 0.98 | 2.1 | 2 3 |
| Molybdenum(Mo), total..... | NR | NR | NR | NR |
| Nickel (Ni), total ..... . . | 8.4 U | 8.5 U | 8 2 U | 8 7 U |
| Potassium (K ), total..... | 2120 | 1530 | 1730 | 1660 |
| Selenium (Se), total..... | 1.1 U | 1.0 U | 1.5 U | 1 0 U |
| Silver (Ag), total..... . | 2 1 U | 2.1 U | 2.1 U | 2 2 U |
| Sodium (Na), total..... | 1050 U | 1060 U | 1030 U | 1090 U |
| Strontium (Sr), total..... .. | 21.0 U | 21 4 | 20 6 U | 21 8 U |
| Thallium (Tl), total.... . ... | 2.1 U | 2.0 U | 3 1 U | 2 1 U |
| Tin (Sn), total..... | NR | NR | NR | NR |
| Vanadium (V ), total..... . | 29.6 | 19.0 | 20 6 | 20 9 |
| Zinc (Zn), total..... | 43 6 | 29.5 | 58.0 | 80 2 |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-070-009 | 8810-070-009 MS | 8810-070-009 DUP | FB 8810-070-010 |
| Customer ID. | BH88A040 | BH88A040 | BH88A040 | BH88A041 |
| Collection Date | / / | / / | / / | / / |
| Matrix. | Soil | Soil | Soil | Water |
| Units | MG/KG | % RECOVERY | MG/KG | MG/L |

Metals

| | | | | | |
|---|---|---|---|---|---|
| Aluminum (Al), total..... | 7350 | 0 * % | 7170 | 0 20 | U |
| Antimony (Sb), total..... | 12.6 U | 12.5 % | 12.4 U | 0 060 | U |
| Arsenic (As), total..... | 3.7 | 48.0 % | 2.1 U | 0.010 | U |
| Barium (Ba), total..... | 66.2 | 92.3 % | 68 7 | 0 20 | U |
| Beryllium (Be), total..... | 1.0 U | 103 % | 1 1 U | 0 0050 | U |
| Cadmium (Cd), total..... | 3 7 | 93.1 % | 3 2 | 0 0050 | U |
| Calcium (Ca), total..... . | 7540 | 0 % | 7690 | 5 0 | U |
| Cesium (Cs), total..... | NR | NR | NR | | NR |
| Chromium (Cr), total..... | 9.1 | 92.6 % | 14.7 | 0 010 | U |
| Cobalt (Co), total . ..... . | 10.5 U | 102 % | 10 7 U | 0 050 | U |
| Copper (Cu), total..... | 24 5 | 99.4 % | 23.9 | 0 025 | U |
| Iron (Fe), total..... .. | 11500 | 0 * % | 11000 | 0 10 | U |
| Lead (Pb), total.. ..... | 39.9 | 0 * % | 34.0 | 0 0050 | U |
| Lithium (Li), total..... .. | NR | NR | NR | | NR |
| Magnesium (Mg), total..... .... | 2510 | 0 % | 2390 | 5 0 | U |
| Manganese (Mn), total..... | 166 | 69.3 % | 156 | 0 015 | U |
| Mercury (Hg), total..... ... | 12.2 | 0 * % | 1 8 | 0 0010 | |
| Molybdenum(Mo), total..... | NR | NR | NR | | NR |
| Nickel (Ni), total..... | 8 4 U | 97.3 % | 14 3 | 0 040 | U |
| Potassium (K ), total..... . | 1740 | NR | 1690 | 5 0 | U |
| Selenium (Se), total ..... | 1 0 U | 0 % | 1 0 U | 0 0050 | U |
| Silver (Ag), total..... . .. | 2.1 U | 0 % | 2 1 U | 0 010 | U |
| Sodium (Na), total ..... | 1050 U | NR | 1070 U | 5 0 | U |
| Strontium (Sr), total ... ..... | 21 0 U | 925 % | 21.4 U | 0 10 | U |
| Thallium (Tl), total..... | 2.1 U | 90.4 % | 2 1 U | 0 010 | U |
| Tin (Sn), total ..... .. | NR | NR | NR | | NR |
| Vanadium (V ), total..... | 19.3 | 89.0 % | 21.6 | 0 050 | U |
| Zinc (Zn), total..... | 83.4 | 73 4 % | 81.4 | 0 020 | U |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

| Sample Information | #175 CS020 | #177 CS034 | CS0 | |
|---|---|---|---|---|
| RFW Batch ID· | 8810-070-011 | 8810-093-002 | 8810-093-002 MS | 8810-093-002 DUP |
| Customer ID. | BH88A042 | BH88A044 | BH88A044 | BH88A044 |
| Collection Date | / / | 10/25/88 | 10/25/88 | 10/25/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units | MG/KG | MG/KG | % RECOVERY | MG/KG |
| **Metals** | | | | |
| Aluminum (Al), total..... .. | 8250 | 14600 | 2200 * % | 11700 |
| Antimony (Sb), total..... | 12 7 U | 14.3 U | 0.96 % | 14 6 U |
| Arsenic (As), total..... | 2.2 | 3.3 | 258 % | 3 2 |
| Barium (Ba), total..... | 78.7 | 159 | 110 % | 192 |
| Beryllium (Be), total..... | 1.3 | 1.2 U | 99.5 % | 1 3 |
| Cadmium (Cd), total..... | 3.8 | 3.2 | 78.2 % | 2 6 |
| Calcium (Ca), total..... | 11400 | 43700 | 525 * % | 63800 |
| Cesium (Cs), total..... .. | NR | NR | NR | NR |
| Chromium (Cr), total..... | 8.4 | 10.0 | 74 9 % | 7 2 |
| Cobalt (Co), total..... | 11.0 U | 12.3 U | 92.9 % | 12 3 U |
| Copper (Cu), total..... . | 19 0 | 14 4 | 87.2 % | 11 9 |
| Iron (Fe), total... ..... | 12900 | 12800 | 2700 * % | 11500 |
| Lead (Pb), total... ..... | 14.5 | 37.4 | 847 * % | 37 5 |
| Lithium (Li), total.... .. . | NR | NR | NR | NR |
| Magnesium (Mg), total..... | 2570 | 3670 | 1.7 % | 3670 |
| Manganese (Mn), total..... | 152 | 194 | 30 0 % | 203 |
| Mercury (Hg), total.... ... . | 0.16 | 0.59 | 0 % | 0 77 |
| Molybdenum(Mo), total..... | NR | NR | NR | NR |
| Nickel (Ni), total..... . . | 10.4 | 9.8 U | 109 % | 9 8 U |
| Potassium (K ), total..... | 1960 | 1500 | NR | 1230 U |
| Selenium (Se), total..... . | 1.0 U | 1.2 U | 94 0 % | 1 2 U |
| Silver (Ag), total .... .. . | 2.2 U | 2.5 U | 0 % | 2 5 U |
| Sodium (Na), total..... ... | 1100 U | 1230 U | NR | 1230 U |
| Strontium (Sr), total..... .. | 27.9 | 128 | 93 8 % | 159 |
| Thallium (Tl), total..... | 2.1 U | 2 4 U | 153 % | 2 4 U |
| Tin (Sn), total..... ... | NR | NR | NR | NR |
| Vanadium (V ), total.. ..... | 23.2 | 28.2 | 82.8 % | 26 5 |
| Zinc (Zn), total... . .. | 40.0 | 42 0 | 66 1 % | 52 6 |

WESTON ANALYTICS
METALS - TOTAL
INORGANICS DATA SUMMARY REPORT

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | #177 CS035 | #177 CS036 | #177 CS037 | #182 CS022 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-093-003 | 8810-093-004 | 8810-093-005 | 8810-108-001 |
| Customer ID. | BH88A045 | BH88A046 | BH88A047 | BH88A048 |
| Collection Date: | 10/25/88 | 10/25/88 | 12/25/88 | / / |
| Matrix. | Soil | Soil | Soil | Soil |
| Units: | MG/KG | MG/KG | MG/KG | MG/KG |
| **Metals** | | | | |
| Aluminum (Al), total..... | 9520 | 8250 | 13300 | 14100 |
| Antimony (Sb), total..... | 14.1 U | 13.7 U | 15.0 U | 12 6 U |
| Arsenic (As), total..... | 3.6 | 3.5 | 3.4 | 2 1 U |
| Barium (Ba), total..... | 147 | 57.4 | 193 | 72 9 |
| Beryllium (Be), total..... | 1 2 U | 1.1 U | 1.4 | 1 4 |
| Cadmium (Cd), total..... | 1.5 | 2 4 | 2 9 | 5 4 |
| Calcium (Ca), total..... | 11700 | 9150 | 92600 | 7760 |
| Cesium (Cs), total..... | NR | NR | NR | NR |
| Chromium (Cr), total..... | 9.9 | 7.2 | 10 1 | 9 6 |
| Cobalt (Co), total..... | 11.9 U | 11.4 U | 12.3 U | 10 8 U |
| Copper (Cu), total..... | 19 2 | 41.6 | 13.2 | 21 1 |
| Iron (Fe), total ..... | 14700 | 22300 | 14900 | 17600 |
| Lead (Pb), total.... .. .. | 50 0 | 43.9 | 62.4 | 2 6 |
| Lithium (Li), total..... . . | NR | NR | NR | NR |
| Magnesium (Mg), total.. ..... . | 2480 | 6330 | 4240 | 3970 |
| Manganese (Mn), total..... | 199 | 530 | 262 | 276 |
| Mercury (Hg), total..... | 0.27 | 0.22 | 0.28 | 0 38 |
| Molybdenum(Mo), total..... | NR | NR | NR | NR |
| Nickel (Ni), total..... | 9.5 U | 9.1 U | 9.8 U | 22 3 |
| Potassium (K ), total..... | 1190 U | 2810 | 1270 | 2330 |
| Selenium (Se), total..... | 1 2 U | 1.1 U | 1.2 U | 1 0 U |
| Silver (Ag), total..... | 2 4 U | 2.3 U | 2.5 U | 2 2 U |
| Sodium (Na), total..... . | 1190 U | 1140 U | 1230 U | 1080 U |
| Strontium (Sr), total..... | 78 5 | 23.0 | 179 | 21 6 U |
| Thallium (Tl), total..... . | 2 4 U | 2.3 U | 2 5 U | 2 1 U |
| Tin (Sn), total..... | NR | NR | NR | NR |
| Vanadium (V ), total..... | 24 9 | 31.3 | 34 0 | 38 5 |
| Zinc (Zn), total..... | 54 6 | 68.4 | 37 1 | 72 8 |

174 177
176 182
170 129
175

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

| Sample Information | SWM [illegible] CSOC5 | SWM [illegible] CSOO2 | SWM [illegible] CSO[illegible] | SW[illegible] |
|---|---|---|---|---|
| RFW Batch ID | 8810-036-002 | 8810-036-003 | 8810-036-004 | 8810-036-005 |
| Customer ID. | BH88A002 | BH88A003 | BH88A004 | BH88A005 |
| Collection Date: | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 101% | 102% | 41 % | 97 % |
| Phenol-d5: | 128% | 131% | 52 % | 136% |
| 2,4,6-Br3-Phenol. | 117% | 116% | 92 % | 161% |
| Nitrobenzene-d5. | 66 % | 64 % | 36 % | 75 % |
| 2-Fluorobiphenyl | 67 % | 71 % | 38 % | 87 % |
| p-Terphenyl-d14: | 60 % | 99 % | 61 % | 89 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol | 1800 U | 1800 U | 320 J | 360 U |
| bis(2-Chloroethyl)Ether | 1800 U | 1800 U | 720 U | 360 U |
| 2-Chlorophenol | 1800 U | 1800 U | 720 U | 360 U |
| 1,3-Dichlorobenzene | 1800 U | 1800 U | 720 U | 360 U |
| 1,4-Dichlorobenzene | 1800 U | 1800 U | 720 U | 360 U |
| Benzyl Alcohol | 1800 U | 1800 U | 720 U | 360 U |
| 1,2-Dichlorobenzene | 1800 U | 1800 U | 720 U | 360 U |
| 2-Methylphenol | 1800 U | 1800 U | 720 U | 360 U |
| bis(2-Chloroisopropyl)Ether | 1800 U | 1800 U | 720 U | 360 U |
| 4-Methylphenol | 1800 U | 1800 U | 720 U | 360 U |
| N-Nitroso-di-n-propylamine | 1800 U | 1800 U | 720 U | 360 U |
| N-Nitroso-di-methylamine | NR | NR | NR | NR |
| Hexachloroethane | 1800 U | 1800 U | 720 U | 360 U |
| Nitrobenzene | 1800 U | 1800 U | 720 U | 360 U |
| Isophorone | 1800 U | 1800 U | 720 U | 360 U |
| 2-Nitrophenol | 1800 U | 1800 U | 720 U | 360 U |
| 2,4-Dimethylphenol | 1800 U | 1800 U | 720 U | 360 U |
| Benzoic Acid | 9300 U | 8900 U | 400 J | 1800 U |
| bis(2-Chloroethoxy)Methane | 1800 U | 1800 U | 720 U | 360 U |
| 2,4-Dichlorophenol | 1800 U | 1800 U | 720 U | 360 U |
| 1,2,4-Trichlorobenzene | 1800 U | 1800 U | 720 U | 360 U |
| Naphthalene | 1800 U | 1800 U | 720 U | 360 U |
| 4-Chloroaniline | 1800 U | 1800 U | 720 U | 360 U |
| Hexachlororbutadiene | 1800 U | 1800 U | 720 U | 360 U |
| 4-Chloro-3-methylphenol | 1800 U | 1800 U | 740 | 360 U |
| 2-Methylnaphthalene | 1800 U | 1800 U | 720 U | 360 U |
| Hexachlorocyclopentadiene | 1800 U | 1800 U | 720 U | 360 U |
| 2,4,6-Trichlorophenol | 1800 U | 1800 U | 720 U | 360 U |
| 2,4,5-Trichlorophenol | 9300 U | 8900 U | 3600 U | 1800 U |
| 2-Chloronaphthalene | 1800 U | 1800 U | 720 U | 360 U |
| 2-Nitroaniline | 9300 U | 8900 U | 3600 U | 1800 U |
| Dimethyl Phthalate | 1800 U | 1800 U | 720 U | 360 U |
| Acenaphthylene | 1800 U | 1800 U | 720 U | 360 U |
| 3-Nitroaniline | 9300 U | 8900 U | 3600 U | 1800 U |
| Acenaphthene | 1800 U | 1800 U | 720 U | 360 U |
| 2,4-Dinitrophenol | 9300 U | 8900 U | 3600 U | 1800 U |
| 4-Nitrophenol | 9300 U | 8900 U | 3600 U | 1800 U |
| Dibenzofuran | 1800 U | 1800 U | 720 U | 360 U |
| 2,4-Dinitrotoluene | 1800 U | 1800 U | 720 U | 360 U |
| 2,6-Dinitrotoluene | 1800 U | 1800 U | 720 U | 360 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

| Sample Information | # 174 CS00 5 | # 174 CS002 | # 174 CS004 | # 174 CS-- |
|---|---|---|---|---|
| RFW Batch ID. | 8810-036-002 | 8810-036-003 | 8810-036-004 | 8810-036-005 |
| Customer ID: | BH88A002 | BH88A003 | BH88A004 | BH88A005 |
| Collection Date | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |
| Matrix. | Soil | Soil | Soil | Soil |
| Units. | UG/KG | UG/KG | UG/KG | UG/KG |
| **Analytes** | | | | |
| Diethylphthalate..... | 1800 U | 1800 U | 720 U | 360 U |
| 4-Chlorophenyl-phenylether..... | 1800 U | 1800 U | 720 U | 360 U |
| Fluorene..... | 1800 U | 1800 U | 720 U | 360 U |
| 4-Nitroaniline..... | 9300 U | 8900 U | 3600 U | 1800 U |
| 4,6-Dinitro-2-methylphenol.... | 9300 U | 8900 U | 3600 U | 1800 U |
| N-Nitrosodiphenylamine..... | 1800 U | 1800 U | 720 U | 360 U |
| 4-Bromophenyl-phenylether.... . | 1800 U | 1800 U | 720 U | 360 U |
| Hexachlorobenzene..... | 1800 U | 1800 U | 720 U | 360 U |
| Pentachlorophenol..... . | 9300 U | 8900 U | 3600 U | 1800 U |
| Phenanthrene..... .... | 1800 U | 1800 U | 720 U | 360 U |
| Anthracene..... | 1800 U | 1800 U | 180 J | 360 U |
| di-n-Butyl Phthalate..... | 1800 U | 1800 U | 720 U | 360 U |
| Fluoranthene ..... | 1800 U | 1800 U | 720 U | 1900 |
| Pyrene..... | 1800 U | 1800 U | 720 U | 360 U |
| Butyl Benzyl Phthalate..... .. | 1800 U | 1800 U | 720 U | 360 U |
| 3,3'-Dichlorobenzidine..... | 3700 U | 3500 U | 1400 U | 720 U |
| Benzo(a)Anthracene..... .. | 1800 U | 1800 U | 720 U | 360 U |
| bis(2-Ethylhexyl)Phthalate... . | 1700 J | 1400 J | 1700 | 430 |
| Chrysene..... . .. | 1800 U | 1800 U | 720 U | 360 U |
| di-n-Octyl Phthalate ..... . | 1800 U | 1800 U | 720 U | 360 U |
| Benzo(b)Fluoranthene..... .... | 1800 U | 1800 U | 720 U | 360 U |
| Benzo(k)Fluoranthene..... .. | 1800 U | 1800 U | 720 U | 360 U |
| Benzo(a)Pyrene..... | 1800 U | 1800 U | 720 U | 360 U |
| Indeno(1,2,3-cd)Pyrene.... . . | 1800 U | 1800 U | 720 U | 360 U |
| Dibenz(a,h)Anthracene..... | 1800 U | 1800 U | 720 U | 360 U |
| Benzo(g,h,i)Perylene..... . | 1800 U | 1800 U | 720 U | 360 U |
| Benzidine..... | NR | NR | NR | NR |
| Aniline..... | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | Summary CS009 | Summary CS006 | Summary CS007 | Summary CS012 |
|---|---|---|---|---|
| RFW Batch ID. | 8810-036-006 | 8810-036-007 | 8810-036-008 | 8810-036-009 |
| Customer ID. | BH88A006 | BH88A007 | BH88A008 | BH88A009 |
| Collection Date: | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units. | UG/KG | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 75 % | 95 % | 55 % | 86 % |
| Phenol-d5: | 112% | 123% | 85 % | 127% |
| 2,4,6-Br3-Phenol: | 156% | 151% | 103% | 155% |
| Nitrobenzene-d5: | 59 % | 75 % | 42 % | 66 % |
| 2-Fluorobiphenyl: | 79 % | 79 % | 56 % | 81 % |
| p-Terphenyl-d14. | 90 % | 88 % | 65 % | 100% |

**Analytes**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| bis(2-Chloroethyl)Ether | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2-Chlorophenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| 1,3-Dichlorobenzene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 1,4-Dichlorobenzene | 360 | U | 1800 | U | 370 | U | 360 | U |
| Benzyl Alcohol | 360 | U | 1800 | U | 370 | U | 360 | U |
| 1,2-Dichlorobenzene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2-Methylphenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| bis(2-Chloroisopropyl)Ether | 360 | U | 1800 | U | 370 | U | 360 | U |
| 4-Methylphenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| N-Nitroso-di-n-propylamine | 360 | U | 1800 | U | 370 | U | 360 | U |
| N-Nitroso-di-methylamine | | NR | | NR | | NR | | NR |
| Hexachloroethane | 360 | U | 1800 | U | 370 | U | 360 | U |
| Nitrobenzene | 360 | U | 1800 | U | 370 | U | 360 | U |
| Isophorone | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2-Nitrophenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2,4-Dimethylphenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| Benzoic Acid | 1800 | U | 9000 | U | 1800 | U | 1800 | U |
| bis(2-Chloroethoxy)Methane | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2,4-Dichlorophenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| 1,2,4-Trichlorobenzene | 360 | U | 1800 | U | 370 | U | 360 | U |
| Naphthalene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 4-Chloroaniline | 360 | U | 1800 | U | 370 | U | 360 | U |
| Hexachlororbutadiene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 4-Chloro-3-methylphenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2-Methylnaphthalene | 360 | U | 1800 | U | 370 | U | 360 | U |
| Hexachlorocyclopentadiene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2,4,6-Trichlorophenol | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2,4,5-Trichlorophenol | 1800 | U | 9000 | U | 1800 | U | 1800 | U |
| 2-Chloronaphthalene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2-Nitroaniline | 1800 | U | 9000 | U | 1800 | U | 1800 | U |
| Dimethyl Phthalate | 360 | U | 1800 | U | 370 | U | 360 | U |
| Acenaphthylene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 3-Nitroaniline | 1800 | U | 9000 | U | 1800 | U | 1800 | U |
| Acenaphthene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2,4-Dinitrophenol | 1800 | U | 9000 | U | 1800 | U | 1800 | U |
| 4-Nitrophenol | 1800 | U | 9000 | U | 1800 | U | 1800 | U |
| Dibenzofuran | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2,4-Dinitrotoluene | 360 | U | 1800 | U | 370 | U | 360 | U |
| 2,6-Dinitrotoluene | 360 | U | 1800 | U | 370 | U | 360 | U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | #174 CS007 | #174 CS006 | #74 CS007 | #174 CS002 |
|---|---|---|---|---|
| RFW Batch ID | 8810-036-006 | 8810-036-007 | 8810-036-008 | 8810-036-009 |
| Customer ID | BH88A006 | BH88A007 | BH88A008 | BH88A009 |
| Collection Date: | 10/12/88 | 10/12/88 | 10/12/88 | 10/12/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units | UG/KG | UG/KG | UG/KG | UG/KG |
| **Analytes** | | | | |
| Diethylphthalate | 360 U | 1800 U | 370 U | 360 U |
| 4-Chlorophenyl-phenylether | 360 U | 1800 U | 370 U | 360 U |
| Fluorene | 360 U | 1800 U | 370 U | 360 U |
| 4-Nitroaniline | 1800 U | 9000 U | 1800 U | 1800 U |
| 4,6-Dinitro-2-methylphenol | 1800 U | 9000 U | 1800 U | 1800 U |
| N-Nitrosodiphenylamine | 360 U | 1800 U | 370 U | 360 U |
| 4-Bromophenyl-phenylether | 360 U | 1800 U | 370 U | 360 U |
| Hexachlorobenzene | 360 U | 1800 U | 370 U | 360 U |
| Pentachlorophenol | 1800 U | 9000 U | 1800 U | 1800 U |
| Phenanthrene | 360 U | 1800 U | 76 J | 360 U |
| Anthracene | 360 U | 1800 U | 370 U | 360 U |
| di-n-Butyl Phthalate | 360 U | 1800 U | 370 U | 360 U |
| Fluoranthene | 360 U | 1800 U | 130 J | 360 U |
| Pyrene | 360 U | 1800 U | 86 J | 360 U |
| Butyl Benzyl Phthalate | 360 U | 1800 U | 370 U | 360 U |
| 3,3'-Dichlorobenzidine | 720 U | 3600 U | 730 U | 710 U |
| Benzo(a)Anthracene | 360 U | 1800 U | 370 U | 360 U |
| bis(2-Ethylhexyl)Phthalate | 630 | 1700 J | 430 | 410 |
| Chrysene | 360 U | 1800 U | 370 U | 360 U |
| di-n-Octyl Phthalate | 360 U | 1800 U | 370 U | 360 U |
| Benzo(b)Fluoranthene | 360 U | 1800 U | 370 U | 360 U |
| Benzo(k)Fluoranthene | 360 U | 1800 U | 370 U | 360 U |
| Benzo(a)Pyrene | 360 U | 1800 U | 370 U | 360 U |
| Indeno(1,2,3-cd)Pyrene | 360 U | 1800 U | 370 U | 360 U |
| Dibenz(a,h)Anthracene | 360 U | 1800 U | 370 U | 360 U |
| Benzo(g,h,i)Perylene | 360 U | 1800 U | 370 U | 360 U |
| Benzidine | NR | NR | NR | NR |
| Aniline | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | | | |
|---|---|---|---|---|
| | SWMU 174 CSO 15 | SWMU 174 CSO 13 | | |
| RFW Batch ID | 8810-036-011 | 8810-036-012 | 8810-036-013 | 8810-036-013 MS |
| Customer ID | BH88A011 | BH88A012 | BH88A013 | BH88A013 |
| Collection Date | 10/13/88 | 10/13/88 | 10/13/88 | 10/13/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units | UG/KG | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 74 % | 90 % | 96 % | 66 % |
| Phenol-d5: | 110% | 127% | 140% | 97 % |
| 2,4,6-Br3-Phenol. | 128% | 160% | 150% | 60 % |
| Nitrobenzene-d5: | 56 % | 76 % | 71 % | 52 % |
| 2-Fluorobiphenyl: | 68 % | 72 % | 70 % | 53 % |
| p-Terphenyl-d14 | 86 % | 108% | 114% | 86 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol | 370 U | 360 U | 92 J | 71 % |
| bis(2-Chloroethyl)Ether | 370 U | 360 U | 360 U | 360 U |
| 2-Chlorophenol | 370 U | 360 U | 360 U | 70 % |
| 1,3-Dichlorobenzene | 370 U | 360 U | 360 U | 360 U |
| 1,4-Dichlorobenzene | 370 U | 360 U | 360 U | 45 % |
| Benzyl Alcohol | 370 U | 360 U | 360 U | 360 U |
| 1,2-Dichlorobenzene | 370 U | 360 U | 360 U | 360 U |
| 2-Methylphenol | 370 U | 360 U | 360 U | 360 U |
| bis(2-Chloroisopropyl)Ether. | 370 U | 360 U | 360 U | 360 U |
| 4-Methylphenol | 370 U | 360 U | 360 U | 360 U |
| N-Nitroso-di-n-propylamine | 370 U | 360 U | 360 U | 63 % |
| N-Nitroso-di-methylamine | NR | NR | NR | NR |
| Hexachloroethane | 370 U | 360 U | 360 U | 360 U |
| Nitrobenzene | 370 U | 360 U | 360 U | 360 U |
| Isophorone | 370 U | 360 U | 360 U | 360 U |
| 2-Nitrophenol | 370 U | 360 U | 360 U | 360 U |
| 2,4-Dimethylphenol | 370 U | 360 U | 360 U | 360 U |
| Benzoic Acid | 1800 U | 1800 U | 1800 U | 1800 U |
| bis(2-Chloroethoxy)Methane. | 370 U | 360 U | 360 U | 360 U |
| 2,4-Dichlorophenol | 370 U | 360 U | 360 U | 360 U |
| 1,2,4-Trichlorobenzene | 370 U | 360 U | 360 U | 56 % |
| Naphthalene | 370 U | 360 U | 360 U | 360 U |
| 4-Chloroaniline | 370 U | 360 U | 360 U | 360 U |
| Hexachlororbutadiene. | 370 U | 360 U | 360 U | 360 U |
| 4-Chloro-3-methylphenol | 370 U | 720 | 960 | 94 % |
| 2-Methylnaphthalene | 370 U | 360 U | 360 U | 360 U |
| Hexachlorocyclopentadiene | 370 U | 360 U | 360 U | 360 U |
| 2,4,6-Trichlorophenol | 370 U | 360 U | 360 U | 360 U |
| 2,4,5-Trichlorophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 2-Chloronaphthalene | 370 U | 360 U | 360 U | 360 U |
| 2-Nitroaniline | 1800 U | 1800 U | 1800 U | 1800 U |
| Dimethyl Phthalate | 370 U | 360 U | 81 J | 360 U |
| Acenaphthylene | 370 U | 360 U | 360 U | 360 U |
| 3-Nitroaniline | 1800 U | 1800 U | 1800 U | 1800 U |
| Acenaphthene | 370 U | 360 U | 360 U | 63 % |
| 2,4-Dinitrophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 4-Nitrophenol | 1800 U | 1800 U | 1800 U | 44 % |
| Dibenzofuran | 370 U | 360 U | 360 U | 360 U |
| 2,4-Dinitrotoluene | 370 U | 360 U | 360 U | 77 % |
| 2,6-Dinitrotoluene | 370 U | 360 U | 360 U | 360 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | | | | |
|---|---|---|---|---|
| | #1741 CS015 | #1741 CS013 | | |
| RFW Batch ID. | 8810-036-011 | 8810-036-012 | 8810-036-013 | 8810-036-013 MS |
| Customer ID | BH88A011 | BH88A012 | BH88A013 | BH88A013 |
| Collection Date | 10/13/88 | 10/13/88 | 10/13/88 | 10/13/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units. | UG/KG | UG/KG | UG/KG | UG/KG |

| Analytes | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Diethylphthalate | 370 | U | 360 | U | 360 | U | 360 | U |
| 4-Chlorophenyl-phenylether | 370 | U | 360 | U | 360 | U | 360 | U |
| Fluorene | 370 | U | 360 | U | 360 | U | 360 | U |
| 4-Nitroaniline | 1800 | U | 1800 | U | 1800 | U | 1800 | U |
| 4,6-Dinitro-2-methylphenol | 1800 | U | 1800 | U | 1800 | U | 1800 | U |
| N-Nitrosodiphenylamine | 370 | U | 360 | U | 360 | U | 360 | U |
| 4-Bromophenyl-phenylether | 370 | U | 360 | U | 360 | U | 360 | U |
| Hexachlorobenzene | 370 | U | 360 | U | 360 | U | 360 | U |
| Pentachlorophenol | 1800 | U | 1800 | U | 1800 | U | 59 | % |
| Phenanthrene | 370 | U | 360 | U | 360 | U | 360 | U |
| Anthracene | 370 | U | 360 | U | 360 | U | 360 | U |
| di-n-Butyl Phthalate | 370 | U | 360 | U | 140 | J | 360 | U |
| Fluoranthene | 370 | U | 360 | U | 360 | U | 360 | U |
| Pyrene | 370 | U | 360 | U | 360 | U | 66 | % |
| Butyl Benzyl Phthalate | 370 | U | 360 | U | 360 | U | 360 | U |
| 3,3'-Dichlorobenzidine | 730 | U | 720 | U | 720 | U | 720 | U |
| Benzo(a)Anthracene | 370 | U | 360 | U | 360 | U | 360 | U |
| bis(2-Ethylhexyl)Phthalate | 380 | | 590 | | 360 | U | 360 | U |
| Chrysene | 370 | U | 360 | U | 360 | U | 360 | U |
| di-n-Octyl Phthalate | 370 | U | 360 | U | 360 | U | 360 | U |
| Benzo(b)Fluoranthene | 370 | U | 360 | U | 360 | U | 360 | U |
| Benzo(k)Fluoranthene | 370 | U | 360 | U | 360 | U | 360 | U |
| Benzo(a)Pyrene | 370 | U | 360 | U | 360 | U | 360 | U |
| Indeno(1,2,3-cd)Pyrene | 370 | U | 360 | U | 360 | U | 360 | U |
| Dibenz(a,h)Anthracene | 370 | U | 360 | U | 360 | U | 360 | U |
| Benzo(g,h,i)Perylene | 370 | U | 360 | U | 360 | U | 360 | U |
| Benzidine | NR | | NR | | NR | | NR | |

| | | | | |
|---|---|---|---|---|
| Aniline | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | | | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-013 MSD | 8810-036-014 | 8810-036-015 | 8810-036-016 |
| Customer ID: | BH88A013 | BH88A014 | BH88A015 | BH88A016 |
| Collection Date: | 10/13/88 | 10/13/88 | 10/13/88 | 10/13/88 |
| Matrix: | Soil | Soil | Water | Soil |
| Units. | UG/KG | UG/KG | UG/L | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 72 % | 63 % | 49 % | 77 % |
| Phenol-d5. | 104% | 99 % | 76 % | 124% |
| 2,4,6-Br3-Phenol. | 109% | 118% | 45 % | 113% |
| Nitrobenzene-d5· | 57 % | 65 % | 50 % | 54 % |
| 2-Fluorobiphenyl: | 54 % | 75 % | 42 % | 70 % |
| p-Terphenyl-d14. | 84 % | 82 % | 83 % | 88 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol..... | 76 % | 1700 U | 10 U | 350 U |
| bis(2-Chloroethyl)Ether..... .. | 360 U | 1700 U | 10 U | 350 U |
| 2-Chlorophenol..... | 74 % | 1700 U | 10 U | 350 U |
| 1,3-Dichlorobenzene..... | 360 U | 1700 U | 10 U | 350 U |
| 1,4-Dichlorobenzene..... .. | 47 % | 1700 U | 10 U | 350 U |
| Benzyl Alcohol..... ..... | 360 U | 1700 U | 10 U | 350 U |
| 1,2-Dichlorobenzene..... .. | 360 U | 1700 U | 10 U | 350 U |
| 2-Methylphenol..... | 360 U | 1700 U | 10 U | 350 U |
| bis(2-Chloroisopropyl)Ether .. | 360 U | 1700 U | 10 U | 350 U |
| 4-Methylphenol..... | 360 U | 1700 U | 10 U | 350 U |
| N-Nitroso-di-n-propylamine..... | 66 % | 1700 U | 10 U | 350 U |
| N-Nitroso-di-methylamine... .. | NR | NR | NR | NR |
| Hexachloroethane..... .. | 360 U | 1700 U | 10 U | 350 U |
| Nitrobenzene..... | 360 U | 1700 U | 10 U | 350 U |
| Isophorone..... | 360 U | 1700 U | 10 U | 350 U |
| 2-Nitrophenol..... .. | 360 U | 1700 U | 10 U | 350 U |
| 2,4-Dimethylphenol..... ... | 360 U | 1700 U | 10 U | 350 U |
| Benzoic Acid..... ... | 1800 U | 8700 U | 50 U | 1800 U |
| bis(2-Chloroethoxy)Methane..... | 360 U | 1700 U | 10 U | 350 U |
| 2,4-Dichlorophenol..... .. | 360 U | 1700 U | 10 U | 350 U |
| 1,2,4-Trichlorobenzene.. ..... | 59 % | 1700 U | 10 U | 350 U |
| Naphthalene..... .. | 360 U | 1700 U | 10 U | 350 U |
| 4-Chloroaniline..... .. | 360 U | 1700 U | 10 U | 350 U |
| Hexachlororbutadiene..... . | 360 U | 1700 U | 10 U | 350 U |
| 4-Chloro-3-methylphenol..... | 99 % | 1700 U | 10 U | 350 U |
| 2-Methylnaphthalene..... | 360 U | 1700 U | 10 U | 350 U |
| Hexachlorocyclopentadiene.... . | 360 U | 1700 U | 10 U | 350 U |
| 2,4,6-Trichlorophenol..... ... | 360 U | 1700 U | 10 U | 350 U |
| 2,4,5-Trichlorophenol..... | 1800 U | 8700 U | 50 U | 1800 U |
| 2-Chloronaphthalene..... | 360 U | 1700 U | 10 U | 350 U |
| 2-Nitroaniline..... | 1800 U | 8700 U | 50 U | 1800 U |
| Dimethyl Phthalate..... | 360 U | 1700 U | 10 U | 350 U |
| Acenaphthylene..... | 360 U | 1700 U | 10 U | 350 U |
| 3-Nitroaniline..... | 1800 U | 8700 U | 50 U | 1800 U |
| Acenaphthene..... | 66 % | 1700 U | 10 U | 350 U |
| 2,4-Dinitrophenol..... | 1800 U | 8700 U | 50 U | 1800 U |
| 4-Nitrophenol..... | 33 % | 8700 U | 50 U | 1800 U |
| Dibenzofuran..... | 360 U | 1700 U | 10 U | 350 U |
| 2,4-Dinitrotoluene..... | 73 % | 1700 U | 10 U | 350 U |
| 2,6-Dinitrotoluene..... | 360 U | 1700 U | 10 U | 350 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | | #174 CS011 | | #174 CS014 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-013 MSD | 8810-036-014 | 8810-036-015 | 8810-036-016 |
| Customer ID | BH88A013 | BH88A014 | BH88A015 | BH88A016 |
| Collection Date: | 10/13/88 | 10/13/88 | 10/13/88 | 10/13/88 |
| Matrix: | Soil | Soil | Water | Soil |
| Units | UG/KG | UG/KG | UG/L | UG/KG |
| **Analytes** | | | | |
| Diethylphthalate | 360 U | 1700 U | 10 U | 350 U |
| 4-Chlorophenyl-phenylether | 360 U | 1700 U | 10 U | 350 U |
| Fluorene | 360 U | 1700 U | 10 U | 350 U |
| 4-Nitroaniline | 1800 U | 8700 U | 50 U | 1800 U |
| 4,6-Dinitro-2-methylphenol | 1800 U | 8700 U | 50 U | 1800 U |
| N-Nitrosodiphenylamine | 360 U | 1700 U | 10 U | 350 U |
| 4-Bromophenyl-phenylether | 360 U | 1700 U | 10 U | 350 U |
| Hexachlorobenzene | 360 U | 1700 U | 10 U | 350 U |
| Pentachlorophenol | 122 % | 8700 U | 50 U | 1800 U |
| Phenanthrene | 360 U | 1700 U | 10 U | 350 U |
| Anthracene | 360 U | 1700 U | 10 U | 350 U |
| di-n-Butyl Phthalate | 95 J | 1700 U | 10 U | 350 U |
| Fluoranthene | 360 U | 1700 U | 10 U | 350 U |
| Pyrene | 68 % | 1700 U | 10 U | 350 U |
| Butyl Benzyl Phthalate | 360 U | 1700 U | 10 U | 350 U |
| 3,3'-Dichlorobenzidine | 300 J | 3500 U | 20 U | 700 U |
| Benzo(a)Anthracene | 360 U | 1700 U | 10 U | 350 U |
| bis(2-Ethylhexyl)Phthalate | 360 U | 1100 J | 10 U | 530 |
| Chrysene | 360 U | 1700 U | 10 U | 350 U |
| di-n-Octyl Phthalate | 360 U | 1700 U | 10 U | 350 U |
| Benzo(b)Fluoranthene | 360 U | 1700 U | 10 U | 350 U |
| Benzo(k)Fluoranthene | 360 U | 1700 U | 10 U | 350 U |
| Benzo(a)Pyrene | 360 U | 1700 U | 10 U | 350 U |
| Indeno(1,2,3-cd)Pyrene | 360 U | 1700 U | 10 U | 350 U |
| Dibenz(a,h)Anthracene | 360 U | 1700 U | 10 U | 350 U |
| Benzo(g,h,i)Perylene | 360 U | 1700 U | 10 U | 350 U |
| Benzidine | NR | NR | NR | NR |
| Aniline | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

| Sample Information | SWMU 174 CSC 10 | SWMU 174 CSC 03 | SWMU 174 CSC 01 | |
|---|---|---|---|---|
| RFW Batch ID: | 8810-036-017 | 8810-036-018 | 8810-036-019 | 8810-051-002 |
| Customer ID: | BH88A017 | BH88A018 | BH88A019 | BH88A021 |
| Collection Date. | 10/13/88 | 10/13/88 | 10/13/88 | 10/14/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol· | 80 % | 66 % | 73 % | 77 % |
| Phenol-d5. | 124% | 98 % | 112% | 101% |
| 2,4,6-Br3-Phenol. | 105% | 96 % | 92 % | 72 % |
| Nitrobenzene-d5· | 55 % | 47 % | 51 % | 59 % |
| 2-Fluorobiphenyl | 62 % | 66 % | 71 % | 53 % |
| p-Terphenyl-d14· | 71 % | 82 % | 82 % | 51 % |

**Analytes**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | 340 | U | 340 | U | 340 | U | 350 | U |
| bis(2-Chloroethyl)Ether | 340 | U | 340 | U | 340 | U | 350 | U |
| 2-Chlorophenol | 340 | U | 340 | U | 340 | U | 350 | U |
| 1,3-Dichlorobenzene | 340 | U | 340 | U | 340 | U | 350 | U |
| 1,4-Dichlorobenzene | 340 | U | 340 | U | 340 | U | 350 | U |
| Benzyl Alcohol | 340 | U | 340 | U | 340 | U | 350 | U |
| 1,2-Dichlorobenzene | 340 | U | 340 | U | 340 | U | 350 | U |
| 2-Methylphenol | 340 | U | 340 | U | 340 | U | 350 | U |
| bis(2-Chloroisopropyl)Ether | 340 | U | 340 | U | 340 | U | 350 | U |
| 4-Methylphenol | 340 | U | 340 | U | 340 | U | 350 | U |
| N-Nitroso-di-n-propylamine | 340 | U | 340 | U | 340 | U | 350 | U |
| N-Nitroso-di-methylamine | | NR | | NR | | NR | | NR |
| Hexachloroethane | 340 | U | 340 | U | 340 | U | 350 | U |
| Nitrobenzene | 340 | U | 340 | U | 340 | U | 350 | U |
| Isophorone | 340 | U | 340 | U | 340 | U | 350 | U |
| 2-Nitrophenol | 340 | U | 340 | U | 340 | U | 350 | U |
| 2,4-Dimethylphenol | 340 | U | 340 | U | 340 | U | 350 | U |
| Benzoic Acid | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| bis(2-Chloroethoxy)Methane | 340 | U | 340 | U | 340 | U | 350 | U |
| 2,4-Dichlorophenol | 340 | U | 340 | U | 340 | U | 350 | U |
| 1,2,4-Trichlorobenzene | 340 | U | 340 | U | 340 | U | 350 | U |
| Naphthalene | 340 | U | 340 | U | 340 | U | 350 | U |
| 4-Chloroaniline | 340 | U | 340 | U | 340 | U | 350 | U |
| Hexachlorobutadiene | 340 | U | 340 | U | 340 | U | 350 | U |
| 4-Chloro-3-methylphenol | 340 | U | 340 | U | 340 | U | 350 | U |
| 2-Methylnaphthalene | 340 | U | 340 | U | 340 | U | 350 | U |
| Hexachlorocyclopentadiene | 340 | U | 340 | U | 340 | U | 350 | U |
| 2,4,6-Trichlorophenol | 340 | U | 340 | U | 340 | U | 350 | U |
| 2,4,5-Trichlorophenol | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| 2-Chloronaphthalene | 340 | U | 340 | U | 340 | U | 350 | U |
| 2-Nitroaniline | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| Dimethyl Phthalate | 340 | U | 340 | U | 340 | U | 350 | U |
| Acenaphthylene | 340 | U | 340 | U | 340 | U | 350 | U |
| 3-Nitroaniline | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| Acenaphthene | 340 | U | 340 | U | 340 | U | 350 | U |
| 2,4-Dinitrophenol | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| 4-Nitrophenol | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| Dibenzofuran | 340 | U | 340 | U | 340 | U | 350 | U |
| 2,4-Dinitrotoluene | 340 | U | 340 | U | 340 | U | 350 | U |
| 2,6-Dinitrotoluene | 340 | U | 340 | U | 340 | U | 350 | U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | #174 CS010 | | #174 CS003 | | #174 CS001 | | #170 CS016 | |
|---|---|---|---|---|---|---|---|---|
| RFW Batch ID: | 8810-036-017 | | 8810-036-018 | | 8810-036-019 | | 8810-051-002 | |
| Customer ID. | BH88A017 | | BH88A018 | | BH88A019 | | BH88A021 | |
| Collection Date: | 10/13/88 | | 10/13/88 | | 10/13/88 | | 10/14/88 | |
| Matrix | Soil | | Soil | | Soil | | Soil | |
| Units: | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| **Analytes** | | | | | | | | |
| Diethylphthalate | 340 | U | 340 | U | 340 | U | 350 | U |
| 4-Chlorophenyl-phenylether | 340 | U | 340 | U | 340 | U | 350 | U |
| Fluorene | 340 | U | 340 | U | 340 | U | 350 | U |
| 4-Nitroaniline | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| 4,6-Dinitro-2-methylphenol | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| N-Nitrosodiphenylamine | 340 | U | 340 | U | 340 | U | 350 | U |
| 4-Bromophenyl-phenylether | 340 | U | 340 | U | 340 | U | 350 | U |
| Hexachlorobenzene | 340 | U | 340 | U | 340 | U | 350 | U |
| Pentachlorophenol | 1700 | U | 1700 | U | 1700 | U | 1800 | U |
| Phenanthrene | 340 | U | 90 | J | 340 | U | 350 | U |
| Anthracene | 340 | U | 340 | U | 340 | U | 350 | U |
| di-n-Butyl Phthalate | 340 | U | 340 | U | 340 | U | 590 | B |
| Fluoranthene | 340 | U | 130 | J | 130 | J | 110 | J |
| Pyrene | 340 | U | 110 | J | 97 | J | 350 | U |
| Butyl Benzyl Phthalate | 340 | U | 340 | U | 340 | U | 350 | U |
| 3,3'-Dichlorobenzidine | 670 | U | 680 | U | 690 | U | 700 | U |
| Benzo(a)Anthracene | 340 | U | 110 | J | 340 | U | 350 | U |
| bis(2-Ethylhexyl)Phthalate | 428 | | 340 | U | 340 | U | 96 | J |
| Chrysene | 340 | U | 130 | J | 98 | J | 350 | U |
| di-n-Octyl Phthalate | 340 | U | 340 | U | 340 | U | 350 | U |
| Benzo(b)Fluoranthene | 340 | U | 340 | U | 340 | U | 350 | U |
| Benzo(k)Fluoranthene | 340 | U | 340 | U | 340 | U | 350 | U |
| Benzo(a)Pyrene | 340 | U | 340 | U | 340 | U | 350 | U |
| Indeno(1,2,3-cd)Pyrene | 340 | U | 340 | U | 340 | U | 350 | U |
| Dibenz(a,h)Anthracene | 340 | U | 340 | U | 340 | U | 350 | U |
| Benzo(g,h,i)Perylene | 340 | U | 340 | U | 340 | U | 350 | U |
| Benzidine | | NR | | NR | | NR | | NR |
| Aniline | | NR | | NR | | NR | | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



| Sample Information | | | | |
|---|---|---|---|---|
| | SUMP 1 (SC 13 | SUMP 176 (SC 24 | SUMP [illegible] (SC 25 | SUMP 176 (SC 26 |
| RFW Batch ID: | 8810-051-003 | 8810-062-002 | 8810-062-003 | 8810-062-004 |
| Customer ID | BH88A022 | [redacted] | [redacted] | [redacted] |
| Collection Date. | 10/14/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |

| Surrogate Recovery | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 63 % | 65 % | 59 % | 58 % |
| Phenol-d5. | 75 % | 77 % | 74 % | 70 % |
| 2,4,6-Br3-Phenol: | 97 % | 61 % | 82 % | 78 % |
| Nitrobenzene-d5. | 46 % | 53 % | 45 % | 42 % |
| 2-Fluorobiphenyl. | 53 % | 56 % | 57 % | 57 % |
| p-Terphenyl-d14 | 90 % | 70 % | 76 % | 75 % |

| Analytes | | | | |
|---|---|---|---|---|
| Phenol | 1800 U | 1800 U | 1800 U | 1800 U |
| bis(2-Chloroethyl)Ether. | 1800 U | 1800 U | 1800 U | 1800 U |
| 2-Chlorophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 1,3-Dichlorobenzene | 1800 U | 1800 U | 1800 U | 1800 U |
| 1,4-Dichlorobenzene | 1800 U | 1800 U | 1800 U | 1800 U |
| Benzyl Alcohol | 1800 U | 1800 U | 1800 U | 1800 U |
| 1,2-Dichlorobenzene | 1800 U | 1800 U | 1800 U | 1800 U |
| 2-Methylphenol | 1800 U | 1800 U | 1800 U | 1800 U |
| bis(2-Chloroisopropyl)Ether | 1800 U | 1800 U | 1800 U | 1800 U |
| 4-Methylphenol | 1800 U | 1800 U | 1800 U | 1800 U |
| N-Nitroso-di-n-propylamine | 1800 U | 1800 U | 1800 U | 1800 U |
| N-Nitroso-di-methylamine | NR | NR | NR | NR |
| Hexachloroethane | 1800 U | 1800 U | 1800 U | 1800 U |
| Nitrobenzene | 1800 U | 1800 U | 1800 U | 1800 U |
| Isophorone | 1800 U | 1800 U | 1800 U | 1800 U |
| 2-Nitrophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 2,4-Dimethylphenol | 1800 U | 1800 U | 1800 U | 1800 U |
| Benzoic Acid | 8800 U | 8900 U | 8900 U | 8800 U |
| bis(2-Chloroethoxy)Methane | 1800 U | 1800 U | 1800 U | 1800 U |
| 2,4-Dichlorophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 1,2,4-Trichlorobenzene | 1800 U | 1800 U | 1800 U | 1800 U |
| Naphthalene | 1800 U | 1800 U | 1800 U | 1800 U |
| 4-Chloroaniline | 1800 U | 1800 U | 1800 U | 1800 U |
| Hexachlororbutadiene | 1800 U | 1800 U | 1800 U | 1800 U |
| 4-Chloro-3-methylphenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 2-Methylnaphthalene | 1800 U | 1800 U | 1800 U | 1800 U |
| Hexachlorocyclopentadiene | 1800 U | 1800 U | 1800 U | 1800 U |
| 2,4,6-Trichlorophenol | 1800 U | 1800 U | 1800 U | 1800 U |
| 2,4,5-Trichlorophenol | 8800 U | 8900 U | 8900 U | 8800 U |
| 2-Chloronaphthalene | 1800 U | 1800 U | 1800 U | 1800 U |
| 2-Nitroaniline | 8800 U | 8900 U | 8900 U | 8800 U |
| Dimethyl Phthalate | 1800 U | 1800 U | 1800 U | 1800 U |
| Acenaphthylene | 1800 U | 1800 U | 1800 U | 1800 U |
| 3-Nitroaniline | 8800 U | 8900 U | 8900 U | 8800 U |
| Acenaphthene | 1800 U | 1800 U | 1800 U | 1800 U |
| 2,4-Dinitrophenol | 8800 U | 8900 U | 8900 U | 8800 U |
| 4-Nitrophenol | 8800 U | 8900 U | 8900 U | 8800 U |
| Dibenzofuran | 1800 U | 1800 U | 1800 U | 1800 U |
| 2,4-Dinitrotoluene | 1800 U | 1800 U | 1800 U | 1800 U |
| 2,6-Dinitrotoluene | 1800 U | 1800 U | 1800 U | 1800 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | #170 CS017 | #176 CS024 | #176 CS025 | #176 CS026 |
|---|---|---|---|---|
| RFW Batch ID | 8810-051-003 | 8810-062-002 | 8810-062-003 | 8810-062-004 |
| Customer ID: | BH88A022 | BH88A024 | BH88A025 | BH88A026 |
| Collection Date: | 10/14/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| **Analytes** | | | | |
| Diethylphthalate | 1800 U | 1800 U | 1800 U | 1800 U |
| 4-Chlorophenyl-phenylether | 1800 U | 1800 U | 1800 U | 1800 U |
| Fluorene | 1800 U | 1800 U | 1800 U | 1800 U |
| 4-Nitroaniline | 8800 U | 8900 U | 8900 U | 8800 U |
| 4,6-Dinitro-2-methylphenol | 8800 U | 8900 U | 8900 U | 8800 U |
| N-Nitrosodiphenylamine | 490 J | 1800 U | 1800 U | 1800 U |
| 4-Bromophenyl-phenylether | 1800 U | 1800 U | 1800 U | 1800 U |
| Hexachlorobenzene | 1800 U | 1800 U | 1800 U | 1800 U |
| Pentachlorophenol | 8800 U | 8900 U | 8900 U | 8800 U |
| Phenanthrene | 1800 U | 1800 U | 1800 U | 1800 U |
| Anthracene | 1800 U | 1800 U | 1800 U | 1800 U |
| di-n-Butyl Phthalate | 810 JB | 1800 U | 1800 U | 1800 U |
| Fluoranthene | 1800 U | 1800 U | 350 J | 1800 U |
| Pyrene | 1800 U | 1800 U | 1800 U | 1800 U |
| Butyl Benzyl Phthalate | 1800 U | 1800 U | 1800 U | 1800 U |
| 3,3'-Dichlorobenzidine | 3500 U | 3500 U | 3600 U | 3500 U |
| Benzo(a)Anthracene | 1800 U | 1800 U | 1800 U | 1800 U |
| bis(2-Ethylhexyl)Phthalate | 1800 U | 1800 U | 1800 U | 1800 U |
| Chrysene | 1800 U | 1800 U | 210 J | 1800 U |
| di-n-Octyl Phthalate | 1800 U | 1800 U | 1800 U | 1800 U |
| Benzo(b)Fluoranthene | 1800 U | 1800 U | 1800 U | 1800 U |
| Benzo(k)Fluoranthene | 1800 U | 1800 U | 1800 U | 1800 U |
| Benzo(a)Pyrene | 1800 U | 1800 U | 1800 U | 1800 U |
| Indeno(1,2,3-cd)Pyrene | 1800 U | 1800 U | 1800 U | 1800 U |
| Dibenz(a,h)Anthracene | 1800 U | 1800 U | 1800 U | 1800 U |
| Benzo(g,h,i)Perylene | 1800 U | 1800 U | 1800 U | 1800 U |
| Benzidine | NR | NR | NR | NR |
| Aniline | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



**Sample Information**

| | | | | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-062-005 | 8810-062-005 MS | 8810-062-005 MSD | 8810-062-006 DUP |
| Customer ID: | BH88A027 | BH88A027 | BH88A027 | BH88A028 |
| Collection Date. | 10/19/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix | Soil | Soil | Soil | Water |
| Units | UG/KG | % RECOVERY | % RECOVERY | UG/L |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 48 % | 63 % | 63 % | 91 % |
| Phenol-d5: | 77 % | 111% | 107% | 110% |
| 2,4,6-Br3-Phenol: | 74 % | 23 % | 25 % | 73 % |
| Nitrobenzene-d5 | 46 % | 57 % | 53 % | 77 % |
| 2-Fluorobiphenyl | 62 % | 57 % | 54 % | 64 % |
| p-Terphenyl-d14 | 53 % | 54 % | 54 % | 90 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol | 1900 U | 85 % | 83 % | 10 U |
| bis(2-Chloroethyl)Ether | 1900 U | 1900 U | 1900 U | 10 U |
| 2-Chlorophenol | 1900 U | 67 % | 68 % | 10 U |
| 1,3-Dichlorobenzene | 1900 U | 1900 U | 1900 U | 10 U |
| 1,4-Dichlorobenzene | 1900 U | 49 % | 52 % | 10 U |
| Benzyl Alcohol | 1900 U | 1900 U | 1900 U | 10 U |
| 1,2-Dichlorobenzene | 1900 U | 1900 U | 1900 U | 10 U |
| 2-Methylphenol | 1900 U | 1900 U | 1900 U | 10 U |
| bis(2-Chloroisopropyl)Ether | 1900 U | 1900 U | 1900 U | 10 U |
| 4-Methylphenol | 1900 U | 1900 U | 1900 U | 10 U |
| N-Nitroso-di-n-propylamine | 1900 U | 80 % | 72 % | 10 U |
| N-Nitroso-di-methylamine | NR | NR | NR | NR |
| Hexachloroethane | 1900 U | 1900 U | 1900 U | 10 U |
| Nitrobenzene | 1900 U | 1900 U | 1900 U | 10 U |
| Isophorone | 1900 U | 1900 U | 1900 U | 10 U |
| 2-Nitrophenol | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4-Dimethylphenol | 1900 U | 1900 U | 1900 U | 10 U |
| Benzoic Acid | 9300 U | 9300 U | 9300 U | 50 U |
| bis(2-Chloroethoxy)Methane | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4-Dichlorophenol | 1900 U | 1900 U | 1900 U | 10 U |
| 1,2,4-Trichlorobenzene | 1900 U | 33 % | 34 % | 10 U |
| Naphthalene | 1900 U | 1900 U | 1900 U | 10 U |
| 4-Chloroaniline | 1900 U | 1900 U | 1900 U | 10 U |
| Hexachlororbutadiene | 1900 U | 1900 U | 1900 U | 10 U |
| 4-Chloro-3-methylphenol | 1900 U | 72 % | 72 % | 10 U |
| 2-Methylnaphthalene | 1900 U | 1900 U | 1900 U | 10 U |
| Hexachlorocyclopentadiene | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4,6-Trichlorophenol | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4,5-Trichlorophenol | 9300 U | 9300 U | 9300 U | 50 U |
| 2-Chloronaphthalene | 1900 U | 1900 U | 1900 U | 10 U |
| 2-Nitroaniline | 9300 U | 9300 U | 9300 U | 50 U |
| Dimethyl Phthalate | 1900 U | 1900 U | 1900 U | 10 U |
| Acenaphthylene | 1900 U | 1900 U | 1900 U | 10 U |
| 3-Nitroaniline | 9300 U | 9300 U | 9300 U | 50 U |
| Acenaphthene | 1900 U | 70 % | 67 % | 10 U |
| 2,4-Dinitrophenol | 9300 U | 9300 U | 9300 U | 50 U |
| 4-Nitrophenol | 9300 U | 76 % | 60 % | 50 U |
| Dibenzofuran | 1900 U | 1900 U | 1900 U | 10 U |
| 2,4-Dinitrotoluene | 1900 U | 75 % | 70 % | 10 U |
| 2,6-Dinitrotoluene | 1900 U | 1900 U | 1900 U | 10 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

Sample Information

| | | | | |
|---|---|---|---|---|
| RFW Batch ID | 8810-062-005 | 8810-062-005 MS | 8810-062-005 MSD | 8810-062-006 DUP |
| Customer ID. | BH88A027 | BH88A027 | BH88A027 | BH88A028 |
| Collection Date: | 10/19/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix: | Soil | Soil | Soil | Water |
| Units. | UG/KG | % RECOVERY | % RECOVERY | UG/L |

Analytes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Diethylphthalate..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| 4-Chlorophenyl-phenylether..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Fluorene..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| 4-Nitroaniline..... | 9300 | U | 9300 | U | 9300 | U | 50 | U |
| 4,6-Dinitro-2-methylphenol..... | 9300 | U | 9300 | U | 9300 | U | 50 | U |
| N-Nitrosodiphenylamine..... | 1900 | U | 710 | J | 1900 | U | 10 | U |
| 4-Bromophenyl-phenylether..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Hexachlorobenzene..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Pentachlorophenol..... | 9300 | U | 29 | % | 27 | % | 50 | U |
| Phenanthrene..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Anthracene..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| di-n-Butyl Phthalate..... . | 1900 | U | 220 | JB | 240 | JB | 10 | U |
| Fluoranthene..... . | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Pyrene ..... . | 1900 | U | 78 | % | 79 | % | 10 | U |
| Butyl Benzyl Phthalate..... . | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| 3,3'-Dichlorobenzidine.. ..... | 3700 | U | 3700 | U | 3700 | U | 20 | U |
| Benzo(a)Anthracene..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| bis(2-Ethylhexyl)Phthalate . . | 310 | J | 1900 | U | 1900 | U | 10 | U |
| Chrysene..... . . | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| di-n-Octyl Phthalate..... .. | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzo(b)Fluoranthene ..... . | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzo(k)Fluoranthene..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzo(a)Pyrene..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Indeno(1,2,3-cd)Pyrene ..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Dibenz(a,h)Anthracene.... ..... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzo(g,h,i)Perylene..... ... | 1900 | U | 1900 | U | 1900 | U | 10 | U |
| Benzidine..... | | NR | | NR | | NR | | NR |

| | | | | |
|---|---|---|---|---|
| Aniline..... .. | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | FB | Sample 027 | Sample 028 | Sample 029 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-062-006 | 8810-062-007 | 8810-062-008 | 8810-062-009 |
| Customer ID. | BH88A028 | BH88A029 | BH88A030 | BH88A031 |
| Collection Date: | 10/19/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix | Water | Soil | Soil | Soil |
| Units. | UG/L | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 88 % | 57 % | 70 % | 60 % |
| Phenol-d5. | 109% | 91 % | 100% | 98 % |
| 2,4,6-Br3-Phenol: | 74 % | 16 % | 126% | 19 % |
| Nitrobenzene-d5: | 95 % | 47 % | 86 % | 50 % |
| 2-Fluorobiphenyl: | 64 % | 48 % | 78 % | 52 % |
| p-Terphenyl-d14 | 99 % | 43 % | 94 % | 44 % |

**Analytes**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| bis(2-Chloroethyl)Ether | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2-Chlorophenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 1,3-Dichlorobenzene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 1,4-Dichlorobenzene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Benzyl Alcohol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 1,2-Dichlorobenzene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2-Methylphenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| bis(2-Chloroisopropyl)Ether | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 4-Methylphenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| N-Nitroso-di-n-propylamine | 10 | U | 1700 | U | 350 | U | 1800 | U |
| N-Nitroso-di-methylamine | | NR | | NR | | NR | | NR |
| Hexachloroethane | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Nitrobenzene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Isophorone | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2-Nitrophenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,4-Dimethylphenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Benzoic Acid | 50 | U | 8700 | U | 1800 | U | 8900 | U |
| bis(2-Chloroethoxy)Methane | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,4-Dichlorophenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 1,2,4-Trichlorobenzene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Naphthalene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 4-Chloroaniline | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Hexachlororbutadiene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 4-Chloro-3-methylphenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2-Methylnaphthalene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Hexachlorocyclopentadiene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,4,6-Trichlorophenol | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,4,5-Trichlorophenol | 50 | U | 8700 | U | 1800 | U | 8900 | U |
| 2-Chloronaphthalene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2-Nitroaniline | 50 | U | 8700 | U | 1800 | U | 8900 | U |
| Dimethyl Phthalate | 10 | U | 1700 | U | 350 | U | 1800 | U |
| Acenaphthylene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 3-Nitroaniline | 50 | U | 8700 | U | 1800 | U | 8900 | U |
| Acenaphthene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,4-Dinitrophenol | 50 | U | 8700 | U | 1800 | U | 8900 | U |
| 4-Nitrophenol | 50 | U | 8700 | U | 160 | J | 8900 | U |
| Dibenzofuran | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,4-Dinitrotoluene | 10 | U | 1700 | U | 350 | U | 1800 | U |
| 2,6-Dinitrotoluene | 10 | U | 1700 | U | 350 | U | 1800 | U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | FB | #176 CS027 | #176 CS032 | #176 CS030 |
|---|---|---|---|---|
| RFW Batch ID. | 8810-062-006 | 8810-062-007 | 8810-062-008 | 8810-062-009 |
| Customer ID. | BH88A028 | BH88A029 | BH88A030 | BH88A031 |
| Collection Date | 10/19/88 | 10/19/88 | 10/19/88 | 10/19/88 |
| Matrix: | Water | Soil | Soil | Soil |
| Units | UG/L | UG/KG | UG/KG | UG/KG |
| **Analytes** | | | | |
| Diethylphthalate | 10 U | 1700 U | 350 U | 1800 U |
| 4-Chlorophenyl-phenylether | 10 U | 1700 U | 350 U | 1800 U |
| Fluorene | 10 U | 1700 U | 350 U | 1800 U |
| 4-Nitroaniline | 50 U | 8700 U | 1800 U | 8900 U |
| 4,6-Dinitro-2-methylphenol | 50 U | 8700 U | 1800 U | 8900 U |
| N-Nitrosodiphenylamine | 10 U | 1700 U | 350 U | 1800 U |
| 4-Bromophenyl-phenylether | 10 U | 1700 U | 350 U | 1800 U |
| Hexachlorobenzene | 10 U | 1700 U | 350 U | 1800 U |
| Pentachlorophenol | 50 U | 8700 U | 110 J | 8900 U |
| Phenanthrene | 10 U | 1700 U | 350 U | 210 J |
| Anthracene | 10 U | 1700 U | 41 J | 1800 U |
| di-n-Butyl Phthalate | 10 U | 1700 U | 350 U | 450 JB |
| Fluoranthene | 10 U | 1700 U | 58 J | 290 J |
| Pyrene | 10 U | 1700 U | 56 J | 370 J |
| Butyl Benzyl Phthalate | 10 U | 1700 U | 350 U | 1800 U |
| 3,3'-Dichlorobenzidine | 20 U | 3500 U | 700 U | 3500 U |
| Benzo(a)Anthracene | 10 U | 1700 U | 350 U | 1800 U |
| bis(2-Ethylhexyl)Phthalate | 10 U | 1700 U | 600 B | 1800 U |
| Chrysene | 10 U | 1700 U | 350 U | 1800 U |
| di-n-Octyl Phthalate | 10 U | 1700 U | 350 U | 1800 U |
| Benzo(b)Fluoranthene | 10 U | 1700 U | 350 U | 1800 U |
| Benzo(k)Fluoranthene | 10 U | 1700 U | 350 U | 1800 U |
| Benzo(a)Pyrene | 10 U | 1700 U | 350 U | 1800 U |
| Indeno(1,2,3-cd)Pyrene | 10 U | 1700 U | 350 U | 1800 U |
| Dibenz(a,h)Anthracene | 10 U | 1700 U | 350 U | 1800 U |
| Benzo(g,h,i)Perylene | 10 U | 1700 U | 350 U | 1800 U |
| Benzidine | NR | NR | NR | NR |
| Aniline | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | | | | |
|---|---|---|---|---|
| | Sump 176 CS031 | Sump 176 CS028 | Sump 176 CS029 | Sump 176 [illegible] |
| RFW Batch ID. | 8810-070-002 | 8810-070-003 | 8810-070-004 | 8810-070-005 |
| Customer ID. | BH88A033 | BH88A034 | BH88A035 | BH88A036 |
| Collection Date: | 10/20/88 | 10/20/88 | 10/20/88 | 10/20/88 |
| Matrix. | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol. | 55 % | 48 % | 47 % | 47 % |
| Phenol-d5 | 46 % | 46 % | 39 % | 38 % |
| 2,4,6-Br3-Phenol: | 72 % | 89 % | 69 % | 73 % |
| Nitrobenzene-d5: | 36 % | 32 % | 30 % | 31 % |
| 2-Fluorobiphenyl: | 52 % | 53 % | 43 % | 44 % |
| p-Terphenyl-d14: | 65 % | 66 % | 54 % | 52 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol | 340 U | 330 U | 340 U | 330 U |
| bis(2-Chloroethyl)Ether | 340 U | 330 U | 340 U | 330 U |
| 2-Chlorophenol | 340 U | 330 U | 340 U | 330 U |
| 1,3-Dichlorobenzene | 340 U | 330 U | 340 U | 330 U |
| 1,4-Dichlorobenzene | 340 U | 330 U | 340 U | 330 U |
| Benzyl Alcohol | 340 U | 330 U | 340 U | 330 U |
| 1,2-Dichlorobenzene | 340 U | 330 U | 340 U | 330 U |
| 2-Methylphenol | 340 U | 330 U | 340 U | 330 U |
| bis(2-Chloroisopropyl)Ether. | 340 U | 330 U | 340 U | 330 U |
| 4-Methylphenol | 340 U | 330 U | 340 U | 330 U |
| N-Nitroso-di-n-propylamine | 340 U | 330 U | 340 U | 330 U |
| N-Nitroso-di-methylamine | NR | NR | NR | NR |
| Hexachloroethane | 340 U | 330 U | 340 U | 330 U |
| Nitrobenzene | 340 U | 330 U | 340 U | 330 U |
| Isophorone | 340 U | 330 U | 340 U | 330 U |
| 2-Nitrophenol | 340 U | 330 U | 340 U | 330 U |
| 2,4-Dimethylphenol | 340 U | 330 U | 340 U | 330 U |
| Benzoic Acid | 1700 U | 1700 U | 1700 U | 1600 U |
| bis(2-Chloroethoxy)Methane | 340 U | 330 U | 340 U | 330 U |
| 2,4-Dichlorophenol | 340 U | 330 U | 340 U | 330 U |
| 1,2,4-Trichlorobenzene | 340 U | 330 U | 340 U | 330 U |
| Naphthalene | 340 U | 330 U | 340 U | 330 U |
| 4-Chloroaniline | 340 U | 330 U | 340 U | 330 U |
| Hexachlororbutadiene | 340 U | 330 U | 340 U | 330 U |
| 4-Chloro-3-methylphenol | 340 U | 330 U | 340 U | 330 U |
| 2-Methylnaphthalene | 340 U | 330 U | 340 U | 330 U |
| Hexachlorocyclopentadiene | 340 U | 330 U | 340 U | 330 U |
| 2,4,6-Trichlorophenol | 340 U | 330 U | 340 U | 330 U |
| 2,4,5-Trichlorophenol | 1700 U | 1700 U | 1700 U | 1600 U |
| 2-Chloronaphthalene | 340 U | 330 U | 340 U | 330 U |
| 2-Nitroaniline | 1700 U | 1700 U | 1700 U | 1600 U |
| Dimethyl Phthalate | 340 U | 330 U | 340 U | 330 U |
| Acenaphthylene | 340 U | 330 U | 340 U | 330 U |
| 3-Nitroaniline | 1700 U | 1700 U | 1700 U | 1600 U |
| Acenaphthene | 340 U | 330 U | 340 U | 330 U |
| 2,4-Dinitrophenol | 1700 U | 1700 U | 1700 U | 1600 U |
| 4-Nitrophenol | 1700 U | 1700 U | 1700 U | 1600 U |
| Dibenzofuran | 340 U | 330 U | 340 U | 330 U |
| 2,4-Dinitrotoluene | 340 U | 330 U | 340 U | 330 U |
| 2,6-Dinitrotoluene | 340 U | 330 U | 340 U | 330 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | # 176 CS031 | # 176 CS028 | # 176 CS029 | # 176 CS033 |
|---|---|---|---|---|
| RFW Batch ID: | 8810-070-002 | 8810-070-003 | 8810-070-004 | 8810-070-005 |
| Customer ID: | BH88A033 | BH88A034 | BH88A035 | BH88A036 |
| Collection Date: | 10/20/88 | 10/20/88 | 10/20/88 | 10/20/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units. | UG/KG | UG/KG | UG/KG | UG/KG |
| **Analytes** | | | | |
| Diethylphthalate..... | 340 U | 330 U | 340 U | 330 U |
| 4-Chlorophenyl-phenylether..... | 340 U | 330 U | 340 U | 330 U |
| Fluorene..... | 340 U | 330 U | 340 U | 330 U |
| 4-Nitroaniline..... | 1700 U | 1700 U | 1700 U | 1600 U |
| 4,6-Dinitro-2-methylphenol..... | 1700 U | 1700 U | 1700 U | 1600 U |
| N-Nitrosodiphenylamine..... | 340 U | 330 U | 340 U | 330 U |
| 4-Bromophenyl-phenylether... .. | 340 U | 330 U | 340 U | 330 U |
| Hexachlorobenzene..... | 340 U | 330 U | 340 U | 330 U |
| Pentachlorophenol..... | 1700 U | 1700 U | 1700 U | 1600 U |
| Phenanthrene..... | 340 U | 330 U | 76 J | 49 J |
| Anthracene..... | 340 U | 330 U | 340 U | 330 U |
| di-n-Butyl Phthalate..... | 340 U | 330 U | 340 U | 330 U |
| Fluoranthene..... | 340 U | 46 J | 120 J | 82 J |
| Pyrene..... | 340 U | 43 J | 100 J | 77 J |
| Butyl Benzyl Phthalate..... | 340 U | 330 U | 340 U | 330 U |
| 3,3'-Dichlorobenzidine..... | 680 U | 670 U | 690 U | 660 U |
| Benzo(a)Anthracene..... | 340 U | 330 U | 53 J | 37 J |
| bis(2-Ethylhexyl)Phthalate..... | 130 JB | 130 JB | 110 JB | 110 JB |
| Chrysene..... | 340 U | 330 U | 61 J | 42 J |
| di-n-Octyl Phthalate..... | 340 U | 330 U | 340 U | 330 U |
| Benzo(b)Fluoranthene..... | 340 U | 330 U | 51 J | 28 J |
| Benzo(k)Fluoranthene..... | 340 U | 330 U | 53 J | 52 J |
| Benzo(a)Pyrene..... | 340 U | 330 U | 57 J | 40 J |
| Indeno(1,2,3-cd)Pyrene..... | 340 U | 330 U | 340 U | 330 U |
| Dibenz(a,h)Anthracene..... | 340 U | 330 U | 340 U | 330 U |
| Benzo(g,h,i)Perylene..... | 340 U | 330 U | 340 U | 330 U |
| Benzidine..... | NR | NR | NR | NR |
| Aniline..... | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | | | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-070-006 | 8810-070-007 | 8810-070-008 | 8810-070-009 |
| Customer ID: | BH88A037 | BH88A038 | BH88A039 | BH88A040 |
| Collection Date: | 10/20/88 | 10/20/88 | 10/20/88 | 10/20/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 54 % | 56 % | 47 % | 61 % |
| Phenol-d5: | 47 % | 45 % | 38 % | 51 % |
| 2,4,6-Br3-Phenol: | 70 % | 73 % | 72 % | 95 % |
| Nitrobenzene-d5: | 39 % | 36 % | 30 % | 39 % |
| 2-Fluorobiphenyl: | 55 % | 54 % | 45 % | 58 % |
| p-Terphenyl-d14: | 69 % | 61 % | 61 % | 79 % |

**Analytes**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Phenol | 360 | U | 340 | U | 340 | U | 340 | U |
| bis(2-Chloroethyl)Ether | 360 | U | 340 | U | 340 | U | 340 | U |
| 2-Chlorophenol | 360 | U | 340 | U | 340 | U | 340 | U |
| 1,3-Dichlorobenzene | 360 | U | 340 | U | 340 | U | 340 | U |
| 1,4-Dichlorobenzene | 360 | U | 340 | U | 340 | U | 340 | U |
| Benzyl Alcohol | 360 | U | 340 | U | 340 | U | 340 | U |
| 1,2-Dichlorobenzene | 360 | U | 340 | U | 340 | U | 340 | U |
| 2-Methylphenol | 360 | U | 340 | U | 340 | U | 340 | U |
| bis(2-Chloroisopropyl)Ether | 360 | U | 340 | U | 340 | U | 340 | U |
| 4-Methylphenol | 360 | U | 340 | U | 340 | U | 340 | U |
| N-Nitroso-di-n-propylamine | 360 | U | 340 | U | 340 | U | 340 | U |
| N-Nitroso-di-methylamine | | NR | | NR | | NR | | NR |
| Hexachloroethane | 360 | U | 340 | U | 340 | U | 340 | U |
| Nitrobenzene | 360 | U | 340 | U | 340 | U | 340 | U |
| Isophorone | 360 | U | 340 | U | 340 | U | 340 | U |
| 2-Nitrophenol | 360 | U | 340 | U | 340 | U | 340 | U |
| 2,4-Dimethylphenol | 360 | U | 340 | U | 340 | U | 340 | U |
| Benzoic Acid | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| bis(2-Chloroethoxy)Methane | 360 | U | 340 | U | 340 | U | 340 | U |
| 2,4-Dichlorophenol | 360 | U | 340 | U | 340 | U | 340 | U |
| 1,2,4-Trichlorobenzene | 360 | U | 340 | U | 340 | U | 340 | U |
| Naphthalene | 360 | U | 340 | U | 340 | U | 340 | U |
| 4-Chloroaniline | 360 | U | 340 | U | 340 | U | 340 | U |
| Hexachlorobutadiene | 360 | U | 340 | U | 340 | U | 340 | U |
| 4-Chloro-3-methylphenol | 360 | U | 340 | U | 340 | U | 340 | U |
| 2-Methylnaphthalene | 360 | U | 340 | U | 340 | U | 340 | U |
| Hexachlorocyclopentadiene | 360 | U | 340 | U | 340 | U | 340 | U |
| 2,4,6-Trichlorophenol | 360 | U | 340 | U | 340 | U | 340 | U |
| 2,4,5-Trichlorophenol | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| 2-Chloronaphthalene | 360 | U | 340 | U | 340 | U | 340 | U |
| 2-Nitroaniline | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| Dimethyl Phthalate | 360 | U | 340 | U | 340 | U | 340 | U |
| Acenaphthylene | 360 | U | 340 | U | 340 | U | 340 | U |
| 3-Nitroaniline | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| Acenaphthene | 360 | U | 340 | U | 340 | U | 340 | U |
| 2,4-Dinitrophenol | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| 4-Nitrophenol | 1800 | U | 1700 | U | 1700 | U | 1700 | U |
| Dibenzofuran | 360 | U | 340 | U | 340 | U | 340 | U |
| 2,4-Dinitrotoluene | 360 | U | 340 | U | 340 | U | 340 | U |
| 2,6-Dinitrotoluene | 360 | U | 340 | U | 340 | U | 340 | U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



| Sample Information | # 175 CS018 | # 175 CS019 | # 175 CS021 | — |
|---|---|---|---|---|
| RFW Batch ID: | 8810-070-006 | 8810-070-007 | 8810-070-008 | 8810-070-009 |
| Customer ID | BH88A037 | BH88A038 | BH88A039 | BH88A040 |
| Collection Date: | 10/20/88 | 10/20/88 | 10/20/88 | 10/20/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | UG/KG | UG/KG |
| **Analytes** | | | | |
| Diethylphthalate | 360 U | 340 U | 340 U | 340 U |
| 4-Chlorophenyl-phenylether | 360 U | 340 U | 340 U | 340 U |
| Fluorene | 360 U | 340 U | 340 U | 340 U |
| 4-Nitroaniline | 1800 U | 1700 U | 1700 U | 1700 U |
| 4,6-Dinitro-2-methylphenol | 1800 U | 1700 U | 1700 U | 1700 U |
| N-Nitrosodiphenylamine | 360 U | 340 U | 340 U | 340 U |
| 4-Bromophenyl-phenylether | 360 U | 340 U | 340 U | 340 U |
| Hexachlorobenzene | 360 U | 340 U | 340 U | 340 U |
| Pentachlorophenol | 1800 U | 1700 U | 1700 U | 1700 U |
| Phenanthrene | 360 U | 340 U | 40 J | 200 J |
| Anthracene | 360 U | 340 U | 340 U | 35 J |
| di-n-Butyl Phthalate | 360 U | 340 U | 340 U | 340 U |
| Fluoranthene | 360 U | 340 U | 83 J | 260 J |
| Pyrene | 360 U | 340 U | 81 J | 260 J |
| Butyl Benzyl Phthalate | 360 U | 340 U | 340 U | 340 U |
| 3,3'-Dichlorobenzidine | 720 U | 670 U | 680 U | 690 U |
| Benzo(a)Anthracene | 360 U | 340 U | 340 U | 120 J |
| bis(2-Ethylhexyl)Phthalate | 180 JB | 190 JB | 370 B | 360 B |
| Chrysene | 360 U | 340 U | 340 U | 130 J |
| di-n-Octyl Phthalate | 360 U | 340 U | 340 U | 340 U |
| Benzo(b)Fluoranthene | 360 U | 340 U | 340 U | 130 J |
| Benzo(k)Fluoranthene | 360 U | 340 U | 340 U | 120 J |
| Benzo(a)Pyrene | 360 U | 340 U | 340 U | 140 J |
| Indeno(1,2,3-cd)Pyrene | 360 U | 340 U | 340 U | 340 U |
| Dibenz(a,h)Anthracene | 360 U | 340 U | 340 U | 340 U |
| Benzo(g,h,i)Perylene | 360 U | 340 U | 340 U | 340 U |
| Benzidine | NR | NR | NR | NR |
| Aniline | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

**Sample Information**

| RFW Batch ID: | 8810-070-009 MS | 8810-070-009 MSD | FB 8810-070-010 | 8810-070-010 MS |
|---|---|---|---|---|
| Customer ID. | BH88A040 | BH88A040 | BH88A041 | BH88A041 |
| Collection Date. | 10/20/88 | 10/20/88 | 10/20/88 | 10/20/88 |
| Matrix. | Soil | Soil | Water | Water |
| Units. | UG/KG | UG/KG | UG/L | UG/L |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 48 % | 58 % | 47 % | 41 % |
| Phenol-d5. | 38 % | 48 % | 28 % | 30 % |
| 2,4,6-Br3-Phenol: | 71 % | 80 % | 63 % | 53 % |
| Nitrobenzene-d5. | 33 % | 40 % | 42 % | 43 % |
| 2-Fluorobiphenyl· | 47 % | 57 % | 52 % | 57 % |
| p-Terphenyl-d14 | 59 % | 73 % | 63 % | 72 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol | 35 % | 46 % | 10 U | 26 % |
| bis(2-Chloroethyl)Ether | 340 U | 340 U | 10 U | 10 U |
| 2-Chlorophenol | 37 % | 47 % | 10 U | 31 % |
| 1,3-Dichlorobenzene | 340 U | 340 U | 10 U | 10 U |
| 1,4-Dichlorobenzene | 35 % | 45 % | 10 U | 36 % |
| Benzyl Alcohol | 340 U | 340 U | 10 U | 10 U |
| 1,2-Dichlorobenzene | 340 U | 340 U | 10 U | 10 U |
| 2-Methylphenol | 340 U | 340 U | 10 U | 10 U |
| bis(2-Chloroisopropyl)Ether | 340 U | 340 U | 10 U | 10 U |
| 4-Methylphenol | 340 U | 340 U | 10 U | 10 U |
| N-Nitroso-di-n-propylamine | 44 % | 58 % | 10 U | 46 % |
| N-Nitroso-di-methylamine | NR | NR | NR | NR |
| Hexachloroethane | 340 U | 340 U | 10 U | 10 U |
| Nitrobenzene | 340 U | 340 U | 10 U | 10 U |
| Isophorone | 340 U | 340 U | 10 U | 10 U |
| 2-Nitrophenol | 340 U | 340 U | 10 U | 10 U |
| 2,4-Dimethylphenol | 340 U | 340 U | 10 U | 10 U |
| Benzoic Acid | 1700 U | 1700 U | 50 U | 50 U |
| bis(2-Chloroethoxy)Methane | 340 U | 340 U | 10 U | 10 U |
| 2,4-Dichlorophenol | 340 U | 340 U | 10 U | 10 U |
| 1,2,4-Trichlorobenzene | 39 % | 50 % | 10 U | 39 % |
| Naphthalene | 340 U | 340 U | 10 U | 10 U |
| 4-Chloroaniline | 340 U | 340 U | 10 U | 10 U |
| Hexachlororbutadiene | 340 U | 340 U | 10 U | 10 U |
| 4-Chloro-3-methylphenol | 38 % | 49 % | 10 U | 37 % |
| 2-Methylnaphthalene | 340 U | 340 U | 10 U | 10 U |
| Hexachlorocyclopentadiene | 340 U | 340 U | 10 U | 10 U |
| 2,4,6-Trichlorophenol | 340 U | 340 U | 10 U | 10 U |
| 2,4,5-Trichlorophenol | 1700 U | 1700 U | 50 U | 50 U |
| 2-Chloronaphthalene | 340 U | 340 U | 10 U | 10 U |
| 2-Nitroaniline | 1700 U | 1700 U | 50 U | 50 U |
| Dimethyl Phthalate | 340 U | 340 U | 10 U | 10 U |
| Acenaphthylene | 340 U | 340 U | 10 U | 10 U |
| 3-Nitroaniline | 1700 U | 1700 U | 50 U | 50 U |
| Acenaphthene | 42 % | 53 % | 10 U | 55 % |
| 2,4-Dinitrophenol | 1700 U | 1700 U | 50 U | 50 U |
| 4-Nitrophenol | 39 % | 51 % | 50 U | 21 % |
| Dibenzofuran | 340 U | 340 U | 10 U | 10 U |
| 2,4-Dinitrotoluene | 38 % | 51 % | 10 U | 41 % |
| 2,6-Dinitrotoluene | 340 U | 340 U | 10 U | 10 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS



Sample Information

| RFW Batch ID: | 8810-070-009 MS | 8810-070-009 MSD | 8810-070-010 FB | 8810-070-010 MS FB |
|---|---|---|---|---|
| Customer ID: | BH88A040 | BH88A040 | BH88A041 | BH88A041 |
| Collection Date: | 10/20/88 | 10/20/88 | 10/20/88 | 10/20/88 |
| Matrix: | Soil | Soil | Water | Water |
| Units | UG/KG | UG/KG | UG/L | UG/L |

Analytes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Diethylphthalate | 340 | U | 340 | U | 10 | U | 10 | U |
| 4-Chlorophenyl-phenylether | 340 | U | 340 | U | 10 | U | 10 | U |
| Fluorene | 340 | U | 340 | U | 10 | U | 10 | U |
| 4-Nitroaniline | 1700 | U | 1700 | U | 50 | U | 50 | U |
| 4,6-Dinitro-2-methylphenol | 1700 | U | 1700 | U | 50 | U | 50 | U |
| N-Nitrosodiphenylamine | 340 | U | 340 | U | 10 | U | 10 | U |
| 4-Bromophenyl-phenylether | 340 | U | 340 | U | 10 | U | 10 | U |
| Hexachlorobenzene | 340 | U | 340 | U | 10 | U | 10 | U |
| Pentachlorophenol | 8 | % | 12 | % | 50 | U | 37 | % |
| Phenanthrene | 38 | J | 50 | J | 10 | U | 10 | U |
| Anthracene | 6 | J | 8 | J | 10 | U | 10 | U |
| di-n-Butyl Phthalate | 340 | U | 340 | U | 10 | U | 10 | U |
| Fluoranthene | 63 | J | 97 | J | 10 | U | 10 | U |
| Pyrene | 43 | % | 58 | % | 10 | U | 67 | % |
| Butyl Benzyl Phthalate | 340 | U | 340 | U | 10 | U | 10 | U |
| 3,3'-Dichlorobenzidine | 690 | U | 680 | U | 20 | U | 20 | U |
| Benzo(a)Anthracene | 26 | J | 41 | J | 10 | U | 10 | U |
| bis(2-Ethylhexyl)Phthalate | 260 | JB | 380 | B | 4 | JB | 6 | JB |
| Chrysene | 40 | J | 57 | J | 10 | U | 10 | U |
| di-n-Octyl Phthalate | 340 | U | 340 | U | 10 | U | 10 | U |
| Benzo(b)Fluoranthene | 30 | J | 65 | J | 10 | U | 10 | U |
| Benzo(k)Fluoranthene | 42 | J | 42 | J | 10 | U | 10 | U |
| Benzo(a)Pyrene | 39 | J | 56 | J | 10 | U | 10 | U |
| Indeno(1,2,3-cd)Pyrene | 340 | U | 340 | U | 10 | U | 10 | U |
| Dibenz(a,h)Anthracene | 340 | U | 340 | U | 10 | U | 10 | U |
| Benzo(g,h,i)Perylene | 340 | U | 340 | U | 10 | U | 10 | U |
| Benzidine | | NR | | NR | | NR | | NR |

| | | | | |
|---|---|---|---|---|
| Aniline | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | FB | Swmr 25 CS020 | Mat / Spike | MS / Dup MC |
|---|---|---|---|---|
| RFW Batch ID: | 8810-070-010 MSD | 8810-070-011 | 8810-070-011 MS | 8810-070-011 MSD |
| Customer ID. | BH88A041 | BH88A042 | BH88A042 | BH88A042 |
| Collection Date· | 10/20/88 | 10/21/88 | 10/21/88 | 10/21/88 |
| Matrix: | Water | Soil | Soil | Soil |
| Units: | UG/L | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 60 % | 42 % | 46 % | 36 % |
| Phenol-d5. | 41 % | 36 % | 39 % | 40 % |
| 2,4,6-Br3-Phenol. | 71 % | 97 % | 113% | 88 % |
| Nitrobenzene-d5. | 41 % | 30 % | 35 % | 30 % |
| 2-Fluorobiphenyl: | 57 % | 47 % | 49 % | 58 % |
| p-Terphenyl-d14· | 72 % | 62 % | 58 % | 74 % |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol..... | 39 % | 350 U | 34 % | 35 % |
| bis(2-Chloroethyl)Ether..... .. | 10 U | 350 U | 350 U | 350 U |
| 2-Chlorophenol..... . | 48 % | 350 U | 34 % | 31 % |
| 1,3-Dichlorobenzene..... | 10 U | 350 U | 350 U | 350 U |
| 1,4-Dichlorobenzene..... | 35 % | 350 U | 33 % | 18 % |
| Benzyl Alcohol..... . | 10 U | 350 U | 350 U | 350 U |
| 1,2-Dichlorobenzene..... | 10 U | 350 U | 350 U | 350 U |
| 2-Methylphenol..... | 10 U | 350 U | 350 U | 350 U |
| bis(2-Chloroisopropyl)Ether.... | 10 U | 350 U | 350 U | 350 U |
| 4-Methylphenol..... | 10 U | 350 U | 350 U | 350 U |
| N-Nitroso-di-n-propylamine..... | 52 % | 350 U | 44 % | 42 % |
| N-Nitroso-di-methylamine..... | NR | NR | NR | NR |
| Hexachloroethane..... | 10 U | 350 U | 350 U | 350 U |
| Nitrobenzene..... | 10 U | 350 U | 350 U | 350 U |
| Isophorone..... | 10 U | 350 U | 350 U | 350 U |
| 2-Nitrophenol..... | 10 U | 350 U | 350 U | 350 U |
| 2,4-Dimethylphenol..... | 10 U | 350 U | 350 U | 350 U |
| Benzoic Acid..... | 50 U | 1700 U | 1700 U | 1700 U |
| bis(2-Chloroethoxy)Methane..... | 10 U | 350 U | 350 U | 350 U |
| 2,4-Dichlorophenol..... | 10 U | 350 U | 350 U | 350 U |
| 1,2,4-Trichlorobenzene..... . | 41 % | 350 U | 39 % | 34 % |
| Naphthalene..... | 10 U | 350 U | 350 U | 350 U |
| 4-Chloroaniline..... . | 10 U | 350 U | 350 U | 350 U |
| Hexachlororbutadiene..... . | 10 U | 350 U | 350 U | 350 U |
| 4-Chloro-3-methylphenol..... | 53 % | 350 U | 39 % | 51 % |
| 2-Methylnaphthalene..... | 10 U | 350 U | 350 U | 350 U |
| Hexachlorocyclopentadiene..... | 10 U | 350 U | 350 U | 350 U |
| 2,4,6-Trichlorophenol..... | 10 U | 350 U | 350 U | 350 U |
| 2,4,5-Trichlorophenol..... | 50 U | 1700 U | 1700 U | 1700 U |
| 2-Chloronaphthalene..... | 10 U | 350 U | 350 U | 350 U |
| 2-Nitroaniline..... | 50 U | 1700 U | 1700 U | 1700 U |
| Dimethyl Phthalate..... | 10 U | 350 U | 350 U | 350 U |
| Acenaphthylene..... | 10 U | 350 U | 350 U | 350 U |
| 3-Nitroaniline..... | 50 U | 1700 U | 1700 U | 1700 U |
| Acenaphthene..... | 56 % | 350 U | 48 % | 58 % |
| 2,4-Dinitrophenol..... | 50 U | 1700 U | 1700 U | 1700 U |
| 4-Nitrophenol..... | 35 % | 1700 U | 34 % | 45 % |
| Dibenzofuran..... | 10 U | 350 U | 350 U | 350 U |
| 2,4-Dinitrotoluene..... | 52 % | 350 U | 42 % | 52 % |
| 2,6-Dinitrotoluene..... | 10 U | 350 U | 350 U | 350 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

Sample Information

| | | | | |
|---|---|---|---|---|
| | FB | #175 CS020 | | |
| RFW Batch ID: | 8810-070-010 MSD | 8810-070-011 | 8810-070-011 MS | 8810-070-011 MSD |
| Customer ID. | BH88A041 | BH88A042 | BH88A042 | BH88A042 |
| Collection Date: | 10/20/88 | 10/21/88 | 10/21/88 | 10/21/88 |
| Matrix: | Water | Soil | Soil | Soil |
| Units: | UG/L | UG/KG | UG/KG | UG/KG |

Analytes

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Diethylphthalate..... | 10 | U | 350 | U | 350 | U | 350 | U |
| 4-Chlorophenyl-phenylether..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Fluorene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| 4-Nitroaniline..... | 50 | U | 1700 | U | 1700 | U | 1700 | U |
| 4,6-Dinitro-2-methylphenol..... | 50 | U | 1700 | U | 1700 | U | 1700 | U |
| N-Nitrosodiphenylamine..... | 10 | U | 350 | U | 350 | U | 350 | U |
| 4-Bromophenyl-phenylether..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Hexachlorobenzene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Pentachlorophenol..... | 56 | % | 1700 | U | 28 | % | 42 | % |
| Phenanthrene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Anthracene..... . | 10 | U | 350 | U | 350 | U | 350 | U |
| di-n-Butyl Phthalate..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Fluoranthene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Pyrene..... | 65 | % | 350 | U | 58 | % | 72 | % |
| Butyl Benzyl Phthalate..... | 10 | U | 350 | U | 350 | U | 350 | U |
| 3,3'-Dichlorobenzidine..... | 20 | U | 690 | U | 700 | U | 700 | U |
| Benzo(a)Anthracene.. ..... | 10 | U | 350 | U | 350 | U | 350 | U |
| bis(2-Ethylhexyl)Phthalate... | 6 | JB | 120 | JB | 130 | JB | 150 | JB |
| Chrysene..... . | 10 | U | 350 | U | 350 | U | 350 | U |
| di-n-Octyl Phthalate..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Benzo(b)Fluoranthene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Benzo(k)Fluoranthene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Benzo(a)Pyrene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Indeno(1,2,3-cd)Pyrene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Dibenz(a,h)Anthracene..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Benzo(g,h,i)Perylene ..... | 10 | U | 350 | U | 350 | U | 350 | U |
| Benzidine..... | NR | | NR | | NR | | NR | |

| | | | | |
|---|---|---|---|---|
| Aniline..... | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

**Sample Information**

| | | | | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-093-002 | 8810-093-003 | 8810-093-003 MS | 8810-093-003 MSD |
| Customer ID. | BH88A044 | BH88A045 | BH88A045 | BH88A045 |
| Collection Date: | 10/25/88 | 10/25/88 | 10/25/88 | 10/25/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units: | UG/KG | UG/KG | % RECOVERY | % RECOVERY |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 108% | 116% | 93 % | 98 % |
| Phenol-d5: | 105% | 118% | 120% | 119% |
| 2,4,6-Br3-Phenol | 88 % | 86 % | 102% | 89 % |
| Nitrobenzene-d5: | 85 % | 91 % | 77 % | 81 % |
| 2-Fluorobiphenyl | 101% | 105% | 96 % | 99 % |
| p-Terphenyl-d14 | 128% | 126% | 113% | 113% |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol | 2100 U | 2000 U | 93 % | 92 % |
| bis(2-Chloroethyl)Ether | 2100 U | 2000 U | 2000 U | 2000 U |
| 2-Chlorophenol | 2100 U | 2000 U | 99 % | 102 % |
| 1,3-Dichlorobenzene | 2100 U | 2000 U | 2000 U | 2000 U |
| 1,4-Dichlorobenzene | 2100 U | 2000 U | 71 % | 80 % |
| Benzyl Alcohol | 2100 U | 2000 U | 2000 U | 2000 U |
| 1,2-Dichlorobenzene | 2100 U | 2000 U | 2000 U | 2000 U |
| 2-Methylphenol | 2100 U | 2000 U | 2000 U | 2000 U |
| bis(2-Chloroisopropyl)Ether | 2100 U | 2000 U | 2000 U | 2000 U |
| 4-Methylphenol | 2100 U | 2000 U | 2000 U | 2000 U |
| N-Nitroso-di-n-propylamine | 2100 U | 2000 U | 79 % | 74 % |
| N-Nitroso-di-methylamine | NR | NR | NR | NR |
| Hexachloroethane | 2100 U | 2000 U | 2000 U | 2000 U |
| Nitrobenzene | 2100 U | 2000 U | 2000 U | 2000 U |
| Isophorone | 2100 U | 2000 U | 2000 U | 2000 U |
| 2-Nitrophenol | 2100 U | 2000 U | 2000 U | 2000 U |
| 2,4-Dimethylphenol | 2100 U | 2000 U | 2000 U | 2000 U |
| Benzoic Acid | 10000 U | 10000 U | 10000 U | 10000 U |
| bis(2-Chloroethoxy)Methane | 2100 U | 2000 U | 2000 U | 2000 U |
| 2,4-Dichlorophenol | 2100 U | 2000 U | 2000 U | 2000 U |
| 1,2,4-Trichlorobenzene | 2100 U | 2000 U | 89 % | 92 % |
| Naphthalene | 2100 U | 2000 U | 2000 U | 2000 U |
| 4-Chloroaniline | 2100 U | 2000 U | 2000 U | 2000 U |
| Hexachlorobutadiene | 2100 U | 2000 U | 2000 U | 2000 U |
| 4-Chloro-3-methylphenol | 2100 U | 2000 U | 87 % | 79 % |
| 2-Methylnaphthalene | 2100 U | 2000 U | 2000 U | 2000 U |
| Hexachlorocyclopentadiene | 2100 U | 2000 U | 2000 U | 2000 U |
| 2,4,6-Trichlorophenol | 2100 U | 2000 U | 2000 U | 2000 U |
| 2,4,5-Trichlorophenol | 10000 U | 10000 U | 10000 U | 10000 U |
| 2-Chloronaphthalene | 2100 U | 2000 U | 2000 U | 2000 U |
| 2-Nitroaniline | 10000 U | 10000 U | 10000 U | 10000 U |
| Dimethyl Phthalate | 2100 U | 2000 U | 2000 U | 2000 U |
| Acenaphthylene | 2100 U | 2000 U | 2000 U | 2000 U |
| 3-Nitroaniline | 10000 U | 10000 U | 10000 U | 10000 U |
| Acenaphthene | 2100 U | 2000 U | 99 % | 98 % |
| 2,4-Dinitrophenol | 10000 U | 10000 U | 10000 U | 10000 U |
| 4-Nitrophenol | 10000 U | 10000 U | 71 % | 26 % |
| Dibenzofuran | 2100 U | 2000 U | 2000 U | 2000 U |
| 2,4-Dinitrotoluene | 2100 U | 2000 U | 123 % | 116 % |
| 2,6-Dinitrotoluene | 2100 U | 2000 U | 2000 U | 2000 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) 

| Sample Information | #177 CS034 | #177 CS035 | | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-093-002 | 8810-093-003 | 8810-093-003 MS | 8810-093-003 MSD |
| Customer ID: | BH88A044 | BH88A045 | BH88A045 | BH88A045 |
| Collection Date. | 10/25/88 | 10/25/88 | 10/25/88 | 10/25/88 |
| Matrix | Soil | Soil | Soil | Soil |
| Units | UG/KG | UG/KG | % RECOVERY | % RECOVERY |
| **Analytes** | | | | |
| Diethylphthalate | 2100 U | 2000 U | 2000 U | 2000 U |
| 4-Chlorophenyl-phenylether | 2100 U | 2000 U | 2000 U | 2000 U |
| Fluorene | 2100 U | 2000 U | 2000 U | 2000 U |
| 4-Nitroaniline | 10000 U | 10000 U | 10000 U | 10000 U |
| 4,6-Dinitro-2-methylphenol | 10000 U | 10000 U | 10000 U | 10000 U |
| N-Nitrosodiphenylamine | 2100 U | 2000 U | 2000 U | 2000 U |
| 4-Bromophenyl-phenylether | 2100 U | 2000 U | 2000 U | 2000 U |
| Hexachlorobenzene | 2100 U | 2000 U | 2000 U | 2000 U |
| Pentachlorophenol | 10000 U | 10000 U | 50 % | 49 % |
| Phenanthrene | 2100 U | 770 J | 2000 U | 2000 U |
| Anthracene | 2100 U | 250 J | 2000 U | 2000 U |
| di-n-Butyl Phthalate | 2100 U | 2000 U | 2000 U | 2000 U |
| Fluoranthene | 2100 U | 930 J | 2000 U | 2000 U |
| Pyrene | 240 J | 1100 J | 95 % | 91 % |
| Butyl Benzyl Phthalate | 2100 U | 2000 U | 2000 U | 2000 U |
| 3,3'-Dichlorobenzidine | 4100 U | 4000 U | 4000 U | 4000 U |
| Benzo(a)Anthracene | 2100 U | 2000 U | 2000 U | 2000 U |
| bis(2-Ethylhexyl)Phthalate | 2000 JB | 1200 JB | 1300 JB | 1400 JB |
| Chrysene | 2100 U | 550 J | 2000 U | 2000 U |
| di-n-Octyl Phthalate | 2100 U | 2000 U | 2000 U | 2000 U |
| Benzo(b)Fluoranthene | 2100 U | 290 J | 2000 U | 2000 U |
| Benzo(k)Fluoranthene | 2100 U | 400 J | 2000 U | 2000 U |
| Benzo(a)Pyrene | 2100 U | 470 J | 2000 U | 2000 U |
| Indeno(1,2,3-cd)Pyrene | 2100 U | 270 J | 2000 U | 2000 U |
| Dibenz(a,h)Anthracene | 2100 U | 2000 U | 2000 U | 2000 U |
| Benzo(g,h,i)Perylene | 2100 U | 340 J | 2000 U | 2000 U |
| Benzidine | NR | NR | NR | NR |
| Aniline | NR | NR | NR | NR |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client ROCKWELL (ROCKY FLATS) 

| Sample Information | SWMU 177 CS036 | SWMU 177 CS037 | 182 CS022 | |
|---|---|---|---|---|
| RFW Batch ID. | 8810-093-004 | 8810-093-005 | 8810-108-001 | 8810-108-002 |
| Customer ID. | BH88A046 | BH88A047 | BH88A048 | BH88A049 |
| Collection Date: | 10/25/88 | 10/25/88 | 10/27/88 | 10/27/88 |
| Matrix: | Soil | Soil | Soil | Soil |
| Units. | UG/KG | UG/KG | UG/KG | UG/KG |

**Surrogate Recovery**

| | | | | |
|---|---|---|---|---|
| 2-Fluorophenol: | 96 % | 93 % | 0 % | 76 % |
| Phenol-d5: | 98 % | 95 % | 0 % | 108% |
| 2,4,6-Br3-Phenol: | 85 % | 89 % | 0 % | 92 % |
| Nitrobenzene-d5: | 69 % | 72 % | 0 % | 60 % |
| 2-Fluorobiphenyl: | 91 % | 93 % | 0 % | 75 % |
| p-Terphenyl-d14: | 134% | 120% | 0 % | 100% |

**Analytes**

| | | | | |
|---|---|---|---|---|
| Phenol | 1900 U | 2100 U | 37000 U | 1800 U |
| bis(2-Chloroethyl)Ether | 1900 U | 2100 U | 37000 U | 1800 U |
| 2-Chlorophenol | 1900 U | 2100 U | 37000 U | 1800 U |
| 1,3-Dichlorobenzene | 1900 U | 2100 U | 37000 U | 1800 U |
| 1,4-Dichlorobenzene | 1900 U | 2100 U | 37000 U | 1800 U |
| Benzyl Alcohol | 1900 U | 2100 U | 37000 U | 1800 U |
| 1,2-Dichlorobenzene | 1900 U | 2100 U | 37000 U | 1800 U |
| 2-Methylphenol | 1900 U | 2100 U | 37000 U | 1800 U |
| bis(2-Chloroisopropyl)Ether | 1900 U | 2100 U | 37000 U | 1800 U |
| 4-Methylphenol | 1900 U | 2100 U | 37000 U | 1800 U |
| N-Nitroso-di-n-propylamine | 1900 U | 2100 U | 37000 U | 1800 U |
| N-Nitroso-di-methylamine | NR | NR | NR | NR |
| Hexachloroethane | 1900 U | 2100 U | 37000 U | 1800 U |
| Nitrobenzene | 1900 U | 2100 U | 37000 U | 1800 U |
| Isophorone | 1900 U | 2100 U | 37000 U | 1800 U |
| 2-Nitrophenol | 1900 U | 2100 U | 37000 U | 1800 U |
| 2,4-Dimethylphenol | 1900 U | 2100 U | 37000 U | 1800 U |
| Benzoic Acid | 9500 U | 10000 U | 180000 U | 9000 U |
| bis(2-Chloroethoxy)Methane | 1900 U | 2100 U | 37000 U | 1800 U |
| 2,4-Dichlorophenol | 1900 U | 2100 U | 37000 U | 1800 U |
| 1,2,4-Trichlorobenzene | 1900 U | 2100 U | 37000 U | 1800 U |
| Naphthalene | 1900 U | 2100 U | 44000 | 1800 U |
| 4-Chloroaniline | 1900 U | 2100 U | 37000 U | 1800 U |
| Hexachlororbutadiene | 1900 U | 2100 U | 37000 U | 1800 U |
| 4-Chloro-3-methylphenol | 1900 U | 2100 U | 37000 U | 1800 U |
| 2-Methylnaphthalene | 1900 U | 2100 U | 13000 J | 1800 U |
| Hexachlorocyclopentadiene | 1900 U | 2100 U | 37000 U | 1800 U |
| 2,4,6-Trichlorophenol | 1900 U | 2100 U | 37000 U | 1800 U |
| 2,4,5-Trichlorophenol | 9500 U | 10000 U | 180000 U | 9000 U |
| 2-Chloronaphthalene | 1900 U | 2100 U | 37000 U | 1800 U |
| 2-Nitroaniline | 9500 U | 10000 U | 180000 U | 9000 U |
| Dimethyl Phthalate | 1900 U | 2100 U | 37000 U | 1800 U |
| Acenaphthylene | 1900 U | 2100 U | 37000 U | 1800 U |
| 3-Nitroaniline | 9500 U | 10000 U | 180000 U | 9000 U |
| Acenaphthene | 1900 U | 2100 U | 27000 J | 1800 U |
| 2,4-Dinitrophenol | 9500 U | 10000 U | 180000 U | 9000 U |
| 4-Nitrophenol | 9500 U | 10000 U | 180000 U | 9000 U |
| Dibenzofuran | 1900 U | 2100 U | 14000 J | 1800 U |
| 2,4-Dinitrotoluene | 1900 U | 2100 U | 37000 U | 1800 U |
| 2,6-Dinitrotoluene | 1900 U | 2100 U | 37000 U | 1800 U |

WESTON ANALYTICS
GC/MS DATA SUMMARY
Semivolatile HAZARDOUS SUBSTANCE LIST COMPOUNDS

RFW Batch Number: Client. ROCKWELL (ROCKY FLATS) 

| Sample Information | SWMU 177 CS036 | | #177 CS037 | | #182 CS022 | | #182 CS023 | |
|---|---|---|---|---|---|---|---|---|
| RFW Batch ID: | 8810-093-004 | | 8810-093-005 | | 8810-108-001 | | 8810-108-002 | |
| Customer ID: | BH88A046 | | BH88A047 | | BH88A048 | | BH88A049 | |
| Collection Date. | 10/25/88 | | 10/25/88 | | 10/27/88 | | 10/27/88 | |
| Matrix: | Soil | | Soil | | Soil | | Soil | |
| Units· | UG/KG | | UG/KG | | UG/KG | | UG/KG | |
| **Analytes** | | | | | | | | |
| Diethylphthalate..... | 1900 | U | 2100 | U | 37000 | U | 1800 | U |
| 4-Chlorophenyl-phenylether..... | 1900 | U | 2100 | U | 37000 | U | 1800 | U |
| Fluorene..... | 1900 | U | 2100 | U | 23000 | J | 1800 | U |
| 4-Nitroaniline..... | 9500 | U | 10000 | U | 180000 | U | 9000 | U |
| 4,6-Dinitro-2-methylphenol..... | 9500 | U | 10000 | U | 180000 | U | 9000 | U |
| N-Nitrosodiphenylamine..... | 1900 | U | 880 | J | 37000 | U | 1800 | U |
| 4-Bromophenyl-phenylether..... | 1900 | U | 2100 | U | 37000 | U | 1800 | U |
| Hexachlorobenzene..... | 1900 | U | 2100 | U | 37000 | U | 1800 | U |
| Pentachlorophenol..... | 9500 | U | 10000 | U | 180000 | U | 9000 | U |
| Phenanthrene..... | 1900 | U | 500 | J | 95000 | | 380 | J |
| Anthracene..... | 1900 | U | 2100 | U | 28000 | J | 1800 | U |
| di-n-Butyl Phthalate..... | 1900 | U | 1300 | J | 37000 | U | 1800 | U |
| Fluoranthene..... | 1900 | U | 780 | J | 77000 | | 410 | J |
| Pyrene..... | 1900 | U | 880 | J | 62000 | | 320 | J |
| Butyl Benzyl Phthalate..... | 1900 | U | 510 | J | 37000 | U | 1800 | U |
| 3,3'-Dichlorobenzidine..... | 3800 | U | 4100 | U | 73000 | U | 3600 | U |
| Benzo(a)Anthracene..... | 1900 | U | 2100 | U | 25000 | J | 1800 | U |
| bis(2-Ethylhexyl)Phthalate..... | 2100 | B | 1400 | JB | 12000 | J | 630 | J |
| Chrysene..... | 1900 | U | 550 | J | 37000 | U | 1800 | U |
| di-n-Octyl Phthalate..... | 1900 | U | 290 | J | 37000 | U | 1800 | U |
| Benzo(b)Fluoranthene..... | 1900 | U | 350 | J | 26000 | J | 1800 | U |
| Benzo(k)Fluoranthene..... | 1900 | U | 320 | J | 27000 | J | 180 | J |
| Benzo(a)Pyrene..... | 1900 | U | 230 | J | 34000 | J | 220 | J |
| Indeno(1,2,3-cd)Pyrene..... | 1900 | U | 2100 | U | 28000 | J | 1800 | U |
| Dibenz(a,h)Anthracene..... | 1900 | U | 2100 | U | 14000 | J | 1800 | U |
| Benzo(g,h,i)Perylene..... | 1900 | U | 2100 | U | 32000 | J | 1800 | U |
| Benzidine..... | | NR | | NR | | NR | | NR |
| Aniline..... | | NR | | NR | | NR | | NR |

**Accu-Labs Research, Inc.**

11485 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423 2766

November 17, 1988

Mr. Norm Flynn
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Mr. Flynn,

Enclosed is the analytical report in the requested format as per Contract LL-0421 for ALR No. 9612-28467-10. This report covers the Inorganic portion only.

A floppy disk is also enclosed containing all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

Steven Callio
Soils and RCRA
Supervisor

for Mary Fabisiak
Water Laboratory
Supervisor

SC/MF/dh

176
175
170
174
177
182

11-88

11/17/88

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

| Field Parameters | | | |
|---|---|---|---|
| | CS03 | CS08 | CS07 |
| RFW Batch ID: | 1100-127-100 | 1100-128-100 | 1100-129-100 |
| Customer ID: | BH88A033 | BH88A034 | BH88A035 |
| ALR No.: | 9612-28467-10-1 | 9612-28467-10-2 | 9612-28467-10-3 |
| Matrix: | Soil | Soil | Soil |

| Field Parameters | | | | | | |
|---|---|---|---|---|---|---|
| CO3= as CaCO3 | | | | | | |
| HCO3- as CaCO3 | | | | | | |
| Chloride | | | | | | |
| Sulfate | | | | | | |
| pH | 7.1 | phunit | 7.8 | phunit | 7.8 | phunit |
| Total Organic Carbon | 7200 | mg/kg | 18,000 | mg/kg | 11,000 | mg/kg |
| Fluoride | | | | | | |
| Nitrate-Nitrite-Nitrogen | 2.1 | mg/kg | 6.0 | mg/kg | 4.6 | mg/kg |
| Sulfide | | | | | | |
| Cyanide, Total | | | | | | |
| Hexavalent Chromium (Cr+6) | | | | | | |
| Total Dissolved Solids | | | | | | |
| Total Suspended Solids | | | | | | |
| Ignitability (Degrees) | | | | | | |

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

| Field Parameters | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| RFW Batch ID: | 1100-130-100 | | 1100-131-100 | | 1100-132-100 | |
| Customer ID: | BH88A036 | | BH88A037 | | BH88A038 | |
| ALR No.: | 9612-28467-10-4 | | 9612-28467-10-5 | | 9612-28467-10-6 | |
| Matrix: | Soil | | Soil | | Soil | |
| **Field Parameters** | | | | | | |
| CO3= as CaCO3 | | | | | | |
| HCO3- as CaCO3 | | | | | | |
| Chloride | | | | | | |
| Sulfate | | | | | | |
| pH | 7.5 | phunit | 7.6 | phunit | 7.8 | phunit |
| Total Organic Carbon | 11,000 | mg/kg | 9500 | mg/kg | 6200 | mg/kg |
| Fluoride | | | | | | |
| Nitrate-Nitrite-Nitrogen | 20 | mg/kg | 2.2 | mg/kg | 2.2 | mg/kg |
| Sulfide | | | | | | |
| Cyanide, Total | | | | | | |
| Hexavalent Chromium (Cr+6) | | | | | | |
| Total Dissolved Solids | | | | | | |
| Total Suspended Solids | | | | | | |
| Ignitability (Degrees) | | | | | | |

| Field Parameters | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | |
| RFW Batch ID: | 1100-133-100 | | 1100-134-100 | | 1100-135-100 | |
| Customer ID: | BH88A039 | | BH88A040 + MS,MSD | | BH88A041 | |
| ALR No.: | 9612-28467-10-7 | | 9612-28467-10-8 | | 9612-28467-10-9 | |
| Matrix: | Soil | | Soil | | Water | |
| **Field Parameters** | | | | | | |
| CO3= as CaCO3 | | | | | | |
| HCO3- as CaCO3 | | | | | | |
| Chloride | | | | | | |
| Sulfate | | | | | | |
| pH | 7.9 | phunit | 7.8 | phunit | 1.3 | phunit |
| Total Organic Carbon | 8400 | mg/kg | 12,000 | mg/kg | 1 | mg/l |
| Fluoride | | | | | | |
| Nitrate-Nitrite-Nitrogen | 5.6 | mg/kg | 5.2 | mg/kg | <0.2 | mg/l |
| Sulfide | | | | | | |
| Cyanide, Total | | | | | | |
| Hexavalent Chromium (Cr+6) | | | | | | |
| Total Dissolved Solids | | | | | | |
| Total Suspended Solids | | | | | | |
| Ignitability (Degrees) | | | | | | |

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 3

Field Parameters

| | |
|---|---|
| RFW Batch ID: | 1100-136-100 |
| Customer ID: | BH88A042 |
| ALR No.: | 9612-28467-10-10 |
| Matrix: | Soil |

Field Parameters

| | | |
|---|---|---|
| CO3= as CaCO3..... | | |
| HCO3- as CaCO3..... | | |
| Chloride..... | | |
| Sulfate..... | | |
| pH..... | 8.1 | phunit |
| Total Organic Carbon..... | 11,000 | mg/kg |
| Fluoride..... | | |
| Nitrate-Nitrite-Nitrogen..... | 7.5 | mg/kg |
| Sulfide..... | | |
| Cyanide, Total..... | | |
| Hexavalent Chromium (Cr+6)..... | | |
| Total Dissolved Solids..... | | |
| Total Suspended Solids..... | | |
| Ignitability (Degrees)..... | | |

Note: pH sample for BH88A041 (ALR 9612-28467-10-9) was perserved for nutrients.

**Accu-Labs Research, Inc.**
5 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423-2766

November 17, 1988

Mr. Norm Flynn
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Mr. Flynn,

Enclosed is the analytical report in the requested format as per Contract LL-0421 for ALR No. 9612-28466-8. This report covers the Inorganic portion only.

A floppy disk is also enclosed containing all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

Steven Callio
Soils and RCRA
Supervisor

for Mary Fabisiak
Water Laboratory
Supervisor

SC/MF/dh

11-88

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ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

| Field Parameters | | | | | | |
|---|---|---|---|---|---|---|
| | | Sum 176 CS024 | | Sum 176 CS025 | | Sum 176 CS026 |
| RFW Batch ID: | | 1100-119-100 | | 1100-120-100 | | 1100-121-100 |
| Customer ID: | | BH88A024 | | BH88A025 | | BH88A026 |
| ALR No.: | | 9612-28466-8-1 | | 9612-28466-8-2 | | 9612-28466-8-3 |
| Matrix: | | Soil | | Soil | | Soil |

Field Parameters

| | | | | | | |
|---|---|---|---|---|---|---|
| CO3= as CaCO3..... | | | | | | |
| HCO3- as CaCO3..... | | | | | | |
| Chloride..... | | | | | | |
| Sulfate..... | | | | | | |
| pH..... | 7.8 | phunit | 7.9 | phunit | 7.3 | phunit |
| Total Organic Carbon..... | 24,000 | mg/kg | 27,000 | mg/kg | 17,000 | mg/kg |
| Fluoride..... | | | | | | |
| Nitrate-Nitrite-Nitrogen..... | 25 | mg/kg | 4.5 | mg/kg | 4.9 | mg/kg |
| Sulfide..... | | | | | | |
| Cyanide, Total..... | | | | | | |
| Hexavalent Chromium (Cr+6). .. .. | | | | | | |
| Total Dissolved Solids..... | | | | | | |
| Total Suspended Solids..... | | | | | | |
| Ignitability (Degrees)..... | | | | | | |

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

Field Parameters

| | | | |
|---|---|---|---|
| RFW Batch ID: | 1100-122-100 | 1100-123-100 | 1100-124-100 |
| Customer ID: | BH88A027 + MS,MSD | BH88A028 | BH88A029 |
| ALR No.: | 9612-28466-8-4 | 9612-28466-8-5 | 9612-28466-8-6 |
| Matrix: | Soil | Water | Soil |

Field Parameters

| | | | | | | |
|---|---|---|---|---|---|---|
| CO3= as CaCO3 | | | | | | |
| HCO3- as CaCO3 | | | | | | |
| Chloride | | | | | | |
| Sulfate | | | | | | |
| pH | 7.0 | phunit | 7.1 | phunit | 6.9 | phunit |
| Total Organic Carbon | 26,000 | mg/kg | 2 | mg/l | 19,000 | mg/kg |
| Fluoride | | | | | | |
| Nitrate-Nitrite-Nitrogen | 5.0 | mg/kg | <0.2 | mg/l | 5.2 | mg/kg |
| Sulfide | | | | | | |
| Cyanide, Total | | | | | | |
| Hexavalent Chromium (Cr+6) | | | | | | |
| Total Dissolved Solids | | | | | | |
| Total Suspended Solids | | | | | | |
| Ignitability (Degrees) | | | | | | |

Field Parameters

| | | |
|---|---|---|
| RFW Batch ID: | 1100-125-100 | 1100-126-100 |
| Customer ID: | BH88A030 | BH88A031 |
| ALR No.: | 9612-28466-8-7 | 9612-28466-8-8 |
| Matrix: | Soil | Soil |

Field Parameters

| | | | | |
|---|---|---|---|---|
| CO3= as CaCO3 | | | | |
| HCO3- as CaCO3 | | | | |
| Chloride | | | | |
| Sulfate | | | | |
| pH | 7.1 | phunit | 7.2 | phunit |
| Total Organic Carbon | 22,000 | mg/kg | 25,000 | mg/kg |
| Fluoride | | | | |
| Nitrate-Nitrite-Nitrogen | 48 | mg/kg | 15 | mg/kg |
| Sulfide | | | | |
| Cyanide, Total | | | | |
| Hexavalent Chromium (Cr+6) | | | | |
| Total Dissolved Solids | | | | |
| Total Suspended Solids | | | | |
| Ignitability (Degrees) | | | | |

**Accu-Labs Research, Inc.**

85 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423 2766

November 17, 1988

Mr. Norm Flynn
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Mr. Flynn,

Enclosed is the analytical report in the requested format as per Contract LL-0421 for ALR No. 9299-28412-2. This report covers the Inorganic portion only.

A floppy disk is also enclosed containing all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

Steven Callio
Soils and RCRA
Supervisor

for Mary Fabisiak
Water Laboratory
Supervisor

SC/MF/dh

11/17/88

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

| Field Parameters | | | | |
|---|---|---|---|---|
| | | Sum 120 CS016 | Sum 120 CS017 | |
| RFW Batch ID: | | 1100-109-100 | 1100-110-100 | |
| Customer ID: | | BH88A021 | BH88A022 | |
| ALR No.: | | 9299-28412-2-1 | 9299-28412-2-2 | |
| Matrix: | | Soil | Soil | |
| **Field Parameters** | | | | |
| CO3= as CaCO3 | | | | |
| HCO3- as CaCO3 | | | | |
| Chloride | | | | |
| Sulfate | | | | |
| pH | | 6.5 phunit | 6.9 phunit | |
| Total Organic Carbon | | 22,000 mg/kg | 22,000 mg/kg | |
| Fluoride | | | | |
| Nitrate-Nitrite-Nitrogen | | 1.9 mg/kg | 4.6 mg/kg | |
| Sulfide | | | | |
| Cyanide, Total | | | | |
| Hexavalent Chromium (Cr+6) | | | | |
| Total Dissolved Solids | | | | |
| Total Suspended Solids | | | | |
| Ignitability (Degrees) | | | | |

**Accu-Labs Research, Inc.**

5 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423 2766

November 17, 1988

Mr. Norm Flynn
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Mr. Flynn,

Enclosed is the analytical report in the requested format as per Contract LL-0421 for ALR No. 9299-28388-9. This report covers the Inorganic portion only.

A floppy disk is also enclosed containing all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

Steven Callio
Soils and RCRA
Supervisor

for Mary Fabisiak
Water Laboratory
Supervisor

SC/MF/dh

11/17/88

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

Field Parameters

| | | | |
|---|---|---|---|
| | SWMU CS015 | SWMU CS015 | |
| RFW Batch ID: | 1100-100-100 | 1100-101-100 | 1100-102-100 |
| Customer ID: | BH88A011 | BH88A012 | BH88A013+MS+MSD |
| ALR No.: | 9299-28388-9-1 | 9299-28388-9-2 | 9299-28388-9-3 |
| Matrix: | Soil | Soil | Soil |

Field Parameters

| | | | | | | |
|---|---|---|---|---|---|---|
| CO3= as CaCO3..... | | | | | | |
| HCO3- as CaCO3..... | | | | | | |
| Chloride..... | | | | | | |
| Sulfate..... | | | | | | |
| pH..... | 6.4 | phunit | 5.8 | phunit | 5.7 | phunit |
| Total Organic Carbon..... | 23,000 | mg/kg | 37.000 | mg/kg | 46,000 | mg/kg |
| Fluoride..... | | | | | | |
| Nitrate-Nitrite-Nitrogen..... | 1.2 | mg/kg | <1.1 | mg/kg | <1.1 | mg/kg |
| Sulfide..... | | | | | | |
| Cyanide, Total..... | | | | | | |
| Hexavalent Chromium (Cr+6).... .. | | | | | | |
| Total Dissolved Solids..... | | | | | | |
| Total Suspended Solids..... | | | | | | |
| Ignitability (Degrees)..... | | | | | | |

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

Field Parameters

| | | | |
|---|---|---|---|
| RFW Batch ID: | 1100-103-100 | 1100-104-100 | 1100-105-100 |
| Customer ID: | BH88A014 | BH88A015 | BH88A016 |
| ALR No.: | 9299-28388-9-4 | 9299-28388-9-5 | 9299-28388-9-6 |
| Matrix: | Soil | Water | Soil |

Field Parameters

| | | | | | | |
|---|---|---|---|---|---|---|
| CO3= as CaCO3 | | | | | | |
| HCO3- as CaCO3 | | | | | | |
| Chloride | | | | | | |
| Sulfate | | | | | | |
| pH | 6.6 | phunit | NA | phunit | 6.4 | phunit |
| Total Organic Carbon | 33,000 | mg/kg | NA/NP | mg/kg | 9600 | mg/kg |
| Fluoride | | | | | | |
| Nitrate-Nitrite-Nitrogen | <1.1 | mg/kg | NA/NP | mg/kg | 2.1 | mg/kg |
| Sulfide | | | | | | |
| Cyanide, Total | | | | | | |
| Hexavalent Chromium (Cr+6) | | | | | | |
| Total Dissolved Solids | | | | | | |
| Total Suspended Solids | | | | | | |
| Ignitability (Degrees) | | | | | | |

Field Parameters

| | | | |
|---|---|---|---|
| RFW Batch ID: | 1100-106-100 | 1100-107-100 | 1100-108-100 |
| Customer ID: | BH88A017 | BH88A018 | BH88A019 |
| ALR No.: | 9299-28388-9-7 | 9299-28388-9-8 | 9299-28388-9-9 |
| Matrix: | Soil | Soil | Soil |

Field Parameters

| | | | | | | |
|---|---|---|---|---|---|---|
| CO3= as CaCO3 | | | | | | |
| HCO3- as CaCO3 | | | | | | |
| Chloride | | | | | | |
| Sulfate | | | | | | |
| pH | 6.1 | phunit | 6.0 | phunit | 6.5 | phunit |
| Total Organic Carbon | 27,000 | mg/kg | 17,000 | mg/kg | 21,000 | mg/kg |
| Fluoride | | | | | | |
| Nitrate-Nitrite-Nitrogen | <1.1 | mg/kg | <1.1 | mg/kg | 1.1 | mg/kg |
| Sulfide | | | | | | |
| Cyanide, Total | | | | | | |
| Hexavalent Chromium (Cr+6) | | | | | | |
| Total Dissolved Solids | | | | | | |
| Total Suspended Solids | | | | | | |
| Ignitability (Degrees) | | | | | | |

Note: NA/NP = Not Analyzed/Not Preserved.

**Accu-Labs Research, Inc.**
5 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423-2766

November 17, 1988

Mr. Norm Flynn
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Mr. Flynn,

Enclosed is the analytical report in the requested format as per Contract LL-0421 for ALR No. 9299-28380-8. This report covers the Inorganic portion only.

A floppy disk is also enclosed containing all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

Steven Callio
Soils and RCRA
Supervisor

for Mary Fabisiak
Water Laboratory
Supervisor

SC/MF/dh

/17/88

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

RFW Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 1

| Field Parameters | | | | | | |
|---|---|---|---|---|---|---|
| | | CS005 | | CS002 | | CS004 |
| | RFW Batch ID: | 1100-111-100 | | 1100-112-100 | | 1100-113-100 |
| | Customer ID: | BH88A002 | | BH88A003 | | BH88A004 |
| | ALR No.: | 9299-28380-8-1 | | 9299-28380-8-2 | | 9299-28380-8-3 |
| | Matrix: | Soil | | Soil | | Soil |
| **Field Parameters** | | | | | | |
| CO3= as CaCO3..... | | | | | | |
| HCO3- as CaCO3..... | | | | | | |
| Chloride..... | | | | | | |
| Sulfate..... | | | | | | |
| pH..... | 5.4 | phunit | 6.4 | phunit | 5.4 | phunit |
| Total Organic Carbon..... | 33,000 | mg/kg | 36,000 | mg/kg | 56,000 | mg/kg |
| Fluoride..... | | | | | | |
| Nitrate-Nitrite-Nitrogen..... | 2.4 | mg/kg | <1.1 | mg/kg | <1.1 | mg/kg |
| Sulfide..... | | | | | | |
| Cyanide, Total..... | | | | | | |
| Hexavalent Chromium (Cr+6)..... | | | | | | |
| Total Dissolved Solids..... | | | | | | |
| Total Suspended Solids..... | | | | | | |
| Ignitability (Degrees)..... | | | | | | |

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

| Field Parameters | | | | | | |
|---|---|---|---|---|---|---|
| | | CS008 | | CS009 | | CS006 |
| | RFW Batch ID: | 1100-114-100 | | 1100-115-100 | | 1100-116-100 |
| | Customer ID: | BH88A005 | | BH88A006 | | BH88A007 |
| | ALR No.: | 9299-28380-8-4 | | 9299-28380-8-5 | | 9299-28380-8-6 |
| | Matrix: | Soil | | Soil | | Soil |
| **Field Parameters** | | | | | | |
| CO3= as CaCO3..... | | | | | | |
| HCO3- as CaCO3..... | | | | | | |
| Chloride..... | | | | | | |
| Sulfate..... | | | | | | |
| pH..... | | 6.2 | phunit | 6.3 | phunit | 6.1 | phunit |
| Total Organic Carbon..... | | 17,000 | mg/kg | 21,000 | mg/kg | 21,000 | mg/kg |
| Fluoride..... | | | | | | |
| Nitrate-Nitrite-Nitrogen..... | | 2.3 | mg/kg | 2.2 | mg/kg | 2.0 | mg/kg |
| Sulfide..... | | | | | | |
| Cyanide, Total..... | | | | | | |
| Hexavalent Chromium (Cr+6)..... | | | | | | |
| Total Dissolved Solids..... | | | | | | |
| Total Suspended Solids..... | | | | | | |
| Ignitability (Degrees)..... | | | | | | |

| Field Parameters | | | | | |
|---|---|---|---|---|---|
| | | [illegible] | | [illegible] | |
| | RFW Batch ID: | 1100-117-100 | | 1100-118-100 | |
| | Customer ID: | BH88A008 | | BH88A009 | |
| | ALR No.: | 9299-28380-8-7 | | 9299-28380-8-8 | |
| | Matrix: | Soil | | Soil | |
| **Field Parameters** | | | | | |
| CO3= as CaCO3..... | | | | | |
| HCO3- as CaCO3..... | | | | | |
| Chloride..... | | | | | |
| Sulfate..... | | | | | |
| pH..... | | 6.2 | phunit | 6.2 | phunit |
| Total Organic Carbon..... | | 14,000 | mg/kg | 18,000 | mg/kg |
| Fluoride..... | | | | | |
| Nitrate-Nitrite-Nitrogen..... | | 2.1 | mg/kg | 1.6 | mg/kg |
| Sulfide..... | | | | | |
| Cyanide, Total..... | | | | | |
| Hexavalent Chromium (Cr+6)..... | | | | | |
| Total Dissolved Solids..... | | | | | |
| Total Suspended Solids..... | | | | | |
| Ignitability (Degrees)..... | | | | | |

**Accu-Labs Research, Inc.**
5 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423 2766

RECEIVED
DEC 8 1988

December 5, 1988

Mr. Norm Flynn
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Mr. Flynn,

Enclosed is the analytical report in the requested format as per Contract LL-0421 for ALR No. 9612-28524-2. This report covers the Inorganic portion only.

A floppy disk is being sent under seperate cover which contains all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

Steven Callio
Soils and RCRA
Supervisor

Mary Fabisiak
Water Laboratory
Supervisor

SC/MF/dh

ACCU LABS RESEARCH, INC.
INORGANIC
DATA SUMMARY REPORT

RFW Batch Number: | Client: ROCKWELL (ROCKY FLATS) | Page: 2

| Sample Information | swmu177 CS037 | swmu182 CS022 | swmu182 CS023 |
|---|---|---|---|
| RFW Batch ID: | 1100-140-100 | 1100-141-100 | 1100-142-100 |
| Customer ID: | BH88A047 | BH88A048 | BH88A049 |
| ALR No.: | 9612-28492-4-4 | 9612-28524-2-1 | 9612-28524-2-2 |
| Matrix: | Soil | Soil | Soil |

Inorganics

| | | | | | | |
|---|---|---|---|---|---|---|
| CO3= as CaCO3..... | | | | | | |
| HCO3- as CaCO3... ..... | | | | | | |
| Chloride..... | | | | | | |
| Sulfate..... | | | | | | |
| pH..... | 8.0 | phunit | 8.4 | phunit | 8.6 | phunit |
| Total Organic Carbon..... | 20,000 | mg/kg | 9600 | mg/kg | 790 | mg/kg |
| Fluoride..... ..... | | | | | | |
| Nitrate-Nitrite-Nitrogen..... | <1.1 | mg/kg | <1.1 | mg/kg | <1.1 | mg/kg |
| Sulfide..... ..... | | | | | | |
| Cyanide, Total..... | | | | | | |
| Hexavalent Chromium (Cr+6)..... | | | | | | |
| Total Dissolved Solids..... | | | | | | |
| Total Suspended Solids..... | | | | | | |
| Ignitability (Degrees)..... | | | | | | |

**Accu-Labs Research, Inc.**

85 W 48th Avenue Wheat Ridge, Colorado 80033 (303) 423-2766

January 6, 1989

Ms. Peg Beatty
Weston Analytics
7720 Lorraine Ave.
Suite 105
Stockton, CA 95210

Dear Ms. Beatty,

Enclosed are the analytical reports in the requested format as per Contract LL-0421 for the following ALR Nos.:

9612-28492-4
9612-28467-10

These reports cover the Radiochemistry portion only.

A floppy disk is being sent under seperate cover which contains all the data on the hard copies.

If you have any questions, please feel free to call.

Sincerely,

Bud Summers
Radiochemistry
Supervisor

BS/dh

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROC WELL ROCKY FLATS Page: 1

| | [illegible] | [illegible] | [illegible] |
|---|---|---|---|
| | CSC 34 | CSC 35 | CSO 46 |
| RFW Batch ID: | [illegible] | [illegible] | [illegible] |
| Customer ID: | [illegible] | [illegible] | [illegible] |
| Laboratory ID: | [illegible] | [illegible] | [illegible] |
| Matrix: | Soil | Soil | Soil |

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Gross Beta | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Uranium 233, 234 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Uranium 235 | | | | | | |
| Uranium 238 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Strontium 89, 90 | | | | | | |
| Plutonium 239, 240 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Americium 241 | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Cesium 137 | | | | | | |
| [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] | [illegible] |
| Moisture | [illegible] | | | | | |

| | [illegible] |
|---|---|
| RFW Batch ID: | [illegible] |
| Customer ID: | [illegible] |
| Laboratory ID: | [illegible] |
| Matrix: | Soil |

| | | |
|---|---|---|
| Gross Alpha | [illegible] | [illegible] |
| Gross Beta | [illegible] | [illegible] |
| Uranium 233, 234 | [illegible] | [illegible] |
| Uranium 235 | | |
| Uranium 238 | [illegible] | [illegible] |
| Strontium 89, 90 | | |
| Plutonium 239, 240 | [illegible] | [illegible] |
| Americium 241 | [illegible] | [illegible] |
| Cesium 137 | | |
| [illegible] | [illegible] | [illegible] |
| Moisture | [illegible] | |

[illegible] LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

[illegible] Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: [illegible]

| | SWMU 176 | SWMU 176 | SWMU 176 |
|---|---|---|---|
| RFW Batch ID: | [illegible] | [illegible] | [illegible] |
| Customer ID: | [illegible] | [illegible] | [illegible] |
| Laboratory ID: | [illegible] | [illegible] | [illegible] |
| Matrix: | Soil | Soil | Soil |

| | CS031 | | CS028 | | CS029 | |
|---|---|---|---|---|---|---|
| Gross Alpha | [illegible] | pci/g | [illegible] | pci/g | [illegible] | pci/g |
| Gross Beta | [illegible] | pci/g | [illegible] | pci/g | [illegible] | pci/g |
| Uranium 233, 234 | 0.74 ± [illegible] | pci/g | [illegible] ± 0.18 | pci/g | [illegible] | pci/g |
| Uranium 235 | | | | | | |
| Uranium 238 | [illegible] | pci/g | [illegible] | pci/g | [illegible] | pci/g |
| Strontium 89, 90 | | | | | | |
| Plutonium 239, 240 | [illegible] | pci/g | [illegible] ± 0.16 | pci/g | [illegible] | pci/g |
| Americium 24 | [illegible] | pci/g | [illegible] ± 0.08 | pci/g | [illegible] | pci/g |
| Cesium 137 | | | | | | |
| Tritium | [illegible] | pci/ml | [illegible] | pci/ml | [illegible] | pci/ml |
| % Moisture | [illegible] | | [illegible] | | [illegible] | |

| | SWMU 176 | SWMU 175 | SWMU [illegible] |
|---|---|---|---|
| RFW Batch ID: | [illegible] | [illegible] | [illegible] |
| Customer ID: | [illegible] | [illegible] | [illegible] |
| Laboratory ID: | [illegible] | [illegible] | [illegible] |
| Matrix: | Soil | Soil | Soil |

| | CS033 | | CS018 | | CS019 | |
|---|---|---|---|---|---|---|
| Gross Alpha | [illegible] | pci/g | [illegible] | pci/g | [illegible] | pci/g |
| Gross Beta | [illegible] | pci/g | [illegible] | pci/g | [illegible] | pci/g |
| Uranium 233, 234 | [illegible] | pci/g | [illegible] | pci/g | [illegible] | pci/g |
| Uranium 235 | | | | | | |
| Uranium 238 | [illegible] ± 0.21 | pci/g | [illegible] | pci/g | [illegible] | pci/g |
| Strontium 89, 90 | | | | | | |
| Plutonium 239, 240 | 0.44 ± 0.15 | pci/g | [illegible] | pci/g | [illegible] | pci/g |
| Americium 24 | 0.21 ± 0.08 | pci/g | [illegible] ± 0.04 | pci/g | [illegible] | pci/g |
| Cesium 137 | | | | | | |
| Tritium | [illegible] | pci/ml | [illegible] | pci/ml | [illegible] | pci/ml |
| % Moisture | [illegible] | | [illegible] | | [illegible] | |

ACCU LABS RESEARCH, INC.
RADIOCHEMISTRY
DATA SUMMARY REPORT

Batch Number: Client: ROCKWELL (ROCKY FLATS) Page: 2

Swmu 175

| | | | |
|---|---|---|---|
| RFW Batch ID: | 2000-139-100 | 2000-140-100 | 2000-141-100 |
| Customer ID: | BH88A039 | BH88A040 + MS, MSD | BH88A041 |
| Laboratory ID: | 9612-28467-10-7 | 9612-28467-10-8 | 9612-28467-10-9 |
| Matrix: | Soil | Soil | Water |

CS021

| | | | | | | |
|---|---|---|---|---|---|---|
| Gross Alpha | 52 ± 16 | pCi/g | 37 ± 14 | pCi/g | 0 ± 1 | pCi/l |
| Gross Beta | 46 ± 7 | pCi/g | 38 ± 7 | pCi/g | 0 ± 2 | pCi/l |
| Uranium 233, 234 | 0.70 ± 0.17 | pCi/g | 1.0 ± 0.2 | pCi/g | -0.1 ± 0.1 | pCi/l |
| Uranium 235 | | | | | | |
| Uranium 238 | 0.77 ± 0.17 | pCi/g | 0.95 ± 0.22 | pCi/g | 0.0 ± 0.1 | pCi/l |
| Strontium 89, 90 | | | | | | |
| Plutonium 239, 240 | 0.42 ± 0.18 | pCi/g | 0.18 ± 0.20 | pCi/g | 0.0 ± [illegible] | pCi/l |
| Americium 241 | 0.03 ± 0.08 | pCi/g | 0.08 ± 0.07 | pCi/g | 0.0 ± [illegible] | pCi/l |
| Cesium 137 | | | | | | |
| Tritium | 0.12 ± 0.16 | pCi/ml | 0.15 ± 0.16 | pCi/ml | 70 ± 60 | pCi/l |
| % Moisture | 5.0 | | [illegible] | | | |

never mind!

Swmu 175

| | |
|---|---|
| RFW Batch ID: | 2000-142-100 |
| Customer ID: | BH88A042 |
| Laboratory ID: | 9612-28467-10-10 |
| Matrix: | Soil |

CS060

| | | |
|---|---|---|
| Gross Alpha | 33 ± 14 | pCi/g |
| Gross Beta | 39 ± [illegible] | pCi/g |
| Uranium 233, 234 | 0.75 ± 0.18 | pCi/g |
| Uranium 235 | | |
| Uranium 238 | .30 ± 0.18 | pCi/g |
| Strontium 89, 90 | | |
| Plutonium 239, 240 | 0.06 ± 0.04 | pCi/g |
| Americium 241 | 0.06 ± 0.06 | pCi/g |
| Cesium 137 | | |
| Tritium | 0.04 ± 0.06 | pCi/ml |
| % Moisture | 8.0 | |

WESTON
MANAGERS DESIGNERS/CONSULTANTS

WESTON-GULF COAST LABORATORIES, INC
2417 Bond St., University Park, Illinois 60466
Phones (312) 534-5200 (219) 885-7077 (815) 723-7533

Weston-Gulf Coast
Rockwell. 142966-142976
VOA. BNA GC/MS

# CASE NARRATIVE

## GENERAL

1. Weston-Gulf Coast uses the following GC/MS systems which can be identified on all raw data by either the Instrument ID or the quantitation file ID:

| ID # | Instrument | Quant ID File |
|---|---|---|
| GCL#1 | Hewlett Packard 5970 MSD | ID_1EF |
| GCL#2 | Hewlett Packard 5996 | ID_V2H |
| GCL#3 | Hewlett Packard 5996 | ID_LAP |
| GCL#4 | Hewlett Packard 5970 MSD | ID_MGH |

2. The Internal Standard and Surrogate peaks are labeled by name.

3. The quantitation of all detected HSL compounds was conducted using the response factors calculated from the continuing calibration standard.

## VOA:

182

1. All surrogate recoveries in 176 175 s were within QC limits.

2. All of the samples were analy 170 s or waters and therefore normal detection li 174

3. Matrix spike analyses were conc 129 another sample that was analyzed with this set.

## BNA:

1. All surrogate recoveries in the semi-volatile analyses were within QC limits except for two surrogates on Method Blank 142975GB that were slightly low.

2. All of the samples were extracted and analyzed as low level soils or waters and therefore normal detection limits apply.

3. Matrix spike analyses were conducted on sample 142974, 142975, and 142976.

EBASCO SERVICES INCORPORATED

BY _____ DATE _____ SHEET ____ OF ____

CHKD BY _____ DATE _____ OFS NO _____ DEPT NO _____

CLIENT Table 3-2 Analytical results of grab samples collected from the 750 and 904

PROJECT Podcrete storage areas

SUBJECT ENVIRONMENTAL MONITORING RESULTS

which unit? → 750 Pad Culvert and Puddle Samples

| Sample Date | Nitrate mg/l | Gross Alpha pCi/g | Gross Beta pCi/g |
|---|---|---|---|
| ✓ 9/07/88 | 1.55 | 20±22 | 21±27 |
| 9/12/88 | 5.38 ✓ | 7±18 | 42±28 |
| 9/13/88 | 5.49 ✓ | 7±11 | 10±24 |
| 9/13/88 | 4.82 ✓ | 13±16 | 21±25 |
| 9/14/88 | 3.75 | 5±16 | 14±26 |
| 9/21/88 | 1.56 | 20±15 | 34±25 |
| 9/28/88 | 1.51 | 55±28 | 17±32 |
| 10/05/88 | 1.52 | 19±25 | 24±33 |
| 10/06/88 | 9.51 ✓ | 16±13 | 25±25 |
| 10/12/88 | 1.93 | 5±8 | 8±14 |
| 10/19/88 | 1.18 | 11±13 | 25±14 |
| 10/26/88 | 1.23 | 14±12 | 16±16 |
| 11/02/88 | 1.28 | 14±13 | 14±18 |
| 11/09/88 | 2.68 | 5±12 | 2±14 |
| 11/10/88 | 4.53 ✓ | 18±19 | 11±22 |
| 11/15/88 | 1.06 | 9±12 | 3±17 |
| 11/16/88 | 0.99 | 11±24 | 5±21 |
| 11/30/88 | 1.09 | 13±14 | -2±12 |
| culvert → at least from here ✓ 12/07/88 | 1.13 | 28 ± 14 | 14 ± 18 |
| 12/14/88 | 1.26 | 8 ± 9 | 15 ± 13 |
| 12/21/88 | 2.10 | 11 ± 15 | 3 ± 18 |
| 01/04/89 | 1.54 | 2 ± 9 | 5 ± 13 |
| 01/11/89 | 1.40 | 6 ± 10 | 9 ± 14 |

581 2-88

✓ Value exceeds Plant Control Guides for analyte

# EBASCO SERVICES INCORPORATED

BY _____ DATE _____ SHEET ____ OF ____

CHKD BY _____ DATE _____ OFS NO _____ DEPT NO _____

CLIENT _____

PROJECT Analytical results of grab samples collected from the

SUBJECT 750 and 904 pondcrete storage areas (continued)

750 PAD CULVERT

| Sample Date | Nitrate mg/l | Gross Alpha pCi/l | Gross Beta pCi/l |
|---|---|---|---|
| 01/18/89 | 1.47 | 23 ± 13 | 9 ± 13 |
| 01/25/89 | 1.39 | 49 ± 20 | 17 ± 14 |
| 02/08/89 | | source frozen, no sample | |
| 2/15/89 | 1.66 | 9 ± 12 | 19 ± 14 |
| 2/22/89 | 5.90 | 8 ± 10 | 16 ± 15 |
| 3/01/89 | 3.57 | 13 ± 12 | 41 ± 17 |
| 3/08/89 | 5.41 | -2 ± 8 | 1 ± 16 |
| 3/15/89 | 2.65 | 5 ± 10 | 16 ± 16 |
| 3/22/89 | 2.79 | 4 ± 10 | 5 ± 15 |
| 03/29/89 | 2.24 | 17 ± 14 | 11 ± 16 |
| 04/05/89 | 2.05 | 7 ± 10 | 18 ± 16 |
| 04/12/89 | 2.44 | 5 ± 9 | 2 ± 16 |
| 04/19/89 | 2.39 | -2 ± 12 | 2 ± 14 |
| 04/26/89 | 2.17 | 5 ± 12 | 13 ± 22 |
| 05/03/89 | 1.29 | 9 ± 12 | 11 ± 23 |
| 05/10/89 | 2.37 | 6 ± 11 | 27 ± 22 |
| 05/17/89 | 2.48 | 12 ± 12 | 7 ± 15 |
| 05/24/89 | 2.38 | 6 ± 9 | 32 ± 20 |
| 05/31/89 | 2.25 | 7 ± 11 | 26 ± 22 |
| 06/07/89 | 1.23 | 16 ± 12 | -2 ± 16 |
| 06/15/89 | 2.75 | 9 ± 14 | 19 ± 21 |
| 06/21/89 | 2.44 | 4 ± 11 | -6 ± 14 |
| 06/28/89 | 1.90 | 9 ± 12 | -6 ± 18 |
| 07/05/89 | 1.60 | 10 ± 13 | 14 ± 19 |
| 07/12/89 | 1.53 | 11 ± 13 | 25 ± 18 |
| 07/19/89 | 1.46 | 11 ± 10 | 21 ± 19 |
| 07/26/89 | 1.35 | 8 ± 12 | 6 ± 16 |
| 08/02/89 | 1.85 | 26 ± 15 | 15 ± 17 |
| 08/09/89 | 1.75 | 6 ± 10 | 1 ± 15 |
| 08/16/89 | 1.87 | 11 ± 13 | 14 ± 16 |
| 08/23/89 | 2.29 | 23 ± 14 | 19 ± 21 |
| 08/30/89 | 1.41 | 13 ± 14 | -8 ± 17 |
| 09/06/89 | 1.28 | 5 ± 12 | 11 ± 19 |
| 09/13/89 | 3.06 | 7 ± 10 | 10 ± 20 |
| 09/20/89 | 2.25 | 14 ± 14 | 2 ± 17 |
| 09/27/89 | 1.63 | 3 ± 10 | 8 ± 18 |
| 10/04/89 | 1.64 | 7 ± 11 | 1 ± 17 |
| 10-11-89 | 1.54 | 11±11 | 11±18 |
| 10-18-89 | 1.59 | -2±8 | 15±19 |
| 11-01-89 | 2.18 | 0±5 | 24±20 |
| 11-07-89 | 1.69 | 8±11 | 27±20 |

# EBASCO SERVICES INCORPORATED

BY _____ DATE _____ SHEET ____ OF ____

CHKD BY _____ DATE _____ OFS NO _____ DEPT NO _____

CLIENT _____

PROJECT _____

SUBJECT _____

750 PAD CULVERT

| Sample Date | Nitrate mg/l | Gross Alpha pCi/l | Gross Beta pCi/l |
|---|---|---|---|
| 11/15/89 | 1.35 | 11 ± 14 | 10 ± 18 |
| 11/22/89 | 1.04 | 7 ± 9 | 6 ± 17 |
| 11/29/89 | 2.25 | 10 ± 13 | 17 ± 14 |
| 12/06/89 | 1.03 | 6 ± 10 | 12 ± 19 |
| 02/14/90 | <0.02 | 11±15 | 33±22 |
| 02/21/90 | 4.12 | -2±8 | 12±19 |
| 02/28/90 | 3.72 | 20±16 | 6±17 |
| 03/14/90 | 3.65 | 13±21 | 35±33 |
| 3/21/89 | 6.13 | 2 ± 7 | 5 ± 14 |

750 PAD ~~PUDDLE~~ RUNOFF

| Sample Date | Nitrate mg/l | Gross Alpha pCi/l | Gross Beta pCi/l |
|---|---|---|---|
| 12/08/88 | 3.97 | 27 ± 13 | 45 ± 16 |
| 01/06/89 | 2.83 | 5 ± 8 | 15 ± 14 |
| 01/26/89 | 4.69 | 17 ± 11 | 35 ± 16 |
| 2/24/89 | 87.4 | 40 ± 18 | 95 ± 22 |
| 3/08/89 | 39.2 | 2 ± 10 | 38 ± 18 |
| 04/11/89 | 2.88 | -2 ± 6 | 1 ± 14 |
| 04/11/89 | 2.76 | 11 ± 10 | 14 ± 16 |
| 05/01/89 | 3.47 | 7 ± 11 | 25 ± 22 |
| 05/09/89 | 3.54 | 19 ± 15 | 49 ± 22 |
| 05/14/89 | 2.63 | 28 ± 17 | 3 ± 8 |
| 05/16/89 | 4.08 | 6 ± 11 | 13 ± 18 |
| 05/26/89 | 2.54 | 24 ± 15 | 11 ± 15 |
| 05/30/89 | 3.81 | 14 ± 13 | 31 ± 20 |
| 05/31/89 | 1.79 | -1 ± 8 | 11 ± 18 |
| 06/05/89 | 28.7 | 15 ± 15 | 39 ± 21 |
| 06/22/89 | 2.12 | 24 ± 16 | 37 33 ± 16 |
| 07/12/89 | 6.34 | 2 ± 10 | 19 ± 18 |
| 07/31/89 | 3.84 | 4 ± 8 | 27 ± 16 |
| 08/07/89 | 3.76 | 6 ± 10 | 13 ± 15 |
| 08/08/89 | 3.77 | 39 ± 16 | 26 ± 17 |
| 09/08/89 | 5.32 | 4 ± 11 | 49 ± 23 |
| 09/11/89 | 8.25 | 22 ± 19 | 11 ± 19 |
| 09/12/89 | 3.73 | -5 ± 7 | 5 ± 18 |
| 09/13/89 | 0.05 | 6 ± 10 | 33 ± 21 |

# EBASCO SERVICES INCORPORATED

BY _____ DATE _____ SHEET ____ OF ____

CHKD BY _____ DATE _____ OFS NO _____ DEPT NO _____

CLIENT _____

PROJECT _____

SUBJECT _____

750 PAD RUNOFF

| Sample Date | Nitrate mg/l | Gross Alpha pCi/l | Gross Beta pCi/l | Cyanide mg/l | Cadmium ug/l |
|---|---|---|---|---|---|
| 09/21/89 | 4.92 | 1 ± 7 | 14 ± 18 | <0.0025 | 5.6 |
| 10/16/89 | 4.74 | 2 ± 9 | 11 ± 18 | 0.012 | 4.6 |
| 10/17/89 | 5.28 | 5 ± 11 | 14 ± 17 | 0.018 | 3.8 |
| 11/1/89 | 4.60 | 4 ± 9 | 18 ± 20 | <2.5 | 2.2 |
| 11/29/89 | 4.75 | 6 ± 9 | 20 ± 13 | <0.003 | 4.0 |
| 12/07/89 | 7.50 | 7 ± 11 | 21 ± 19 | <0.003 | *** |

| Sample Date | NITRATE MG/l | GROSS ALPHA pCi/l | GROSS BETA pCi/l | CYANIDE mg/l | CADMIUM mg/l |
|---|---|---|---|---|---|
| 02/16/90 | 1.18 | -13.±49 | $(1.1\pm0.1)\times10^3$ | <0.003 | 0.1632 |

1100 ± 100

904 PAD RUNOFF

| Sample Date | Nitrate mg/l | Gross Alpha pCi/g | Gross Beta pCi/g |
|---|---|---|---|
| 9/12/88 | 14.6 | 10±19 | 60±33 |
| 9/14/88 | 72.6 | 47±20 | 110±40 |
| 9/15/88 | -- | 16±12 | 51±30 |
| 9/15/88 | -- | 40±18 | 50±27 |
| 10/06/88 | 44.3 | 10±15 | 77±30 |
| 11/10/88 | 18.8 | 14±13 | 51±27 |
| 11/15/88 | 7.61 | 27±17 | 16±19 |
| 12/08/88 | 2.77 | 17 ± 10 | 41 ± 15 |
| 12/16/88 | 1.20 | 10 ± 11 | 36 ± 21 |
| 01/06/89 | 2.25 | -1 ± 7 | 21 ± 14 |

| Sample Date | Nitrate mg/l | Gross Alpha pCi/l | Gross Beta pCi/l |
|---|---|---|---|
| 01/26/89 | 16.5 | 13 ± 10 | 39 ± 16 |
| 2/24/89 | 27.9 | 16 ± 14 | 31 ± 17 |
| 3/08/89 | 46.4 | 2 ± 10 | 49 ± 19 |
| 3/21/89 | 16.7 | 53 ± 18 | 63 ± 21 |

# EBASCO SERVICES INCORPORATED

BY _____ DATE _____ SHEET ____ OF ____

DEPT NO _____

| | | | |
|---|---|---|---|
| 04/11/89 | 9.6 | 5 ± 9 | 22 ± 16 |
| 04/11/89 | 10.5 | 11 ± 11 | 27 ± 17 |
| 05/01/89 | 5.02 | 5 ± 12 | 44 ± 25 |

SUBJECT 904 PAD RUNOFF

| Sample Date | Nitrate mg/l | Gross Alpha pCi/l | Gross Beta pCi/l |
|---|---|---|---|
| 05/09/89 | 6.89 | 21 ± 17 | 69 ± 23 |
| 05/14/89 | 3.89 | 23 ± 15 | 12 ± 13 |
| 05/16/89 | 2.22 | 11 ± 12 | 8 ± 17 |
| 05/26/89 | 2.48 | 7 ± 10 | 21 ± 16 |
| 05/30/89 | 6.41 | 16 ± 14 | 43 ± 22 |
| 05/31/89 | 1.93 | 13 ± 13 | 36 ± 22 |
| 06/05/89 | 32.1 | 15 ± 14 | 57 ± 24 |
| 06/22/89 | 24.7 | 20 ± 15 | 100±30 |
| 07/01/89 | 7.68 | 18 ± 16 | 40 ± 21 |
| 08/01/89 | 26.1 | 11 ± 11 | 43 ± 18 |
| 08/07/89 | 13.0 | 27 ± 13 | 49 ± 19 |
| 08/08/89 | 9.74 | 20 ± 12 | 20 ± 17 |

| Sample Date | Nitrate mg/l | Gross Alpha pCi/l | Gross Beta pCi/l | Cyanide mg/l | Cadmium ug/l |
|---|---|---|---|---|---|
| 9/21/89* | 25.1 | 14 ± 13 | 55 ± 22 | <0.0025 | 9.2 |
| 10/16/89 | 5.80 | 10 ± 11 | 23 ± 19 | <0.005 | 4.6 |
| 10/17/89 | 7.73 | 0 ± 9 | 27 ± 19 | 0.029 | 9.6 |
| 11/1/89 | 7.90 | 7 ± 10 | 9 ± 17 | <2.5 | 6.7 |
| 11/29/89** | 13.6 | 5 ± 9 | 26 ± 13 | <0.004 | 10.2 |
| 12/07/89** | 10.4 | 9 ± 10 | 25 ± 19 | <0.003 | *** |
| 09/08/89 | 6.83 | 41 ± 19 | 72 ± 25 | | |
| 09/11/89 | 15.4 | 4 ± 11 | 44 ± 21 | | |
| 09/12/89 | 8.84 | 4 ± 11 | 16 ± 20 | | |
| 09/13/89 | 23.4 | 3 ± 9 | 53 ± 23 | | |

904 PAD RUNOFF

| Sample Date | NITRATE MG/l | GROSS ALPHA pCi/l | GROSS BETA pCi/l | CYANIDE mg/l | CADMIUM mg/l |
|---|---|---|---|---|---|
| 02/16/90 | 4.02 | 84±8 | 120±10 | <0.003 | 0.0142 |

* previously reported but without cyanide and cadmium results
** verbal data
*** data to be reported in next months letter

TABLE 3

SUMMARY OF SOIL CHEMICAL DATA AT AND
NEAR 904 PONDCRETE STORAGE AREA

| SAMPLE DATE | SAMPLE DESIGNATION 1) | Am-241 (pCi/gm) | Pu-239 (pCi/gm) | Pu (Total) (pCi/gm) | U (Total) | U-234 (pCi/gm) | U-238 (pCi/gm) | NO3-N (ppm) |
|---|---|---|---|---|---|---|---|---|
| | 87-903NW | | | | | | | |
| April 7, 1987 | 87-903NE | -- 2) | 0.03 | -- | -- | -- | -- | -- |
| | 87-903SW | -- | 1.8 | -- | -- | -- | -- | -- |
| | 87-903SE | -- | 0.12 | -- | -- | -- | -- | -- |
| | | -- | 4.2 | -- | -- | -- | -- | -- |
| | W-903-1 | | | | | | | |
| Aug./Sept. 1987 | W-903-1 | -- | 9.15+/-0.88 | -- | -- | -- | -- | -- |
| | W-903-2 | -- | 8.09+/-0.66 | -- | -- | -- | -- | -- |
| | W-903-2 | -- | Data Not Valid | -- | -- | -- | -- | -- |
| | W-903-3 | -- | 18.82+/-1.75 | -- | -- | -- | -- | -- |
| | W-903-3 | -- | 13.95+/-1.22 | -- | -- | -- | -- | -- |
| | W-903-4 | -- | 16.93+/-1.51 | -- | -- | -- | -- | -- |
| | W-903-4 | -- | 67.16+/-8.08 | -- | -- | -- | -- | -- |
| | | -- | 66.62+/-5.38 | -- | -- | -- | -- | -- |
| | 1 | | | | | | | |
| May 26, 1988 | 2 | -- | 0.24+/-0.0028 | -- | -- | 0.95+/-0.10 | 0.98+/-0.10 | 14 |
| | 3 | -- | 2.28+/-0.22 | -- | -- | 1.12+/-0.12 | 1.08+/-0.12 | 850 |
| | 4 | -- | -- | -- | -- | -- | -- | 7 |
| | 5 | -- | -- | -- | -- | -- | -- | 14 |
| | 6 | -- | 0.23+/0.022 | -- | -- | 0.72+/-0.08 | 0.67+/-0.07 | 8 |
| | | -- | 0.26+/-0.026 | -- | -- | 1.11+/-0.18 | 1.01+/-0.11 | 140 |
| October 24, 1988 | 1 | 0.14+/-0.01 3) | -- | 3.7+/-0.2 | 2.3 | -- | -- | -- |
| | 2 | 1.49+/-0.08 | -- | 2.8+/-0.2 | 1.9 | -- | -- | -- |
| | 3 | 23.9+/-1.03 | -- | 0.3+/-0.1 | 2.4 | -- | -- | -- |
| | 4 | 3.63+/-0.15 | -- | 0.2+/-0.1 | 2.7 | -- | -- | -- |
| | 5 | 0.23+/-0.01 | -- | 16+/-1 | 3.7 | -- | -- | -- |
| | 6 | 0.35+/-0.02 | -- | 34+/-1 | 3.1 | -- | -- | -- |
| | 7 | -- | -- | 4.0+/-0.2 | 3.4 | -- | -- | -- |
| | 8 | -- | -- | 3.3+/-0.1 | 4.0 | -- | -- | -- |
| | Reagent Blank | 0.23+/-0.03 | -- | -- | -- | -- | -- | -- |

1) Estimated Sample Locations Shown on Figure

2) -- No Analyses For Indicated Variable

3) Counting Error (+/-) at 95% Confience Interval Shown When Reported By Laboratory

# APPENDIX A-2

1990 Groundwater Quality Data
Present Landfill- Surficial Materials

| Well Id | Analyte Group | Analyte | Background Exceedance Value | Sample Date | Detection Limit | Concentration | Unit | Lab Qualifier |
|---|---|---|---|---|---|---|---|---|
| 0786 | Volatile Organics | METHYLENE CHLORIDE | 5 | 11/06/90 | 5 | 5 | UG/L | U |
| | | STYRENE | 5 | 05/01/90 | 5 | 5 | UG/L | U |
| | | STYRENE | 5 | 11/06/90 | 5 | 5 | UG/L | U |
| | | TETRACHLOROETHENE | 5 | 05/01/90 | 5 | 5 | UG/L | U |
| | | TETRACHLOROETHENE | 5 | 11/06/90 | 5 | 5 | UG/L | U |
| | | TOLUENE | 5 | 11/06/90 | 5 | 5 | UG/L | U |
| | | TOTAL XYLENES | 5 | 05/01/90 | 5 | 5 | UG/L | U |
| | | TOTAL XYLENES | 5 | 11/06/90 | 5 | 5 | UG/L | U |
| | | TRICHLOROETHENE | 5 | 05/01/90 | 5 | 5 | UG/L | U |
| | | TRICHLOROETHENE | 5 | 11/06/90 | 5 | 5 | UG/L | U |
| | | VINYL ACETATE | 10 | 05/01/90 | 10 | 10 | UG/L | U |
| | | VINYL ACETATE | 10 | 11/06/90 | 10 | 10 | UG/L | U |
| | | VINYL CHLORIDE | 10 | 11/06/90 | 10 | 10 | UG/L | U |
| | | cis-1,3-DICHLOROPROPENE | 5 | 11/06/90 | 5 | 5 | UG/L | U |
| | | trans-1,3-DICHLOROPROPENE | 5 | 05/01/90 | 5 | 5 | UG/L | U |
| | | trans-1,3-DICHLOROPROPENE | 5 | 11/06/90 | 5 | 5 | UG/L | U |
| 1086 | Inorganics | CARBONATE | 5 | 01/26/90 | | 5 | MG/L | U |
| | | CARBONATE | 5 | 04/27/90 | 10 | 10 | MG/L | U |
| | | CARBONATE, HYDROGEN | 249 35 | 01/26/90 | | 41 | MG/L | |
| | | CARBONATE, HYDROGEN | 249 35 | 04/27/90 | 10 | 21 | MG/L | |
| | | CARBONATE, HYDROGEN | 249 35 | 09/24/90 | 1 0 | 22 | MG/L | |
| | | CHLORIDE (North) | 10 67 | 01/26/90 | | 5 | MG/L | |
| | | CHLORIDE (North) | 10 67 | 04/27/90 | 5 | 5 | MG/L | U |
| | | CHLORIDE (North) | 10 67 | 09/24/90 | | 5 4 | MG/L | |
| | | CYANIDE | 0 01 | 01/26/90 | 10 | 10 0 | UG/L | U |
| | | CYANIDE | 0 01 | 04/27/90 | 20 | 20 | UG/L | U |
| | | FLUORIDE | 0 1 | 01/26/90 | | 0 5 | MG/L | U |
| | | FLUORIDE | 0 1 | 04/27/90 | | 0.39 | MG/L | |
| | | FLUORIDE | 0 1 | 09/24/90 | | 0 2 | MG/L | |
| | | NITRATE/NITRITE | 3 43 | 01/26/90 | | 4 3 | MG/L | |
| | | NITRATE/NITRITE | 3 43 | 04/27/90 | | 1.5 | MG/L | |
| | | NITRATE/NITRITE | 3 43 | 09/24/90 | | 3 6 | MG/L | |
| | | NITRATE/NITRITE | 3 43 | 11/15/90 | | 3.3 | MG/L | |
| | | NITRATE/NITRITE | 3 43 | 11/15/90 | | 4.2 | MG/L | |
| | | NITRATE/NITRITE | 3 43 | 11/15/90 | | 0 02 | MG/L | U |
| | | NITRATE/NITRITE | 3.43 | 11/15/90 | | 0.02 | MG/L | U |
| | | NITRATE/NITRITE | 3 43 | 11/16/90 | | 4.1 | MG/L | |
| | | NITRITE | | 04/27/90 | | 0 02 | MG/L | U |
| | | NITRITE | | 09/24/90 | | 0.02 | MG/L | U |
| | | PH | 8.22 | 01/26/90 | | 6.6 | PHUNIT | |
| | | PHOSPHATE | | 04/27/90 | | 0 091 | MG/L | |
| | | PHOSPHATE | | 09/24/90 | | 0 03 | MG/L | |
| | | SILICA, DISSOLVED | | 09/24/90 | | 11 | MG/L | |
| | | SULFATE | 67 08 | 01/26/90 | | 16 | MG/L | |
| | | SULFATE | 67.08 | 04/27/90 | 10 | 32 4 | MG/L | |
| | | SULFATE | 67.08 | 09/24/90 | 2.0 | 28 | MG/L | |

1990 Groundwater Quality Data
Present Landfill- Surficial Materials

| Well Id | Analyte Group | Analyte | Background Exceedance Value | Sample Date | Detection Limit | Concentration | Unit | Lab Qualifier |
|---|---|---|---|---|---|---|---|---|
| 1086 | Inorganics | TOTAL DISSOLVED SOLIDS | 388.76 | 01/26/90 | | 130 | MG/L | |
| | | TOTAL DISSOLVED SOLIDS | 388.76 | 04/27/90 | 10 | 90 | MG/L | |
| | | TOTAL DISSOLVED SOLIDS | 388.76 | 09/24/90 | 10.0 | 130 | MG/L | |
| | | TOTAL SUSPENDED SOLIDS | 5 | 04/27/90 | 5 | 320 | MG/L | |
| | | TOTAL SUSPENDED SOLIDS | 4.0 | 09/24/90 | 4.0 | 34 | MG/L | |
| 1086 | Total Metals | CYANIDE | 0.01 | 09/24/90 | 10 | 1.50 | UG/L | U |
| 1086 | Dissolved Metals | ALUMINUM | 0.327 | 01/26/90 | 200 | 84.0 | UG/L | U |
| | | ALUMINUM | 0.327 | 04/27/90 | 22 1 | 22 1 | UG/L | U |
| | | ALUMINUM | 0.327 | 09/24/90 | 200 | 10 00 | UG/L | U |
| | | ANTIMONY | 0.5 | 01/26/90 | 60 | 35.7 | UG/L | U |
| | | ANTIMONY | 0.5 | 04/27/90 | 17.6 | 17.6 | UG/L | U |
| | | ANTIMONY | 0.5 | 09/24/90 | 60 | 10 10 | UG/L | B |
| | | ARSENIC | 0.01 | 01/26/90 | 10 | 2.0 | UG/L | U |
| | | ARSENIC | 0 01 | 04/27/90 | 2 1 | 1 6 | UG/L | U |
| | | ARSENIC | 0 01 | 04/27/90 | 2.1 | 2 1 | UG/L | U |
| | | ARSENIC | 0.01 | 09/24/90 | 10 | 1.00 | UG/L | U |
| | | BARIUM | 0.2 | 01/26/90 | 200 | 48 2 | UG/L | |
| | | BARIUM | 0 2 | 04/27/90 | 5 4 | 27 1 | UG/L | |
| | | BARIUM | 0 2 | 09/24/90 | 200 | 38 70 | UG/L | B |
| | | BERYLLIUM | 0 005 | 01/26/90 | 5 | 1 0 | UG/L | U |
| | | BERYLLIUM | 0 005 | 04/27/90 | 2.6 | 2 6 | UG/L | U |
| | | BERYLLIUM | 0 005 | 09/24/90 | 5 | 1 00 | UG/L | U |
| | | CADMIUM | 0 011 | 01/26/90 | 5 | 3 0 | UG/L | U |
| | | CADMIUM | 0 011 | 04/27/90 | 3 6 | 3 6 | UG/L | U |
| | | CADMIUM | 0 011 | 09/24/90 | 5 | 2 00 | UG/L | U |
| | | CALCIUM | 62 59 | 01/26/90 | 5000 | 15500 | UG/L | |
| | | CALCIUM | 62 59 | 04/27/90 | 28 8 | 11400 | UG/L | |
| | | CALCIUM | 62 59 | 09/24/90 | 5000 | 13900 00 | UG/L | |
| | | CESIUM | 2.5 | 01/26/90 | 1000 | 2500 | UG/L | U |
| | | CESIUM | 2 5 | 04/27/90 | 1000 | 1000 | UG/L | U |
| | | CESIUM | 2.5 | 09/24/90 | 1000 | 92.00 | UG/L | U |
| | | CHROMIUM | 0.02 | 01/26/90 | 10 | 2.0 | UG/L | U |
| | | CHROMIUM | 0 02 | 04/27/90 | 4 9 | 4 9 | UG/L | U |
| | | CHROMIUM | 0.02 | 09/24/90 | 10 | 5.00 | UG/L | U |
| | | COBALT | 0 05 | 01/26/90 | 50 | 4.0 | UG/L | U |
| | | COBALT | 0 05 | 04/27/90 | 4 4 | 4.4 | UG/L | U |
| | | COBALT | 0.05 | 09/24/90 | 50 | 3.00 | UG/L | U |
| | | COPPER | 0 048 | 01/26/90 | 25 | 5.7 | UG/L | |
| | | COPPER | 0.048 | 04/27/90 | 2.5 | 13 1 | UG/L | |
| | | COPPER | 0.048 | 04/27/90 | 2.5 | 13.1 | UG/L | U |
| | | COPPER | 0 048 | 09/24/90 | 25 | 2.00 | UG/L | U |
| | | IRON | 0.944 | 01/26/90 | 100 | 44 0 | UG/L | U |
| | | IRON | 0 944 | 04/27/90 | 16.7 | 56 3 | UG/L | |
| | | IRON | 0.944 | 04/27/90 | 16 7 | 56 3 | UG/L | U |
| | | IRON | 0 944 | 09/24/90 | 100 | 14 20 | UG/L | B |
| | | LEAD | 0.040 | 01/26/90 | 5 | 3.0 | UG/L | U |

1990 Groundwater Quality Data
Present Landfill- Surficial Materials

| Well Id | Analyte Group | Analyte | Background Exceedance Value | Sample Date | Detection Limit | Concentration | Unit | Lab Qualifier |
|---|---|---|---|---|---|---|---|---|
| 1086 | Dissolved Metals | LEAD | 0.040 | 04/27/90 | 1.6 | 1.6 | UG/L | U |
| | | LEAD | 0.040 | 09/24/90 | 3 | 1 00 | UG/L | U |
| | | LITHIUM | 1.79 | 01/26/90 | 100 | 100 | UG/L | U |
| | | LITHIUM | 1.79 | 04/27/90 | 49.9 | 2.5 | UG/L | |
| | | LITHIUM | 1.79 | 04/27/90 | 49.9 | 49.9 | UG/L | U |
| | | LITHIUM | 1.79 | 09/24/90 | 100 | 1.00 | UG/L | U |
| | | MAGNESIUM | 16.09 | 01/26/90 | 5000 | 3330 | UG/L | |
| | | MAGNESIUM | 16 09 | 04/27/90 | 19 4 | 2420 | UG/L | |
| | | MAGNESIUM | 16 09 | 09/24/90 | 5000 | 2990.00 | UG/L | B |
| | | MANGANESE | 0.213 | 01/26/90 | 15 | 12 0 | UG/L | |
| | | MANGANESE | 0.213 | 04/27/90 | 1 | 4 8 | UG/L | |
| | | MANGANESE | 0.213 | 09/24/90 | 15 | 15.00 | UG/L | |
| | | MERCURY | 0 0008 | 01/26/90 | | 0.2 | UG/L | U |
| | | MERCURY | 0.0008 | 04/27/90 | | 0.2 | UG/L | U |
| | | MERCURY | 0 0008 | 09/24/90 | 0 | 0 20 | UG/L | U |
| | | MOLYBDENUM | 0 5 | 01/26/90 | 200 | 100 | UG/L | U |
| | | MOLYBDENUM | 0 5 | 04/27/90 | 17.4 | 17.4 | UG/L | U |
| | | MOLYBDENUM | 0 5 | 09/24/90 | 200 | 3 70 | UG/L | B |
| | | NICKEL | 0 043 | 01/26/90 | 40 | 7 0 | UG/L | U |
| | | NICKEL | 0 043 | 04/27/90 | 5.5 | 5 5 | UG/L | U |
| | | NICKEL | 0 043 | 09/24/90 | 40 | 4.50 | UG/L | B |
| | | POTASSIUM | 11.3 | 01/26/90 | 5000 | 1240 | UG/L | U |
| | | POTASSIUM | 11.3 | 04/27/90 | 49 9 | 231 | UG/L | |
| | | POTASSIUM | 11 3 | 09/24/90 | 5000 | 370 00 | UG/L | B |
| | | SELENIUM | 0 221 | 01/26/90 | 5 | 2 0 | UG/L | U |
| | | SELENIUM | 0 221 | 04/27/90 | 1 5 | 1 2 | UG/L | U |
| | | SELENIUM | 0.221 | 04/27/90 | 1.5 | 1.5 | UG/L | U |
| | | SELENIUM | 0 221 | 09/24/90 | 5 | 1.00 | UG/L | U |
| | | SILICON | 100 | 04/27/90 | 100 | 7070 | UG/L | |
| | | SILVER | 0 004 | 01/26/90 | 10 | 3 5 | UG/L | U |
| | | SILVER | 0 004 | 04/27/90 | 4 4 | 4.4 | UG/L | U |
| | | SILVER | 0 004 | 09/24/90 | 10 | 3.00 | UG/L | U |
| | | SODIUM | 46 74 | 01/26/90 | 5000 | 10700 | UG/L | |
| | | SODIUM | 46 74 | 04/27/90 | 30 4 | 8460 | UG/L | |
| | | SODIUM | 46 74 | 09/24/90 | 5000 | 9410.00 | UG/L | |
| | | STRONTIUM | 7 12 | 01/26/90 | 200 | 100 | UG/L | U |
| | | STRONTIUM | 7.12 | 04/27/90 | | 64 7 | UG/L | |
| | | STRONTIUM | 7.12 | 09/24/90 | 200 | 76.90 | UG/L | B |
| | | THALLIUM | 1 | 01/26/90 | 10 | 4 0 | UG/L | U |
| | | THALLIUM | 1 | 04/27/90 | 1.1 | 1 1 | UG/L | U |
| | | THALLIUM | 1 | 09/24/90 | 10 | 2.00 | UG/L | U |
| | | TIN | 1 | 01/26/90 | 200 | 100 | UG/L | U |
| | | TIN | 1 | 04/27/90 | 23.2 | 23.2 | UG/L | U |
| | | TIN | 1 | 09/24/90 | 200 | 26 30 | UG/L | B |
| | | VANADIUM | 0.05 | 01/26/90 | 50 | 9.0 | UG/L | U |
| | | VANADIUM | 0.05 | 04/27/90 | 2 3 | 2 3 | UG/L | U |

1990 Groundwater Quality Data
Present Landfill- Surficial Materials

| Well Id | Analyte Group | Analyte | Background Exceedance Value | Sample Date | Detection Limit | Concentration | Unit | Lab Qualifier |
|---|---|---|---|---|---|---|---|---|
| 1086 | Dissolved Metals | VANADIUM | 0.05 | 09/24/90 | 50 | 2.00 | UG/L | U |
| | | ZINC | 0 141 | 01/26/90 | 20 | 77.1 | UG/L | |
| | | ZINC | 0.141 | 04/27/90 | 9 | 9 | UG/L | U |
| | | ZINC | 0.141 | 04/27/90 | 9 | 9.0 | UG/L | U |
| | | ZINC | 0.141 | 09/24/90 | 20 | 11.10 | UG/L | B |
| 1086 | Diss. Radionuclides | AMERICIUM-241 | 0.0167 | 01/26/90 | | 0.013 | PCI/L | |
| | | CESIUM-137 | 0.506 | 01/26/90 | | 0.28 | PCI/L | |
| | | GROSS ALPHA - PARTICULATE | 55.07 | 01/26/90 | | 1.2 | PCI/L | |
| | | GROSS BETA - PARTICULATE | 59.63 | 01/26/90 | 2.8 | -0.2 | PCI/L | |
| | | PLUTONIUM-239,240 | 0.015 | 01/26/90 | | 0.011 | PCI/L | |
| | | STRONTIUM-90 | | 01/26/90 | | 0.13 | PCI/L | |
| | | TRITIUM | 359.07 | 01/26/90 | 240 | 120 | PCI/L | |
| | | URANIUM-233,234 | 0 1+/-.1 | 01/26/90 | | 0 06 | PCI/L | |
| | | URANIUM-235 | 2 09 | 01/26/90 | | 0 06 | PCI/L | |
| | | URANIUM 238 | 25.57 | 01/26/90 | | 0 06 | PCI/L | |
| 1086 | Volatile Organics | 1,1,1-TRICHLOROETHANE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | 1,1,1-TRICHLOROETHANE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | 1,1,1-TRICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,1-TRICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,1-TRICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,1-TRICHLOROETHANE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | 1,1,2-TRICHLOROETHANE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | 1,1,2-TRICHLOROETHANE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | 1,1,2-TRICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,2-TRICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,2-TRICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1,2-TRICHLOROETHANE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHANE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHANE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHANE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,1-DICHLOROETHENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHANE | 5 | 04/27/90 | 5 | 5 | UG/L | U |

1990 Groundwater Quality Data
Present Landfill- Surficial Materials

| Well Id | Analyte Group | Analyte | Background Exceedance Value | Sample Date | Detection Limit | Concentration | Unit | Lab Qualifier |
|---|---|---|---|---|---|---|---|---|
| 1086 | Volatile Organics | 1,2-DICHLOROETHANE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHANE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHENE (Total) | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHENE (Total) | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHENE (Total) | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHENE (Total) | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHENE (Total) | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHYLENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROETHYLENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROPROPANE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROPROPANE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROPROPANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROPROPANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROPROPANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | 1,2-DICHLOROPROPANE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | 2-BUTANONE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | 2-BUTANONE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | 2-BUTANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 2-BUTANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 2-BUTANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 2-BUTANONE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | 2-HEXANONE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | 2-HEXANONE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | 2-HEXANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 2-HEXANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 2-HEXANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 2-HEXANONE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | 4-METHYL-2-PENTANONE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | 4-METHYL-2-PENTANONE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | 4-METHYL-2-PENTANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 4-METHYL-2-PENTANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 4-METHYL-2-PENTANONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | 4-METHYL-2-PENTANONE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | ACETONE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | ACETONE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | ACETONE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | ACETONE | 10 | 11/15/90 | 10 | 42 | UG/L | |
| | | ACETONE | 10 | 11/15/90 | 10 | 11 | UG/L | |
| | | ACETONE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | BENZENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | BENZENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | BENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | BENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |

1990 Groundwater Quality Data
Present Landfill- Surficial Materials

| Well Id | Analyte Group | Analyte | Background Exceedance Value | Sample Date | Detection Limit | Concentration | Unit | Lab Qualifier |
|---|---|---|---|---|---|---|---|---|
| 1086 | Volatile Organics | BENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | BENZENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | BROMODICHLOROMETHANE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | BROMODICHLOROMETHANE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | BROMODICHLOROMETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | BROMODICHLOROMETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | BROMODICHLOROMETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | BROMODICHLOROMETHANE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | BROMOFORM | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | BROMOFORM | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | BROMOFORM | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | BROMOFORM | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | BROMOFORM | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | BROMOFORM | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | BROMOMETHANE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | BROMOMETHANE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | BROMOMETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | BROMOMETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | BROMOMETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | BROMOMETHANE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | CARBON DISULFIDE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | CARBON DISULFIDE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | CARBON DISULFIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CARBON DISULFIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CARBON DISULFIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CARBON DISULFIDE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | CARBON TETRACHLORIDE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | CARBON TETRACHLORIDE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | CARBON TETRACHLORIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CARBON TETRACHLORIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CARBON TETRACHLORIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CARBON TETRACHLORIDE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | CHLOROBENZENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | CHLOROBENZENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | CHLOROBENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CHLOROBENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CHLOROBENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CHLOROBENZENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | CHLOROETHANE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | CHLOROETHANE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | CHLOROETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | CHLOROETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | CHLOROETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | CHLOROETHANE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | CHLOROFORM | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | CHLOROFORM | 5 | 09/24/90 | 5 | 5 | UG/L | U |

1990 Groundwater Quality Data
Present Landfill- Surficial Materials

| Well Id | Analyte Group | Analyte | Background Exceedance Value | Sample Date | Detection Limit | Concentration | Unit | Lab Qualifier |
|---|---|---|---|---|---|---|---|---|
| 1086 | Volatile Organics | CHLOROFORM | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CHLOROFORM | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CHLOROFORM | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | CHLOROFORM | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | CHLOROMETHANE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | CHLOROMETHANE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | CHLOROMETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | CHLOROMETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | CHLOROMETHANE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | CHLOROMETHANE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | DIBROMOCHLOROMETHANE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | DIBROMOCHLOROMETHANE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | DIBROMOCHLOROMETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | DIBROMOCHLOROMETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | DIBROMOCHLOROMETHANE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | DIBROMOCHLOROMETHANE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | ETHYLBENZENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | ETHYLBENZENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | ETHYLBENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | ETHYLBENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | ETHYLBENZENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | ETHYLBENZENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | METHYLENE CHLORIDE | 5 | 04/27/90 | 5 | 22 | UG/L | |
| | | METHYLENE CHLORIDE | 5 | 09/24/90 | 5 | 1 | UG/L | J |
| | | METHYLENE CHLORIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | METHYLENE CHLORIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | METHYLENE CHLORIDE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | METHYLENE CHLORIDE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | STYRENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | STYRENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | STYRENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | STYRENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | STYRENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | STYRENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | TETRACHLOROETHENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | TETRACHLOROETHENE | 5 | 09/24/90 | 5 | 1 | UG/L | J |
| | | TETRACHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TETRACHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TETRACHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TETRACHLOROETHENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | TOLUENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | TOLUENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | TOLUENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TOLUENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TOLUENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TOLUENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |

1990 Groundwater Quality Data
Present Landfill- Surficial Materials

| Well Id | Analyte Group | Analyte | Background Exceedance Value | Sample Date | Detection Limit | Concentration | Unit | Lab Qualifier |
|---|---|---|---|---|---|---|---|---|
| 1086 | Volatile Organics | *TOTAL XYLENES | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | TOTAL XYLENES | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | TRICHLOROETHENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | TRICHLOROETHENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | TRICHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TRICHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TRICHLOROETHENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | TRICHLOROETHENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | VINYL ACETATE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | VINYL ACETATE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | VINYL ACETATE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | VINYL ACETATE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | VINYL ACETATE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | VINYL ACETATE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | VINYL CHLORIDE | 10 | 04/27/90 | 10 | 10 | UG/L | U |
| | | VINYL CHLORIDE | 10 | 09/24/90 | 10 | 10 | UG/L | U |
| | | VINYL CHLORIDE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | VINYL CHLORIDE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | VINYL CHLORIDE | 10 | 11/15/90 | 10 | 10 | UG/L | U |
| | | VINYL CHLORIDE | 10 | 11/16/90 | 10 | 10 | UG/L | U |
| | | XYLENES (TOTAL) | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | XYLENES (TOTAL) | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | XYLENES (TOTAL) | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | XYLENES (TOTAL) | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | XYLENES (TOTAL) | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | cis-1,3-DICHLOROPROPENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | cis-1,3-DICHLOROPROPENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | cis-1,3-DICHLOROPROPENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | cis-1,3-DICHLOROPROPENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | cis-1,3-DICHLOROPROPENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | cis-1,3-DICHLOROPROPENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| | | trans-1,3-DICHLOROPROPENE | 5 | 04/27/90 | 5 | 5 | UG/L | U |
| | | trans-1,3-DICHLOROPROPENE | 5 | 09/24/90 | 5 | 5 | UG/L | U |
| | | trans-1,3-DICHLOROPROPENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | trans-1,3-DICHLOROPROPENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | trans-1,3-DICHLOROPROPENE | 5 | 11/15/90 | 5 | 5 | UG/L | U |
| | | trans-1,3-DICHLOROPROPENE | 5 | 11/16/90 | 5 | 5 | UG/L | U |
| 4087 | Volatile Organics | 1,1,1-TRICHLOROETHANE | 5 | 06/05/90 | 5 | 5 | UG/L | U |
| | | 1,1,1-TRICHLOROETHANE | 5 | 08/16/90 | 5 | 5 | UG/L | |
| | | 1,1,1-TRICHLOROETHANE | 5 | 08/16/90 | 5 | 5 | UG/L | U |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 06/05/90 | 5 | 5 | UG/L | U |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 08/16/90 | 5 | 5 | UG/L | |
| | | 1,1,2,2-TETRACHLOROETHANE | 5 | 08/16/90 | 5 | 5 | UG/L | U |
| | | 1,1,2-TRICHLOROETHANE | 5 | 06/05/90 | 5 | 5 | UG/L | U |
| | | 1,1,2-TRICHLOROETHANE | 5 | 08/16/90 | 5 | 5 | UG/L | |
| | | 1,1,2-TRICHLOROETHANE | 5 | 08/16/90 | 5 | 5 | UG/L | U |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 0187 | 1-87-02-11-88 | AMERICIUM-241 | 0 03 | PCI/L | | | N | 11-FEB-88 |
| 0187 | G01870689001 | BARIUM | .264 | MG/L | V | 200 | A | 06-JUN-89 |
| 0187 | G01870889002 | BARIUM | .244 | MG/L | V | 200 | A | 17-AUG-89 |
| 0187 | G-0187-0502-02-13 | BARIUM | 246 | UG/L | | 200 | | 02-MAY-90 |
| 0187 | GW00093IT | BARIUM | 281 | UG/L | | 200 | | 26-JUL-90 |
| 0187 | G01870889002 | BICARBONATE | 600 | MG/L | V | | | 17-AUG-89 |
| 0187 | G01870290001 | BICARBONATE | 630 | MG/L | | | | 06-FEB-90 |
| 0187 | G-0187-0502-02-13 | BICARBONATE AS CACO3 | 544 | MG/L | | 2 | | 02-MAY-90 |
| 0187 | GW00093IT | BICARBONATE AS CACO3 | 600 | MG/L | | 1 | | 26-JUL-90 |
| 0187 | GW00506IT | BICARBONATE AS CACO3 | 420 | MG/L | | 1 | | 16-OCT-90 |
| 0187 | G01870689001 | CALCIUM | 162.00 | MG/L | V | 5000 | A | 06-JUN-89 |
| 0187 | G01870889002 | CALCIUM | 144 00 | MG/L | V | 5000 | A | 17-AUG-89 |
| 0187 | G-0187-0502-02-13 | CALCIUM | 136000 | UG/L | | 5000 | | 02-MAY-90 |
| 0187 | GW00093IT | CALCIUM | 150000 | UG/L | | 5000 | | 26-JUL-90 |
| 0187 | G01870689001 | IRON | 5.82 | MG/L | V | 100 | A | 06-JUN-89 |
| 0187 | G01870889002 | IRON | 2 19 | MG/L | V | 100 | A | 17-AUG-89 |
| 0187 | G-0187-0502-02-13 | IRON | 1440 | UG/L | | 100 | | 02-MAY-90 |
| 0187 | GW00093IT | IRON | 1060 | UG/L | | 100 | | 26-JUL-90 |
| 0187 | G01870689001 | MAGNESIUM | 40 10 | MG/L | V | 5000 | A | 06-JUN-89 |
| 0187 | G01870889002 | MAGNESIUM | 36 40 | MG/L | V | 5000 | A | 17-AUG-89 |
| 0187 | G-0187-0502-02-13 | MAGNESIUM | 36900 | UG/L | | 5000 | | 02-MAY-90 |
| 0187 | GW00093IT | MAGNESIUM | 41000 | UG/L | | 5000 | | 26-JUL-90 |
| 0187 | G01870689001 | MANGANESE | 3.33 | MG/L | V | 15 0 | A | 06-JUN-89 |
| 0187 | G01870889002 | MANGANESE | 1.73 | MG/L | V | 15 0 | A | 17-AUG-89 |
| 0187 | G-0187-0502-02-13 | MANGANESE | 941 | UG/L | | 15 | | 02-MAY-90 |
| 0187 | GW00093IT | MANGANESE | 1190 | UG/L | | 15 | | 26-JUL-90 |
| 0187 | G-0187-0502-02-13 | NICKEL | 370 | UG/L | | 40 | | 02-MAY-90 |
| 0187 | GW00093IT | NICKEL | 229 | UG/L | | 40 | | 26-JUL-90 |
| 0187 | GW00093IT | SELENIUM | 5 6 | UG/L | | 5 | | 26-JUL-90 |
| 0187 | G01870689001 | SODIUM | 101.00 | MG/L | V | 5000 | A | 06-JUN-89 |
| 0187 | G01870889002 | SODIUM | 91.30 | MG/L | V | 5000 | A | 17-AUG-89 |
| 0187 | G-0187-0502-02-13 | SODIUM | 116000 | UG/L | | 5000 | | 02-MAY-90 |
| 0187 | GW00093IT | SODIUM | 117000 | UG/L | | 5000 | | 26-JUL-90 |
| 0187 | G-0187-0502-02-13 | STRONTIUM | 923 | UG/L | | 100 | | 02-MAY-90 |
| 0187 | GW00093IT | STRONTIUM | 993 | UG/L | | 200 | | 26-JUL-90 |
| 0187 | G01870889002 | SULFATE | 120 | MG/L | V | | | 17-AUG-89 |
| 0187 | G01870290001 | SULFATE | 96 | MG/L | | | | 06-FEB-90 |
| 0187 | G-0187-0502-02-13 | SULFATE | 113 | MG/L | | 25 | | 02-MAY-90 |
| 0187 | GW00093IT | SULFATE | 110 | MG/L | | 0.2 | | 26-JUL-90 |
| 0187 | GW00506IT | SULFATE | 100 | MG/L | | 40 | | 16-OCT-90 |
| 0187 | 1-87-02-11-88 | URANIUM-233,-234 | 8 4 | PCI/L | | | N | 11-FEB-88 |
| 0187 | G10870689001 | URANIUM-233,-234 | 12 | PCI/L | | | | 08-JUN-89 |
| 0187 | GW00093IT | URANIUM-233,-234 | 14 74 | PCI/L | | .6 | | 26-JUL-90 |
| 0187 | GW00506IT | URANIUM-233,-234 | 9 697 | PCI/L | | .6 | | 16-OCT-90 |
| 0187 | G-0187-0502-02-13 | ZINC | 260 | UG/L | | 20 | | 02-MAY-90 |
| 0187 | GW00093IT | ZINC | 126 | UG/L | | 20 | | 26-JUL-90 |
| 0460 | 4-60-09-07-88 | AMERICIUM-241 | 0.02 | PCI/L | | | | 07-SEP-88 |
| 0460 | 4-60-09-07-88 | AMERICIUM-241 | 0 02 | PCI/L | | | N | 07-SEP-88 |
| 0460 | 4-60-12-06-88 | AMERICIUM-241 | 0 08 | PCI/L | | | | 06-DEC-88 |
| 0460 | 4-60-12-06-88 | AMERICIUM-241 | 0 08 | PCI/L | | | N | 06-DEC-88 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 0460 | GW00474IT | AMERICIUM-241 | .02125 | PCI/L | | .01 | | 01-NOV-90 |
| 0460 | G046009860 | AMERICIUM-241 | 0 02 | PCI/L | | | N | |
| 0460 | 4-60-06-25-87 | BICARBONATE | 288 | MG/L | | 1.0 | | 25-JUN-87 |
| 0460 | 4-60-09-18-87 | BICARBONATE | 297 | MG/L | | 1.0 | | 18-SEP-87 |
| 0460 | 4-60-01-05-88 | BICARBONATE | 287 | MG/L | | | | 05-JAN-88 |
| 0460 | 4-60-12-02-88 | BICARBONATE | 259 | MG/L | A | | | 02-DEC-88 |
| 0460 | 4-60-02-28-89 | BICARBONATE | 284 | MG/L | A | | | 28-FEB-89 |
| 0460 | 4-60-09-01-89 | BICARBONATE | 257 | MG/L | | | | 01-SEP-89 |
| 0460 | G-0460-0511-02-09 | BICARBONATE AS CACO3 | 258 | MG/L | | 2 | | 11-MAY-90 |
| 0460 | GW00062IT | BICARBONATE AS CACO3 | 290 | MG/L | | 1.0 | | 20-AUG-90 |
| 0460 | GW00474IT | BICARBONATE AS CACO3 | 300 | MG/L | | 1.0 | | 01-NOV-90 |
| 0460 | GW01205IT | BICARBONATE AS CACO3 | 330 | MG/L | | 1.0 | | 24-APR-91 |
| 0460 | GW01394IT | BICARBONATE AS CACO3 | 310 | MG/L | | 1.0 | | 10-JUN-91 |
| 0460 | 4-60-06-25-87 | CALCIUM | 128.4591 | MG/L | | 0.750 | N | 25-JUN-87 |
| 0460 | 4-60D-09-18-87 | CALCIUM | 94 0216 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60-09-18-87 | CALCIUM | 93.5126 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60-01-06-88 | CALCIUM | 70 7574 | MG/L | | | N | 06-JAN-88 |
| 0460 | 4-60-03-17-88 | CALCIUM | 67.3504 | MG/L | | | N | 17-MAR-88 |
| 0460 | 4-60-05-18-88 | CALCIUM | 63.4253 | MG/L | | | N | 18-MAY-88 |
| 0460 | 4-60-09-07-88 | CALCIUM | 75.2725 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-09-07-88-FD | CALCIUM | 75.4877 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-12-02-88 | CALCIUM | 92.4241 | MG/L | | | N | 02-DEC-88 |
| 0460 | 4-60-02-28-89 | CALCIUM | 67 9451 | MG/L | | | | 28-FEB-89 |
| 0460 | 4-60-05-16-89 | CALCIUM | 66 8189 | MG/L | | | | 16-MAY-89 |
| 0460 | G04601189004 | CALCIUM | 84.00 | MG/L | | 5000 | | 15-NOV-89 |
| 0460 | G-0460-0511-02-09 | CALCIUM | 83800 | UG/L | | 5000 | | 11-MAY-90 |
| 0460 | GW00062IT | CALCIUM | 93500.00 | UG/L | E | 5000 | | 20-AUG-90 |
| 0460 | GW00474IT | CALCIUM | 116000.00 | UG/L | | 5000 | | 01-NOV-90 |
| 0460 | GW01205IT | CALCIUM | 119000 00 | UG/L | | 5000 | | 24-APR-91 |
| 0460 | GW01394IT | CALCIUM | 105000 00 | UG/L | | 5000 | | 10-JUN-91 |
| 0460 | G046009860 | CALCIUM | 171 | MG/L | | | N | |
| 0460 | G046009860 | CARBONATE | 350 | MG/L | | | | |
| 0460 | GW00062IT | CHROMIUM | 12.80 | UG/L | | 10 | | 20-AUG-90 |
| 0460 | GW00474IT | CHROMIUM | 15.90 | UG/L | | 10 | | 01-NOV-90 |
| 0460 | G046009860 | COBALT | 0.120 | MG/L | | | N | |
| 0460 | 4-60-06-25-87 | GROSS ALPHA PARTICLE | 62 | PCI/L | | | N | 25-JUN-87 |
| 0460 | 4-60-09-18-87 | GROSS ALPHA PARTICLE | 60 | PCI/L | | | N | 18-SEP-87 |
| 0460 | 4-60-09-18-87 | GROSS BETA PARTICLE | 61 | PCI/L | | 71 | N | 18-SEP-87 |
| 0460 | GW00474IT | IRON | 133.00 | UG/L | | 100 | | 01-NOV-90 |
| 0460 | G-0460-0511-02-09 | LEAD | 3.7 | UG/L | | 3 | | 11-MAY-90 |
| 0460 | GW00474IT | LITHIUM | 100 00 | UG/L | E | 100 | | 01-NOV-90 |
| 0460 | 4-60-03-19-87 | MAGNESIUM | 17.5236 | MG/L | | | N | 19-MAR-87 |
| 0460 | 4-60-06-25-87 | MAGNESIUM | 49.0631 | MG/L | | 0.020 | N | 25-JUN-87 |
| 0460 | 4-60-09-18-87 | MAGNESIUM | 40.2322 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60D-09-18-87 | MAGNESIUM | 39.1979 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60-01-06-88 | MAGNESIUM | 30.6871 | MG/L | | | N | 06-JAN-88 |
| 0460 | 4-60-03-17-88 | MAGNESIUM | 27.2724 | MG/L | | | N | 17-MAR-88 |
| 0460 | 4-60-05-18-88 | MAGNESIUM | 25.0846 | MG/L | | | N | 18-MAY-88 |
| 0460 | 4-60-09-07-88 | MAGNESIUM | 30 5758 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-09-07-88-FD | MAGNESIUM | 30.5474 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-12-02-88 | MAGNESIUM | 35.3234 | MG/L | | | N | 02-DEC-88 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 0460 | 4-60-02-28-89 | MAGNESIUM | 27.3342 | MG/L | | | | 28-FEB-89 |
| 0460 | 4-60-05-16-89 | MAGNESIUM | 21.6630 | MG/L | | | | 16-MAY-89 |
| 0460 | G04601189004 | MAGNESIUM | 34.90 | MG/L | | 5000 | | 15-NOV-89 |
| 0460 | G-0460-0511-02-09 | MAGNESIUM | 30000 | UG/L | | 5000 | | 11-MAY-90 |
| 0460 | GW00062IT | MAGNESIUM | 38200 00 | UG/L | E | 5000 | | 20-AUG-90 |
| 0460 | GW00474IT | MAGNESIUM | 47200.00 | UG/L | | 5000 | | 01-NOV-90 |
| 0460 | GW01205IT | MAGNESIUM | 49100.00 | UG/L | | 5000 | | 24-APR-91 |
| 0460 | GW01394IT | MAGNESIUM | 39200.00 | UG/L | | 5000 | | 10-JUN-91 |
| 0460 | G046009860 | MAGNESIUM | 49.0 | MG/L | | | N | |
| 0460 | G046009860 | MERCURY | 0.0012 | MG/L | | | N | |
| 0460 | 4-60-03-19-87 | PLUTONIUM-239 | 0.79 | PCI/L | | | N | 19-MAR-87 |
| 0460 | 4-60-09-07-88 | PLUTONIUM-239 | 0.06 | PCI/L | | | | 07-SEP-88 |
| 0460 | 4-60-09-07-88 | PLUTONIUM-239 | 0.06 | PCI/L | | | N | 07-SEP-88 |
| 0460 | 4-60-09-01-89 | PLUTONIUM-239 | .016 | PCI/L | | 0 | | 01-SEP-89 |
| 0460 | G046009860 | PLUTONIUM-239 | 0 03 | PCI/L | | | N | |
| 0460 | 4-60-03-19-87 | POTASSIUM | 12.0 | MG/L | | 5.0 | N | 19-MAR-87 |
| 0460 | 4-60-06-25-87 | POTASSIUM | 23 | MG/L | | 5 0 | N | 25-JUN-87 |
| 0460 | 4-60-09-18-87 | POTASSIUM | 27 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60D-09-18-87 | POTASSIUM | 26 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60-01-06-88 | POTASSIUM | 21 0 | MG/L | | | N | 06-JAN-88 |
| 0460 | 4-60-03-17-88 | POTASSIUM | 77 | MG/L | | | N | 17-MAR-88 |
| 0460 | 4-60-05-18-88 | POTASSIUM | 18.2 | MG/L | | | N | 18-MAY-88 |
| 0460 | 4-60-09-07-88 | POTASSIUM | 25 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-09-07-88-FD | POTASSIUM | 25 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-02-28-89 | POTASSIUM | 12.600 | MG/L | | | | 28-FEB-89 |
| 0460 | 4-60-05-16-89 | POTASSIUM | 14.32 | MG/L | | | | 16-MAY-89 |
| 0460 | G04601189004 | POTASSIUM | 14.80 | MG/L | | 5000 | | 15-NOV-89 |
| 0460 | G-0460-0511-02-09 | POTASSIUM | 13100 | UG/L | | 5000 | | 11-MAY-90 |
| 0460 | GW00062IT | POTASSIUM | 13900.00 | UG/L | E | 5000 | | 20-AUG-90 |
| 0460 | GW00474IT | POTASSIUM | 14600.00 | UG/L | | 5000 | | 01-NOV-90 |
| 0460 | GW01205IT | POTASSIUM | 12300.00 | UG/L | | 5000 | | 24-APR-91 |
| 0460 | GW01394IT | POTASSIUM | 12400 00 | UG/L | | 5000 | | 10-JUN-91 |
| 0460 | GW00062IT | SELENIUM | 6.00 | UG/L | | 5 | | 20-AUG-90 |
| 0460 | GW00474IT | SELENIUM | 5.80 | UG/L | S | 5 | | 01-NOV-90 |
| 0460 | GW01205IT | SELENIUM | 8.00 | UG/L | N | 5 000 | | 24-APR-91 |
| 0460 | GW01394IT | SELENIUM | 8 90 | UG/L | S | 5 | | 10-JUN-91 |
| 0460 | 4-60-03-19-87 | SODIUM | 50.6191 | MG/L | | | N | 19-MAR-87 |
| 0460 | 4-60-06-25-87 | SODIUM | 151.5230 | MG/L | | 2 100 | N | 25-JUN-87 |
| 0460 | 4-60-09-18-87 | SODIUM | 139.8981 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60D-09-18-87 | SODIUM | 142.5424 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60-01-06-88 | SODIUM | 111.0774 | MG/L | | | N | 06-JAN-88 |
| 0460 | 4-60-03-17-88 | SODIUM | 93.3555 | MG/L | | | N | 17-MAR-88 |
| 0460 | 4-60-05-18-88 | SODIUM | 70.1957 | MG/L | | | N | 18-MAY-88 |
| 0460 | 4-60-09-07-88 | SODIUM | 105 5950 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-09-07-88-FD | SODIUM | 105 6072 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-12-02-88 | SODIUM | 116.7440 | MG/L | | | N | 02-DEC-88 |
| 0460 | 4-60-02-28-89 | SODIUM | 87 9477 | MG/L | | | | 28-FEB-89 |
| 0460 | 4-60-05-16-89 | SODIUM | 58 9697 | MG/L | | | | 16-MAY-89 |
| 0460 | G04601189004 | SODIUM | 101 00 | MG/L | | 5000 | | 15-NOV-89 |
| 0460 | G-0460-0511-02-09 | SODIUM | 73900 | UG/L | | 5000 | | 11-MAY-90 |
| 0460 | GW00062IT | SODIUM | 108000 00 | UG/L | E | 5000 | | 20-AUG-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 0460 | GW00474IT | SODIUM | 125000.00 | UG/L | | 5000 | | 01-NOV-90 |
| 0460 | GW01205IT | SODIUM | 130000 00 | UG/L | | 5000 | | 24-APR-91 |
| 0460 | GW01394IT | SODIUM | 110000.00 | UG/L | | 5000 | | 10-JUN-91 |
| 0460 | G046009860 | SODIUM | 127 | MG/L | | | N | |
| 0460 | G-0460-0511-02-09 | STRONTIUM | 809 | UG/L | | 100 | | 11-MAY-90 |
| 0460 | GW00062IT | STRONTIUM | 970 00 | UG/L | E | 200 | | 20-AUG-90 |
| 0460 | GW00474IT | STRONTIUM | 1230 00 | UG/L | | 200 | | 01-NOV-90 |
| 0460 | GW01205IT | STRONTIUM | 1290.00 | UG/L | | 200 | | 24-APR-91 |
| 0460 | GW01394IT | STRONTIUM | 1070.00 | UG/L | | 200 | | 10-JUN-91 |
| 0460 | 4-60-03-19-87 | STRONTIUM-90 | 6 4 | PCI/L | | | N | 19-MAR-87 |
| 0460 | 4-60-06-25-87 | STRONTIUM-90 | 1.2 | PCI/L | | | N | 25-JUN-87 |
| 0460 | 4-60-01-06-88 | STRONTIUM-90 | 2.2 | PCI/L | | | N | 06-JAN-88 |
| 0460 | 4-60-06-25-87 | SULFATE | 94.0 | MG/L | | 1.0 | | 25-JUN-87 |
| 0460 | 4-60-09-18-87 | SULFATE | 92.6 | MG/L | | 1.0 | | 18-SEP-87 |
| 0460 | 4-60-01-05-88 | SULFATE | 84.0 | MG/L | | | | 05-JAN-88 |
| 0460 | 4-60-12-02-88 | SULFATE | 75 7 | MG/L | R | | | 02-DEC-88 |
| 0460 | 4-60-02-28-89 | SULFATE | 74.0 | MG/L | A | | | 28-FEB-89 |
| 0460 | G-0460-0511-02-09 | SULFATE | 6550 | MG/L | | 2000 | | 11-MAY-90 |
| 0460 | GW00062IT | SULFATE | 68 | MG/L | | 2 0 | | 20-AUG-90 |
| 0460 | GW00474IT | SULFATE | 84 | MG/L | | 2.0 | | 01-NOV-90 |
| 0460 | GW01205IT | SULFATE | 100 | MG/L | | 2.0 | | 24-APR-91 |
| 0460 | GW01394IT | SULFATE | 86 | MG/L | | 2 0 | | 10-JUN-91 |
| 0460 | G046009860 | SULFATE | 91 | MG/L | | | | |
| 0460 | 4-60-03-19-87 | TRITIUM | 1700 | PCI/L | | | N | 19-MAR-87 |
| 0460 | 4-60-06-25-87 | TRITIUM | 2600 | PCI/L | | | N | 25-JUN-87 |
| 0460 | 4-60-09-18-87 | TRITIUM | 3000 | PCI/L | | | N | 18-SEP-87 |
| 0460 | 4-60-09-18-87D | TRITIUM | 2722 | PCI/L | | | N | 18-SEP-87 |
| 0460 | 4-60-01-06-88 | TRITIUM | 1600 | PCI/L | | | N | 06-JAN-88 |
| 0460 | 4-60-03-17-88 | TRITIUM | 1100 | PCI/L | | | N | 17-MAR-88 |
| 0460 | 4-60-05-18-88 | TRITIUM | 790 | PCI/L | | | N | 18-MAY-88 |
| 0460 | 4-60-09-07-88 | TRITIUM | 1300 | PCI/L | | | N | 07-SEP-88 |
| 0460 | 4-60-09-07-88-FD | TRITIUM | 1300 | PCI/L | | | N | 07-SEP-88 |
| 0460 | 4-60-12-06-88 | TRITIUM | 1300 | PCI/L | | | N | 06-DEC-88 |
| 0460 | 4-60-02-28-89 | TRITIUM | 980 | PCI/L | | | V | 28-FEB-89 |
| 0460 | 4-60-02-28-89-FD | TRITIUM | 930 | PCI/L | | | V | 28-FEB-89 |
| 0460 | 4-60-05-16-89D | TRITIUM | 370 | PCI/L | | | | 16-MAY-89 |
| 0460 | GW00474IT | TRITIUM | 1231 | PCI/L | | 400 | | 01-NOV-90 |
| 0460 | 4-60-03-19-87 | URANIUM-233,-234 | 12 | PCI/L | | | N | 19-MAR-87 |
| 0460 | 4-60-06-25-87 | URANIUM-233,-234 | 0.24 | PCI/L | | | N | 25-JUN-87 |
| 0460 | 4-60-09-18-87D | URANIUM-233,-234 | 28.1 | PCI/L | | | N | 18-SEP-87 |
| 0460 | 4-60-09-18-87 | URANIUM-233,-234 | 16.4 | PCI/L | | | N | 18-SEP-87 |
| 0460 | 4-60-01-06-88 | URANIUM-233,-234 | 24 | PCI/L | | | N | 06-JAN-88 |
| 0460 | 4-60-03-17-88 | URANIUM-233,-234 | 20 | PCI/L | | | N | 17-MAR-88 |
| 0460 | 4-60-05-18-88 | URANIUM-233,-234 | 20 | PCI/L | | | N | 18-MAY-88 |
| 0460 | 4-60-09-07-88 | URANIUM-233,-234 | 17 | PCI/L | | | | 07-SEP-88 |
| 0460 | 4-60-09-07-88-FD | URANIUM-233,-234 | 16 | PCI/L | | | N | 07-SEP-88 |
| 0460 | 4-60-09-07-88-FD | URANIUM-233,-234 | 16 | PCI/L | | | | 07-SEP-88 |
| 0460 | 4-60-09-07-88 | URANIUM-233,-234 | 17 | PCI/L | | | N | 07-SEP-88 |
| 0460 | 4-60-12-06-88 | URANIUM-233,-234 | 19 | PCI/L | | | | 06-DEC-88 |
| 0460 | 4-60-12-06-88 | URANIUM-233,-234 | 19 | PCI/L | | | N | 06-DEC-88 |
| 0460 | 4-60-09-01-89 | URANIUM-233,-234 | 16 25 | PCI/L | | 0 | | 01-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 0460 | G04601189004 | URANIUM-233,-234 | 17 | PCI/L | | .3 | | 15-NOV-89 |
| 0460 | GW00474IT | URANIUM-233,-234 | 19 15 | PCI/L | | 6 | | 01-NOV-90 |
| 0460 | G046009860 | URANIUM-233,-234 | 30 | PCI/L | | | N | |
| 0460 | 4-60-03-19-87 | ZINC | 0.93 | MG/L | | 0.02 | N | 19-MAR-87 |
| 0460 | 4-60-06-25-87 | ZINC | 0.3797 | MG/L | | 0.020 | N | 25-JUN-87 |
| 0460 | 4-60-09-18-87 | ZINC | 0.3748 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60D-09-18-87 | ZINC | 0.3356 | MG/L | | | N | 18-SEP-87 |
| 0460 | 4-60-01-06-88 | ZINC | 0.3483 | MG/L | | | N | 06-JAN-88 |
| 0460 | 4-60-03-17-88 | ZINC | 0.3583 | MG/L | | | N | 17-MAR-88 |
| 0460 | 4-60-05-18-88 | ZINC | 0.2862 | MG/L | | | N | 18-MAY-88 |
| 0460 | 4-60-09-07-88 | ZINC | 0.3824 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-09-07-88-FD | ZINC | 0.3696 | MG/L | | | N | 07-SEP-88 |
| 0460 | 4-60-12-02-88 | ZINC | 0 4780 | MG/L | | | N | 02-DEC-88 |
| 0460 | 4-60-02-28-89 | ZINC | 0 2709 | MG/L | | | | 28-FEB-89 |
| 0460 | 4-60-05-16-89 | ZINC | 0 6414 | MG/L | | | | 16-MAY-89 |
| 0460 | G04601189004 | ZINC | .235 | MG/L | | 20.0 | | 15-NOV-89 |
| 0460 | G-0460-0511-02-09 | ZINC | 196 | UG/L | | 20 | | 11-MAY-90 |
| 0460 | GW00062IT | ZINC | 177.00 | UG/L | E | 20 | | 20-AUG-90 |
| 0460 | GW00474IT | ZINC | 296 00 | UG/L | E | 20 | | 01-NOV-90 |
| 0460 | GW01205IT | ZINC | 324.00 | UG/L | | 20.00 | | 24-APR-91 |
| 0460 | GW01394IT | ZINC | 370.00 | UG/L | | 20 | | 10-JUN-91 |
| 0460 | G046009860 | ZINC | 0.250 | MG/L | | | N | |
| 0681 | 6-81-06-25-87 | BARIUM | 0.3584 | MG/L | | 0.010 | N | 25-JUN-87 |
| 0681 | 6-81-09-17-87 | BARIUM | 0.3957 | MG/L | | | N | 17-SEP-87 |
| 0681 | G06811189004 | BARIUM | .385 | MG/L | R | 200 | A | 20-NOV-89 |
| 0681 | G06811189004 | BICARBONATE | 290 | MG/L | | | | 20-NOV-89 |
| 0681 | 6-81-06-25-87 | CALCIUM | 68.4274 | MG/L | | 0.785 | N | 25-JUN-87 |
| 0681 | G06811189004 | CALCIUM | 88.40 | MG/L | A | 5000 | A | 20-NOV-89 |
| 0681 | G068109860 | CALCIUM | 84.0 | MG/L | | | N | |
| 0681 | G068109860 | CARBONATE | 210 | MG/L | | | | |
| 0681 | G068109860 | COBALT | 0.220 | MG/L | | | N | |
| 0681 | G06811189004 | CYANIDE | 3.0 | UG/L | | 2 5 | | 20-NOV-89 |
| 0681 | 6-81-06-25-87 | GROSS ALPHA PARTICLE | 185 | PCI/L | | | N | 25-JUN-87 |
| 0681 | 6-81-06-25-87 | GROSS BETA PARTICLE | 166 | PCI/L | | | N | 25-JUN-87 |
| 0681 | 6-81-09-17-87 | IRON | 5.1882 | MG/L | | | N | 17-SEP-87 |
| 0681 | G06811189004 | MAGNESIUM | 18.20 | MG/L | A | 5000 | A | 20-NOV-89 |
| 0681 | 6-81-06-25-87 | MANGANESE | 1.8842 | MG/L | | 0.005 | N | 25-JUN-87 |
| 0681 | 6-81-09-17-87 | MANGANESE | 1.8527 | MG/L | | | N | 17-SEP-87 |
| 0681 | G068109860 | MANGANESE | 1.48 | MG/L | | | N | |
| 0681 | 6-81-06-25-87 | MERCURY | 0.0010 | MG/L | | 0 000 | N | 25-JUN-87 |
| 0681 | G068109860 | MERCURY | 0.00088 | MG/L | | | N | |
| 0681 | 6-81-06-25-87 | PLUTONIUM-239 | 0.07 | PCI/L | | | N | 25-JUN-87 |
| 0681 | G068109860 | PLUTONIUM-239 | 0.02 | PCI/L | | | N | |
| 0681 | 6-81-06-25-87 | STRONTIUM-90 | 1.1 | PCI/L | | | N | 25-JUN-87 |
| 0681 | 6-81-09-17-87 | SULFATE | 137 | MG/L | | 1.0 | | 17-SEP-87 |
| 0681 | G06811189004 | SULFATE | 72 | MG/L | | | | 20-NOV-89 |
| 0681 | 6-81-06-25-87 | URANIUM-233,-234 | 5.0 | PCI/L | | | N | 25-JUN-87 |
| 0681 | 6-81-09-18-87 | URANIUM-233,-234 | 3.4 | PCI/L | | | N | 18-SEP-87 |
| 0681 | G068109860 | URANIUM-233,-234 | 0.59 | PCI/L | | | N | |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 0781 | G-0781-0604-02-13 | BARIUM | 316 | UG/L | | 9 7 | | 05-JUN-90 |
| 0781 | G-0781-0604-02-13 | CALCIUM | 39100 | UG/L | | 15.7 | | 05-JUN-90 |
| 0781 | GW00224IT | CALCIUM | 39000.00 | UG/L | | 5000 | | 17-AUG-90 |
| 0781 | GW00523IT | CALCIUM | 40200.00 | UG/L | | 5000 | | 18-OCT-90 |
| 0781 | GW01378IT | CALCIUM | 36200.00 | UG/L | | 5000 | | 04-JUN-91 |
| 0781 | G-0781-0604-02-13 | LEAD | 44.9 | UG/L | | 1.0 | | 05-JUN-90 |
| 0781 | GW00224IT | LEAD | 4.60 | UG/L | | 3 | | 17-AUG-90 |
| 0781 | G-0781-0604-02-13 | MAGNESIUM | 8400 | UG/L | | 51.8 | | 05-JUN-90 |
| 0781 | GW00224IT | MAGNESIUM | 8330 00 | UG/L | | 5000 | | 17-AUG-90 |
| 0781 | GW00523IT | MAGNESIUM | 8570.00 | UG/L | | 5000 | | 18-OCT-90 |
| 0781 | GW01378IT | MAGNESIUM | 7670.00 | UG/L | | 5000 | | 04-JUN-91 |
| 0781 | G078109860 | MAGNESIUM | 42.00 | MG/L | | | N | |
| 0781 | G-0781-0604-02-13 | MANGANESE | 68.9 | UG/L | | 1 2 | | 05-JUN-90 |
| 0781 | GW00224IT | MANGANESE | 106 00 | UG/L | | 15 | | 17-AUG-90 |
| 0781 | GW00523IT | MANGANESE | 155.00 | UG/L | | 15 | | 18-OCT-90 |
| 0781 | GW01378IT | MANGANESE | 20.50 | UG/L | | 15 | | 04-JUN-91 |
| 0781 | G078109860 | MANGANESE | 0.520 | MG/L | | | N | |
| 0781 | G-0781-0604-02-13 | SODIUM | 22600 | UG/L | | 15 5 | | 05-JUN-90 |
| 0781 | GW00224IT | SODIUM | 34800.00 | UG/L | | 5000 | | 17-AUG-90 |
| 0781 | GW00523IT | SODIUM | 20900 00 | UG/L | E | 5000 | | 18-OCT-90 |
| 0781 | GW01378IT | SODIUM | 21000.00 | UG/L | | 5000 | | 04-JUN-91 |
| 0781 | GW00224IT | STRONTIUM | 229.00 | UG/L | | 200 | | 17-AUG-90 |
| 0781 | GW00523IT | STRONTIUM | 237.00 | UG/L | | 200 | | 18-OCT-90 |
| 0781 | GW01378IT | STRONTIUM | 216 00 | UG/L | | 200 | | 04-JUN-91 |
| 0781 | GW01378IT | TIN | 407 00 | UG/L | | 200 | | 04-JUN-91 |
| 0781 | G07811189004 | URANIUM-233,-234 | 0.84 | PCI/L | | 0 | | 17-NOV-89 |
| 0781 | GW00224IT | URANIUM-233,-234 | 1 001 | PCI/L | | .6 | | 17-AUG-90 |
| 0781 | G078109860 | URANIUM-233,-234 | 2.1 | PCI/L | | | N | |
| 0781 | GW00224IT | ZINC | 54.10 | UG/L | | 20 | | 17-AUG-90 |
| 0781 | GW00523IT | ZINC | 25.10 | UG/L | | 20 | | 18-OCT-90 |
| 0987 | G-0987-0608-02-09 | ALUMINUM | 42.7 | UG/L | | 10.5 | | 08-JUN-90 |
| 0987 | GW00932IT | AMERICIUM-241 | .02631 | PCI/L | | .01 | | 07-MAR-91 |
| 0987 | G-0987-0608-02-09 | ANTIMONY | 22.5 | UG/L | | 18 3 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | BARIUM | 73.1 | UG/L | | 9.7 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | BARIUM | 76 1 | UG/L | | 9 7 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | BERYLLIUM | 1.3 | UG/L | | 0 90 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | CALCIUM | 71700 | UG/L | | 15.7 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | CALCIUM | 71700 | UG/L | | 33 2 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | CALCIUM | 68400 | UG/L | | 15.7 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | CALCIUM | 68400 | UG/L | | 33.2 | | 08-JUN-90 |
| 0987 | GW00399IT | CALCIUM | 84300 | UG/L | | | | 17-SEP-90 |
| 0987 | GW00681IT | CALCIUM | 84300.00 | UG/L | | 5000 | | 12-DEC-90 |
| 0987 | GW00932IT | CALCIUM | 85500 | UG/L | | | | 07-MAR-91 |
| 0987 | GW01297IT | CALCIUM | 96600.00 | UG/L | | 5000 | | 15-MAY-91 |
| 0987 | GW00932IT | CHROMIUM | 21 6 | UG/L | | | | 07-MAR-91 |
| 0987 | G-0987-0608-02-09 | IRON | 30 6 | UG/L | | 13 2 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | IRON | 73.5 | UG/L | | 13 2 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | LEAD | 10.9 | UG/L | | 1.2 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | LEAD | 10 9 | UG/L | | 1.6 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | LEAD | 3 | UG/L | | 1 6 | | 08-JUN-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 0987 | G-0987-0608-02-09 | LEAD | 3.0 | UG/L | | 1.2 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | MAGNESIUM | 6190 | UG/L | | 34 1 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | MAGNESIUM | 6500 | UG/L | | 51 8 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | MAGNESIUM | 6500 | UG/L | | 34 1 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | MAGNESIUM | 6190 | UG/L | | 51.8 | | 08-JUN-90 |
| 0987 | GW00399IT | MAGNESIUM | 7340 | UG/L | | | | 17-SEP-90 |
| 0987 | GW00681IT | MAGNESIUM | 6930.00 | UG/L | | 5000 | | 12-DEC-90 |
| 0987 | GW00932IT | MAGNESIUM | 7730 | UG/L | | | | 07-MAR-91 |
| 0987 | GW01297IT | MAGNESIUM | 8350.00 | UG/L | | 5000 | | 15-MAY-91 |
| 0987 | G-0987-0608-02-09 | MANGANESE | 2.2 | UG/L | | 1.2 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | MANGANESE | 6.1 | UG/L | | 1.2 | | 08-JUN-90 |
| 0987 | GW00932IT | PLUTONIUM-239/240 | .1245 | PCI/L | | .01 | | 07-MAR-91 |
| 0987 | GW00932IT | SILVER | 11.5 | UG/L | | | | 07-MAR-91 |
| 0987 | G-0987-0608-02-09 | SODIUM | 6790 | UG/L | | 15.5 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | SODIUM | 6790 | UG/L | | 63.6 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | SODIUM | 7140 | UG/L | | 63 6 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | SODIUM | 7140 | UG/L | | 15.5 | | 08-JUN-90 |
| 0987 | GW00399IT | SODIUM | 7420 | UG/L | | | | 17-SEP-90 |
| 0987 | GW00681IT | SODIUM | 7160.00 | UG/L | | 5000 | | 12-DEC-90 |
| 0987 | GW00932IT | SODIUM | 8010 | UG/L | | | | 07-MAR-91 |
| 0987 | GW01297IT | SODIUM | 12500 00 | UG/L | | 5000 | | 15-MAY-91 |
| 0987 | G-0987-0608-02-09 | STRONTIUM | 249 | UG/L | | 13 1 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | STRONTIUM | 233 | UG/L | | 13.1 | | 08-JUN-90 |
| 0987 | GW00399IT | STRONTIUM | 279 | UG/L | | | | 17-SEP-90 |
| 0987 | GW00681IT | STRONTIUM | 266 00 | UG/L | | 200 | | 12-DEC-90 |
| 0987 | GW00932IT | STRONTIUM | 305 | UG/L | | | | 07-MAR-91 |
| 0987 | GW01297IT | STRONTIUM | 336.00 | UG/L | | 200 | | 15-MAY-91 |
| 0987 | GW00681IT | TRITIUM | 707.7 | PCI/L | | 400 | | 12-DEC-90 |
| 0987 | GW00681IT | URANIUM-233,-234 | 1.07 | PCI/L | | .6 | | 12-DEC-90 |
| 0987 | GW00932IT | URANIUM-233,-234 | .7992 | PCI/L | | .6 | | 07-MAR-91 |
| 0987 | G-0987-0608-02-09 | VANADIUM | 2.9 | UG/L | | 1.2 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | VANADIUM | 2.6 | UG/L | | 1.2 | | 08-JUN-90 |
| 0987 | G-0987-0608-02-09 | ZINC | 5.8 | UG/L | | 2 9 | | 08-JUN-90 |
| 0987 | GW00681IT | ZINC | 29.80 | UG/L | | 20 | | 12-DEC-90 |
| 1087 | G10870390001 | BICARBONATE | 730 | MG/L | | | | 08-MAR-90 |
| 1087 | GW00061IT | URANIUM-233,-234 | .7255 | PCI/L | | .6 | | 25-SEP-90 |
| 1986 | 19-86-12-18-87 | AMERICIUM-241 | .11 | PCI/L | | .90 | N | 18-DEC-87 |
| 1986 | 19-86-05-24-88 | AMERICIUM-241 | 0.04 | PCI/L | | 0.72 | N | 24-MAY-88 |
| 1986 | GW00054IT | ANTIMONY | 24.6 | UG/L | | 60 | | 25-JUL-90 |
| 1986 | 19-86-12-18-87 | ARSENIC | 0.010 | MG/L | | | N | 18-DEC-87 |
| 1986 | 19-86-03-26-87 | BARIUM | 0.2335 | MG/L | | 0.010 | N | 26-MAR-87 |
| 1986 | GW00054IT | BARIUM | 210 | UG/L | | 200 | | 25-JUL-90 |
| 1986 | GW01377IT | BARIUM | 201.00 | UG/L | | 200 | | 03-JUN-91 |
| 1986 | 19-86-03-26-87 | BICARBONATE | 630 | MG/L | | 1 0 | | 26-MAR-87 |
| 1986 | 19-86-06-30-87 | BICARBONATE | 591 | MG/L | | 1.0 | | 30-JUN-87 |
| 1986 | 19-86D-06-30-87 | BICARBONATE | 592 | MG/L | | 1 0 | | 30-JUN-87 |
| 1986 | 19-86-09-15-87 | BICARBONATE | 647 | MG/L | | 1 0 | | 15-SEP-87 |
| 1986 | 19-86-12-18-87 | BICARBONATE | 713 | MG/L | | | | 18-DEC-87 |
| 1986 | 19-86-03-17-88 | BICARBONATE | 386 | MG/L | | | | 17-MAR-88 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 1986 | 19-86-05-24-88 | BICARBONATE | 592 | MG/L | | | | 24-MAY-88 |
| 1986 | 19-86-11-29-88 | BICARBONATE | 578 | MG/L | A | | | 29-NOV-88 |
| 1986 | 19-86-02-28-89 | BICARBONATE | 750 | MG/L | A | | | 28-FEB-89 |
| 1986 | 19-86-05-16-89 | BICARBONATE | 632 | MG/L | V | | | 16-MAY-89 |
| 1986 | 19-86-08-29-89 | BICARBONATE | 599 | MG/L | | | | 29-AUG-89 |
| 1986 | GW00054IT | BICARBONATE AS CACO3 | 620 | MG/L | | 1 | | 25-JUL-90 |
| 1986 | GW00530IT | BICARBONATE AS CACO3 | 610 | MG/L | | 1 | | 18-OCT-90 |
| 1986 | GW01377IT | BICARBONATE AS CACO3 | 340 | MG/L | | 1.0 | | 03-JUN-91 |
| 1986 | 19-86-03-26-87 | CALCIUM | 214.2829 | MG/L | | 0.750 | N | 26-MAR-87 |
| 1986 | 19-86-06-30-87 | CALCIUM | 179 7129 | MG/L | | 0.750 | N | 30-JUN-87 |
| 1986 | 19-86D-06-30-87 | CALCIUM | 178.5739 | MG/L | | 0.750 | N | 30-JUN-87 |
| 1986 | 19-86-09-15-87 | CALCIUM | 123.9907 | MG/L | | | N | 15-SEP-87 |
| 1986 | 19-86-12-18-87 | CALCIUM | 127.0779 | MG/L | | | N | 18-DEC-87 |
| 1986 | 19-86-03-17-88 | CALCIUM | 167 0982 | MG/L | | | N | 17-MAR-88 |
| 1986 | 19-86-05-24-88 | CALCIUM | 151 9402 | MG/L | | | N | 24-MAY-88 |
| 1986 | 19-86-09-07-88 | CALCIUM | 130.8454 | MG/L | | | N | 07-SEP-88 |
| 1986 | 19-86-11-29-88 | CALCIUM | 120.8060 | MG/L | | | N | 29-NOV-88 |
| 1986 | 19-86-02-28-89 | CALCIUM | 126.9875 | MG/L | | | | 28-FEB-89 |
| 1986 | 19-86-05-16-89 | CALCIUM | 157.6886 | MG/L | | | | 16-MAY-89 |
| 1986 | G19860290001D | CALCIUM | 135 00 | MG/L | | 5000 | | 12-FEB-90 |
| 1986 | GW00054IT | CALCIUM | 153000 | UG/L | | 5000 | | 25-JUL-90 |
| 1986 | GW00530IT | CALCIUM | 130000 | UG/L | | 5000 | | 18-OCT-90 |
| 1986 | GW01377IT | CALCIUM | 157000.00 | UG/L | | 5000 | | 03-JUN-91 |
| 1986 | G198609860 | CALCIUM | 148.0 | MG/L | | | N | |
| 1986 | 19-86-03-17-88 | CHROMIUM | 0.0202 | MG/L | | | N | 17-MAR-88 |
| 1986 | GW00054IT | CYANIDES (SOLUBLE SA | 0.04 | MG/L | | 0.02 | | 25-JUL-90 |
| 1986 | 19-86-03-26-87 | GROSS ALPHA PARTICLE | 102 | PCI/L | | | N | 26-MAR-87 |
| 1986 | G198609860 | GROSS ALPHA PARTICLE | 170 | PCI/L | | | N | |
| 1986 | 19-86-03-26-87 | GROSS BETA PARTICLE | 100 | PCI/L | | | N | 26-MAR-87 |
| 1986 | 19-86-06-30-87 | GROSS BETA PARTICLE | 62 | PCI/L | | | N | 30-JUN-87 |
| 1986 | G198609860 | GROSS BETA PARTICLE | 470 | PCI/L | | | N | |
| 1986 | 19-86-06-30-87 | IRON | 4.0573 | MG/L | | 0 006 | N | 30-JUN-87 |
| 1986 | 19-86D-06-30-87 | IRON | 4.6217 | MG/L | | 0 006 | N | 30-JUN-87 |
| 1986 | 19-86-09-15-87 | IRON | 3.5696 | MG/L | | | N | 15-SEP-87 |
| 1986 | 19-86-12-18-87 | IRON | 3.7485 | MG/L | | | N | 18-DEC-87 |
| 1986 | 19-86-03-17-88 | IRON | 8.4953 | MG/L | | | N | 17-MAR-88 |
| 1986 | 19-86-05-24-88 | IRON | 5.4132 | MG/L | | | N | 24-MAY-88 |
| 1986 | 19-86-09-07-88 | IRON | 1.6329 | MG/L | | | N | 07-SEP-88 |
| 1986 | 19-86-11-29-88 | IRON | 4.6340 | MG/L | | | N | 29-NOV-88 |
| 1986 | 19-86-02-28-89 | IRON | 4.9123 | MG/L | | | | 28-FEB-89 |
| 1986 | 19-86-05-16-89 | IRON | 6.5260 | MG/L | | | | 16-MAY-89 |
| 1986 | G19860290001D | IRON | 12.70 | MG/L | | 100 | | 12-FEB-90 |
| 1986 | GW00054IT | IRON | 12600 | UG/L | | 100 | | 25-JUL-90 |
| 1986 | GW00530IT | IRON | 8920 | UG/L | | 100 | | 18-OCT-90 |
| 1986 | GW01377IT | IRON | 12100.00 | UG/L | | 100 | | 03-JUN-91 |
| 1986 | 19-86-03-26-87 | MAGNESIUM | 58 1247 | MG/L | | 0.020 | N | 26-MAR-87 |
| 1986 | 19-86-06-30-87 | MAGNESIUM | 47.3570 | MG/L | | 0.020 | N | 30-JUN-87 |
| 1986 | 19-86D-06-30-87 | MAGNESIUM | 46.8044 | MG/L | | 0.020 | N | 30-JUN-87 |
| 1986 | 19-86-09-15-87 | MAGNESIUM | 38 5731 | MG/L | | | N | 15-SEP-87 |
| 1986 | 19-86-12-18-87 | MAGNESIUM | 36.4411 | MG/L | | | N | 18-DEC-87 |
| 1986 | 19-86-03-17-88 | MAGNESIUM | 48.1747 | MG/L | | | N | 17-MAR-88 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 1986 | 19-86-05-24-88 | MAGNESIUM | 46 1137 | MG/L | | | N | 24-MAY-88 |
| 1986 | 19-86-09-07-88 | MAGNESIUM | 38 1490 | MG/L | | | N | 07-SEP-88 |
| 1986 | 19-86-11-29-88 | MAGNESIUM | 33 5490 | MG/L | | | N | 29-NOV-88 |
| 1986 | 19-86-02-28-89 | MAGNESIUM | 37.6963 | MG/L | | | | 28-FEB-89 |
| 1986 | 19-86-05-16-89 | MAGNESIUM | 47.7226 | MG/L | | | | 16-MAY-89 |
| 1986 | G19860290001D | MAGNESIUM | 37.60 | MG/L | | 5000 | | 12-FEB-90 |
| 1986 | GW00054IT | MAGNESIUM | 48200 | UG/L | | 5000 | | 25-JUL-90 |
| 1986 | GW00530IT | MAGNESIUM | 38300 | UG/L | | 5000 | | 18-OCT-90 |
| 1986 | GW01377IT | MAGNESIUM | 47100.00 | UG/L | | 5000 | | 03-JUN-91 |
| 1986 | G198609860 | MAGNESIUM | 45 4 | MG/L | | | N | |
| 1986 | 19-86-03-26-87 | MANGANESE | 3.9219 | MG/L | | 0.005 | N | 26-MAR-87 |
| 1986 | 19-86-06-30-87 | MANGANESE | 3.1594 | MG/L | | 0.005 | N | 30-JUN-87 |
| 1986 | 19-86D-06-30-87 | MANGANESE | 3 1908 | MG/L | | 0.005 | N | 30-JUN-87 |
| 1986 | 19-86-09-15-87 | MANGANESE | 2.7198 | MG/L | | | N | 15-SEP-87 |
| 1986 | 19-86-12-18-87 | MANGANESE | 2.5587 | MG/L | | | N | 18-DEC-87 |
| 1986 | 19-86-03-17-88 | MANGANESE | 3.4966 | MG/L | | | N | 17-MAR-88 |
| 1986 | 19-86-05-24-88 | MANGANESE | 2.8963 | MG/L | | | N | 24-MAY-88 |
| 1986 | 19-86-09-07-88 | MANGANESE | 2.6842 | MG/L | | | N | 07-SEP-88 |
| 1986 | 19-86-11-29-88 | MANGANESE | 2.4762 | MG/L | | | N | 29-NOV-88 |
| 1986 | 19-86-02-28-89 | MANGANESE | 2.7515 | MG/L | | | | 28-FEB-89 |
| 1986 | 19-86-05-16-89 | MANGANESE | 3.5578 | MG/L | | | | 16-MAY-89 |
| 1986 | G19860290001D | MANGANESE | 2.79 | MG/L | | 15 0 | | 12-FEB-90 |
| 1986 | GW00054IT | MANGANESE | 3200 | UG/L | | 15 | | 25-JUL-90 |
| 1986 | GW00530IT | MANGANESE | 2770 | UG/L | | 15 | | 18-OCT-90 |
| 1986 | GW01377IT | MANGANESE | 3320.00 | UG/L | | 15 | | 03-JUN-91 |
| 1986 | G198609860 | MANGANESE | 2.230 | MG/L | | | N | |
| 1986 | 19-86D-06-30-87 | NICKEL | 0 0461 | MG/L | | 0.037 | N | 30-JUN-87 |
| 1986 | 19-86-03-17-88 | NICKEL | 0.0537 | MG/L | | | N | 17-MAR-88 |
| 1986 | 19-86-03-26-87 | PLUTONIUM-239 | 0.3 | PCI/L | | | N | 26-MAR-87 |
| 1986 | 19-86-09-15-87 | PLUTONIUM-239 | .85 | PCI/L | | 1. | N | 15-SEP-87 |
| 1986 | 19-86-03-17-88 | PLUTONIUM-239 | 0.03 | PCI/L | | | N | 17-MAR-88 |
| 1986 | 19-86-03-26-87 | SODIUM | 230.9371 | MG/L | | 2 100 | N | 26-MAR-87 |
| 1986 | 19-86-06-30-87 | SODIUM | 205.5886 | MG/L | | 2.100 | N | 30-JUN-87 |
| 1986 | 19-86D-06-30-87 | SODIUM | 204 5986 | MG/L | | 2.100 | N | 30-JUN-87 |
| 1986 | 19-86-09-15-87 | SODIUM | 174-8991 | MG/L | | | N | 15-SEP-87 |
| 1986 | 19-86-12-18-87 | SODIUM | 178.7676 | MG/L | | | N | 18-DEC-87 |
| 1986 | 19-86-03-17-88 | SODIUM | 221.0428 | MG/L | | | N | 17-MAR-88 |
| 1986 | 19-86-05-24-88 | SODIUM | 183.1914 | MG/L | | | N | 24-MAY-88 |
| 1986 | 19-86-09-07-88 | SODIUM | 189.3525 | MG/L | | | N | 07-SEP-88 |
| 1986 | 19-86-11-29-88 | SODIUM | 182.4889 | MG/L | | | N | 29-NOV-88 |
| 1986 | 19-86-02-28-89 | SODIUM | 180.1591 | MG/L | | | | 28-FEB-89 |
| 1986 | 19-86-05-16-89 | SODIUM | 201.5160 | MG/L | | | | 16-MAY-89 |
| 1986 | G19860290001D | SODIUM | 171.00 | MG/L | | 5000 | | 12-FEB-90 |
| 1986 | GW00054IT | SODIUM | 392000 | UG/L | | 5000 | | 25-JUL-90 |
| 1986 | GW00530IT | SODIUM | 182000 | UG/L | | 5000 | | 18-OCT-90 |
| 1986 | GW01377IT | SODIUM | 218000 00 | UG/L | | 5000 | | 03-JUN-91 |
| 1986 | G198609860 | SODIUM | 232.0 | MG/L | | | N | |
| 1986 | GW00054IT | STRONTIUM | 1030 | UG/L | | 200 | | 25-JUL-90 |
| 1986 | GW00530IT | STRONTIUM | 902 | UG/L | | 200 | | 18-OCT-90 |
| 1986 | GW01377IT | STRONTIUM | 1130.00 | UG/L | | 200 | | 03-JUN-91 |
| 1986 | GW00054IT | STRONTIUM-89,90 | 1.928 | PCI/L | X | 1 | | 25-JUL-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 1986 | 19-86-03-26-87 | STRONTIUM-90 | 3.49 | PCI/L | | | N | 26-MAR-87 |
| 1986 | 19-86-09-15-87 | STRONTIUM-90 | 1 4 | PCI/L | | | N | 15-SEP-87 |
| 1986 | 19-86-03-26-87 | SULFATE | 235 | MG/L | | 1.0 | | 26-MAR-87 |
| 1986 | 19-86-06-30-87 | SULFATE | 143 | MG/L | | 1.0 | | 30-JUN-87 |
| 1986 | 19-86D-06-30-87 | SULFATE | 175 | MG/L | | 1.0 | | 30-JUN-87 |
| 1986 | 19-86-09-15-87 | SULFATE | 193 | MG/L | | 1.0 | | 15-SEP-87 |
| 1986 | 19-86-12-18-87 | SULFATE | 93.0 | MG/L | | | | 18-DEC-87 |
| 1986 | 19-86-03-17-88 | SULFATE | 150 | MG/L | | | | 17-MAR-88 |
| 1986 | 19-86-05-24-88 | SULFATE | 285 | MG/L | | | | 24-MAY-88 |
| 1986 | 19-86-11-29-88 | SULFATE | 108 | MG/L | R | | | 29-NOV-88 |
| 1986 | 19-86-02-28-89 | SULFATE | 102 | MG/L | A | | | 28-FEB-89 |
| 1986 | 19-86-05-16-89 | SULFATE | 227 | MG/L | A | | | 16-MAY-89 |
| 1986 | 19-86-08-29-89 | SULFATE | 174 | MG/L | | | | 29-AUG-89 |
| 1986 | GW00054IT | SULFATE | 200 | MG/L | | 0 2 | | 25-JUL-90 |
| 1986 | GW00530IT | SULFATE | 130 | MG/L | | 40 | | 18-OCT-90 |
| 1986 | GW01377IT | SULFATE | 150 | MG/L | | 2.0 | | 03-JUN-91 |
| 1986 | G198609860 | SULFATE | 230 | MG/L | | | | |
| 1986 | 19-86-03-26-87 | URANIUM-233,-234 | 2.4 | PCI/L | | | N | 26-MAR-87 |
| 1986 | 19-86-06-30-87 | URANIUM-233,-234 | 0.96 | PCI/L | | | N | 30-JUN-87 |
| 1986 | 19-86-06-30-87D | URANIUM-233,-234 | 4.1 | PCI/L | | | N | 30-JUN-87 |
| 1986 | 19-86-09-15-87 | URANIUM-233,-234 | 5 4 | PCI/L | | | N | 15-SEP-87 |
| 1986 | 19-86-12-18-87 | URANIUM-233,-234 | 5.5 | PCI/L | | | N | 18-DEC-87 |
| 1986 | 19-86-03-17-88 | URANIUM-233,-234 | 5.8 | PCI/L | | | N | 17-MAR-88 |
| 1986 | 19-86-05-24-88 | URANIUM-233,-234 | 5 0 | PCI/L | | | N | 24-MAY-88 |
| 1986 | 19-86-09-07-88 | URANIUM-233,-234 | 5.0 | PCI/L | | | N | 07-SEP-88 |
| 1986 | 19-86-09-07-88 | URANIUM-233,-234 | 5.0 | PCI/L | | | | 07-SEP-88 |
| 1986 | 19-86-11-29-88 | URANIUM-233,-234 | 4.9 | PCI/L | | | | 29-NOV-88 |
| 1986 | 19-86-11-29-88 | URANIUM-233,-234 | 4.9 | PCI/L | | | N | 29-NOV-88 |
| 1986 | 19-86-08-29-89 | URANIUM-233,-234 | 4.43 | PCI/L | | 0.49 | | 29-AUG-89 |
| 1986 | GW00054IT | URANIUM-233,-234 | 3.779 | PCI/L | X | .6 | | 25-JUL-90 |
| 1986 | GW00530IT | URANIUM-233,-234 | 2.893 | PCI/L | | .6 | | 18-OCT-90 |
| 1986 | G198609860 | URANIUM-233,-234 | 23 | PCI/L | | | N | |
| 2186 | G218611862 | ALUMINUM | 1.230 | MG/L | | | N | |
| 2186 | 21-86-05-24-88 | AMERICIUM-241 | 0 02 | PCI/L | | 0.44 | N | 24-MAY-88 |
| 2186 | G21860290001 | AMERICIUM-241 | +2.417E-0 | PCI /L | | 0.005 | | 28-FEB-90 |
| 2186 | 21-86-03-07-89 | BICARBONATE | 252 | MG/L | V | | | 07-MAR-89 |
| 2186 | G21860290001 | BICARBONATE | 270 | MG/L | | | | 28-FEB-90 |
| 2186 | G-2186-0510-02-10 | CALCIUM | 48100 | UG/L | | 5000 | | 11-MAY-90 |
| 2186 | GW00059IT | CALCIUM | 44900.00 | UG/L | E | 5000 | | 02-AUG-90 |
| 2186 | GW01379IT | CALCIUM | 44400.00 | UG/L | | 5000 | | 04-JUN-91 |
| 2186 | G218611862 | CALCIUM | 86 90 | MG/L | | | N | |
| 2186 | GW01379IT | CARBONATE AS CACO3 | 6 | MG/L | | 1.0 | | 04-JUN-91 |
| 2186 | GW00059IT | CHROMIUM | 11.20 | UG/L | | 10 | | 02-AUG-90 |
| 2186 | G218611860 | GROSS ALPHA PARTICLE | 68 | PCI/L | | | N | |
| 2186 | G218611862 | GROSS ALPHA PARTICLE | 160 | PCI/L | | | N | |
| 2186 | G218611862 | GROSS BETA PARTICLE | 260 | PCI/L | | | N | |
| 2186 | G218611860 | GROSS BETA PARTICLE | 72 | PCI/L | | | N | |
| 2186 | G-2186-0510-02-10 | MAGNESIUM | 11700 | UG/L | | 5000 | | 11-MAY-90 |
| 2186 | GW00059IT | MAGNESIUM | 10700.00 | UG/L | E | 5000 | | 02-AUG-90 |
| 2186 | GW01379IT | MAGNESIUM | 10700.00 | UG/L | | 5000 | | 04-JUN-91 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 2186 | G218611862 | MAGNESIUM | 21.60 | MG/L | | | N | |
| 2186 | 21-86-09-15-87 | MANGANESE | 0.2281 | MG/L | | | N | 15-SEP-87 |
| 2186 | 21-86-01-06-88 | MANGANESE | 0.3760 | MG/L | | | N | 06-JAN-88 |
| 2186 | 21-86-03-22-88 | MANGANESE | 0.2819 | MG/L | | | N | 22-MAR-88 |
| 2186 | 21-86-05-24-88 | MANGANESE | 0.2724 | MG/L | | | N | 24-MAY-88 |
| 2186 | GW01379IT | MANGANESE | 19.50 | UG/L | | 15 | | 04-JUN-91 |
| 2186 | 21-86-03-25-87 | PLUTONIUM-239 | .73 | PCI/L | | | N | 25-MAR-87 |
| 2186 | 21-86-11-29-88 | PLUTONIUM-239 | 0.02 | PCI/L | | | | 29-NOV-88 |
| 2186 | 21-86-11-29-88 | PLUTONIUM-239 | 0.02 | PCI/L | | | N | 29-NOV-88 |
| 2186 | G21861189004 | PLUTONIUM-239 | 0.023 | PCI/L | | 0.00 | | 07-NOV-89 |
| 2186 | G21860290001 | PLUTONIUM-239/240 | +1.852E-0 | PCI /L | | 0.010 | | 28-FEB-90 |
| 2186 | 21-86-06-29-87 | SODIUM | 132.3217 | MG/L | | 2.100 | N | 29-JUN-87 |
| 2186 | G-2186-0510-02-10 | SODIUM | 35400 | UG/L | | 5000 | | 11-MAY-90 |
| 2186 | GW00059IT | SODIUM | 34300.00 | UG/L | | 5000 | | 02-AUG-90 |
| 2186 | GW01379IT | SODIUM | 33800 00 | UG/L | | 5000 | | 04-JUN-91 |
| 2186 | G-2186-0510-02-10 | STRONTIUM | 406 | UG/L | | 100 | | 11-MAY-90 |
| 2186 | GW00059IT | STRONTIUM | 374.00 | UG/L | E | 200 | | 02-AUG-90 |
| 2186 | GW01379IT | STRONTIUM | 379.00 | UG/L | | 200 | | 04-JUN-91 |
| 2186 | 21-86-03-25-87 | STRONTIUM-90 | 2.51 | PCI/L | | | N | 25-MAR-87 |
| 2186 | 21-86-09-15-87 | SULFATE | 68 | MG/L | | 1 0 | | 15-SEP-87 |
| 2186 | G-2186-0510-02-10 | SULFATE | 6820 | MG/L | | 2000 | | 11-MAY-90 |
| 2186 | 21-86-03-25-87 | URANIUM-233,-234 | 4.8 | PCI/L | | | N | 25-MAR-87 |
| 2186 | 21-86-06-29-87 | URANIUM-233,-234 | 1.8 | PCI/L | | | N | 29-JUN-87 |
| 2186 | 21-86-09-15-87 | URANIUM-233,-234 | 2 4 | PCI/L | | | N | 15-SEP-87 |
| 2186 | 21-86-01-06-88 | URANIUM-233,-234 | 1.2 | PCI/L | | | N | 06-JAN-88 |
| 2186 | 21-86-03-22-88 | URANIUM-233,-234 | 2 0 | PCI/L | | | N | 22-MAR-88 |
| 2186 | 21-86-05-24-88 | URANIUM-233,-234 | 1 3 | PCI/L | | | N | 24-MAY-88 |
| 2186 | 21-86-09-15-88 | URANIUM-233,-234 | 1 4 | PCI/L | | | | 15-SEP-88 |
| 2186 | 21-86-09-15-88 | URANIUM-233,-234 | 1.4 | PCI/L | | | N | 15-SEP-88 |
| 2186 | 21-86-11-29-88 | URANIUM-233,-234 | 0.6 | PCI/L | | | | 29-NOV-88 |
| 2186 | 21-86-11-29-88 | URANIUM-233,-234 | 0 6 | PCI/L | | | N | 29-NOV-88 |
| 2186 | 21-86-08-29-89 | URANIUM-233,-234 | 1 56 | PCI/L | | 0 | | 29-AUG-89 |
| 2186 | 21-86-08-29-89-FD | URANIUM-233,-234 | 0.82 | PCI/L | | 0.64 | | 29-AUG-89 |
| 2186 | 21-86-08-28-89D | URANIUM-233,-234 | 0.82 | PCI/L | | 0 64 | | 29-AUG-89 |
| 2186 | G21861189004 | URANIUM-233,-234 | 1.09 | PCI/L | | 0.85 | | 07-NOV-89 |
| 2186 | G21860290001 | URANIUM-233,-234 | +8 133E-0 | PCI /L | | 0 117 | | 28-FEB-90 |
| 2186 | GW00635IT | URANIUM-233,-234 | .8721 | PCI/L | X | .6 | | 06-NOV-90 |
| 2186 | G218611860 | URANIUM-233,-234 | 6.1 | PCI/L | | | N | |
| 2186 | G218611862 | URANIUM-233,-234 | 8 2 | PCI/L | | | N | |
| 2186 | G-2186-0510-02-10 | ZINC | 65.6 | UG/L | | 20 | | 11-MAY-90 |
| 2786 | 27-86-04-15-87 | AMERICIUM-241 | 0.2 | PCI/L | | | N | 15-APR-87 |
| 2786 | 27-86-06-24-87 | AMERICIUM-241 | 0.2 | PCI/L | | | N | 24-JUN-87 |
| 2786 | G-2786-0514-02-09 | CALCIUM | 56000 | UG/L | | 5000 | | 14-MAY-90 |
| 2786 | GW00664IT | CALCIUM | 56700 | UG/L | | 5000 | | 13-NOV-90 |
| 2786 | GW01200IT | CALCIUM | 46900 00 | UG/L | | 5000 | | 24-APR-91 |
| 2786 | GW01391IT | CALCIUM | 45900.00 | UG/L | | 5000 | | 11-JUN-91 |
| 2786 | 27-86-03-22-88 | COPPER | 0.0477 | MG/L | | | N | 22-MAR-88 |
| 2786 | 27-86-05-19-88 | COPPER | 0 1120 | MG/L | | | N | 19-MAY-88 |
| 2786 | 27-86-09-13-88 | COPPER | 0.0903 | MG/L | | | N | 13-SEP-88 |
| 2786 | 27-86-05-18-89 | COPPER | 0 0700 | MG/L | | | | 18-MAY-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 2786 | 27-86-03-19-87 | GROSS BETA PARTICLE | 73 | PCI/L | | | N | 19-MAR-87 |
| 2786 | 27-86-04-15-87 | MAGNESIUM | 16.3832 | MG/L | | 0.020 | N | 15-APR-87 |
| 2786 | G-2786-0514-02-09 | MAGNESIUM | 16600 | UG/L | | 5000 | | 14-MAY-90 |
| 2786 | GW00664IT | MAGNESIUM | 14600 | UG/L | | 5000 | | 13-NOV-90 |
| 2786 | GW01200IT | MAGNESIUM | 14100 00 | UG/L | | 5000 | | 24-APR-91 |
| 2786 | GW01391IT | MAGNESIUM | 14300 00 | UG/L | | 5000 | | 11-JUN-91 |
| 2786 | G-2786-0514-02-09 | MANGANESE | 106 | UG/L | | 15 | | 14-MAY-90 |
| 2786 | GW00664IT | MANGANESE | 77.5 | UG/L | | 20 | | 13-NOV-90 |
| 2786 | GW01200IT | MANGANESE | 53.80 | UG/L | | 15 | | 24-APR-91 |
| 2786 | GW01391IT | MANGANESE | 52.30 | UG/L | | 15 | | 11-JUN-91 |
| 2786 | 27-86-03-19-87 | NICKEL | 0.1271 | MG/L | | 0.037 | N | 19-MAR-87 |
| 2786 | 27-86-04-15-87 | NICKEL | 0.1869 | MG/L | | 0.037 | N | 15-APR-87 |
| 2786 | 27-86-06-24-87 | NICKEL | 0 1158 | MG/L | | 0.037 | N | 24-JUN-87 |
| 2786 | 27-86-09-23-87 | NICKEL | 0.0993 | MG/L | | | N | 23-SEP-87 |
| 2786 | 27-86-12-17-87 | NICKEL | 0.0622 | MG/L | | | N | 17-DEC-87 |
| 2786 | 27-86-05-19-88 | NICKEL | 0.0475 | MG/L | | | N | 19-MAY-88 |
| 2786 | 27-86-09-13-88 | NICKEL | 0.0500 | MG/L | | | N | 13-SEP-88 |
| 2786 | 27-86-05-18-89 | NICKEL | 0.0756 | MG/L | | | | 18-MAY-89 |
| 2786 | 27-86-06-24-87 | PLUTONIUM-239 | 0.5 | PCI/L | | | N | 24-JUN-87 |
| 2786 | 27-86-05-19-88 | PLUTONIUM-239 | 0.02 | PCI/L | | 0 15 | N | 19-MAY-88 |
| 2786 | GW00664IT | POTASSIUM | 6270 | UG/L | | 5000 | | 13-NOV-90 |
| 2786 | 27-86-03-19-87 | SODIUM | 259.9004 | MG/L | | 2.100 | N | 19-MAR-87 |
| 2786 | 27-86-04-15-87 | SODIUM | 247.4084 | MG/L | | 2.100 | N | 15-APR-87 |
| 2786 | 27-86-06-24-87 | SODIUM | 219 6025 | MG/L | | 2.100 | N | 24-JUN-87 |
| 2786 | 27-86-09-23-87 | SODIUM | 200.8369 | MG/L | | | N | 23-SEP-87 |
| 2786 | 27-86-12-17-87 | SODIUM | 205.7062 | MG/L | | | N | 17-DEC-87 |
| 2786 | 27-86-03-22-88 | SODIUM | 201.6286 | MG/L | | | N | 22-MAR-88 |
| 2786 | 27-86-05-19-88 | SODIUM | 209 3877 | MG/L | | | N | 19-MAY-88 |
| 2786 | 27-86-09-13-88 | SODIUM | 210.8754 | MG/L | | | N | 13-SEP-88 |
| 2786 | 27-86-05-18-89 | SODIUM | 215.4379 | MG/L | | | | 18-MAY-89 |
| 2786 | G27861089004 | SODIUM | 197.00 | MG/L | | 5000 | | 15-NOV-89 |
| 2786 | G-2786-0514-02-09 | SODIUM | 251000 | UG/L | | 5000 | | 14-MAY-90 |
| 2786 | GW00664IT | SODIUM | 236000 | UG/L | | 5000 | | 13-NOV-90 |
| 2786 | GW01200IT | SODIUM | 226000.00 | UG/L | | 5000 | | 24-APR-91 |
| 2786 | GW01391IT | SODIUM | 218000 00 | UG/L | | 5000 | | 11-JUN-91 |
| 2786 | G-2786-0514-02-09 | STRONTIUM | 737 | UG/L | | 100 | | 14-MAY-90 |
| 2786 | GW00664IT | STRONTIUM | 656 | UG/L | | 200 | | 13-NOV-90 |
| 2786 | GW01200IT | STRONTIUM | 642.00 | UG/L | | 200 | | 24-APR-91 |
| 2786 | GW01391IT | STRONTIUM | 623.00 | UG/L | | 200 | | 11-JUN-91 |
| 2786 | 27-86-03-19-87 | STRONTIUM-90 | 1.8 | PCI/L | | | N | 19-MAR-87 |
| 2786 | 27-86-03-19-87 | SULFATE | 245 | MG/L | | 1.0 | | 19-MAR-87 |
| 2786 | 27-86-04-15-87 | SULFATE | 260 | MG/L | | 1.0 | | 15-APR-87 |
| 2786 | 27-86-06-24-87 | SULFATE | 188 | MG/L | | 1.0 | | 24-JUN-87 |
| 2786 | 27-86-09-23-87 | SULFATE | 340 | MG/L | | 1.0 | | 23-SEP-87 |
| 2786 | 27-86-12-16-87 | SULFATE | 219 | MG/L | | | | 16-DEC-87 |
| 2786 | 27-86-03-22-88 | SULFATE | 220 | MG/L | | | | 22-MAR-88 |
| 2786 | 27-86-05-19-88 | SULFATE | 272 | MG/L | | | | 19-MAY-88 |
| 2786 | 27-86-12-06-88 | SULFATE | 271 | MG/L | R | | | 06-DEC-88 |
| 2786 | 27-86-05-18-89 | SULFATE | 254 | MG/L | V | | | 18-MAY-89 |
| 2786 | 27-86-09-13-89 | SULFATE | 245 | MG/L | | | | 13-SEP-89 |
| 2786 | G27860290001 | SULFATE | 260 | MG/L | | | | 14-FEB-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 2786 | G-2786-0514-02-09 | SULFATE | 241 | MG/L | | 100 | | 14-MAY-90 |
| 2786 | GW01200IT | SULFATE | 240 | MG/L | | 2 0 | | 24-APR-91 |
| 2786 | GW01391IT | SULFATE | 310 | MG/L | | 2 0 | | 11-JUN-91 |
| 2786 | 27-86-03-19-87 | URANIUM-233,-234 | 1.8 | PCI/L | | | N | 19-MAR-87 |
| 2786 | 27-86-04-15-87 | URANIUM-233,-234 | 1.1 | PCI/L | | | N | 15-APR-87 |
| 2786 | 27-86-06-24-87 | URANIUM-233,-234 | 1.7 | PCI/L | | | N | 24-JUN-87 |
| 2786 | 27-86-12-17-87 | URANIUM-233,-234 | .55 | PCI/L | | | N | 17-DEC-87 |
| 2786 | 27-86-05-19-88 | URANIUM-233,-234 | 0.56 | PCI/L | | 0 72 | N | 19-MAY-88 |
| 2786 | 27-86-12-06-88 | URANIUM-233,-234 | 0.5 | PCI/L | | | | 06-DEC-88 |
| 2786 | 27-86-12-06-88 | URANIUM-233,-234 | 0.5 | PCI/L | | | N | 06-DEC-88 |
| 2786 | 27-86-09-13-89 | URANIUM-233,-234 | 1.04 | PCI/L | | 0 | | 13-SEP-89 |
| 2786 | G278610089004 | URANIUM-233,-234 | .4 | PCI/L | | 1 | | 15-NOV-89 |
| 2786 | G27861089004 | URANIUM-233,-234 | 1.0 | PCI/L | | .2 | | 15-NOV-89 |
| 2786 | G2786029000 | URANIUM-233,-234 | 1.4 | PCI/L | | .3 | | 14-FEB-90 |
| 2786 | 27-86-04-15-87 | ZINC | 0 3 | MG/L | | 0 02 | N | 15-APR-87 |
| 2786 | G-2786-0514-02-09 | ZINC | 58.1 | UG/L | | 20 | | 14-MAY-90 |
| 2886 | G28860290001 | AMERICIUM-241 | .020 | PCI/L | | .012 | | 13-FEB-90 |
| 2886 | 28-86-06-24-87 | BARIUM | 0.3422 | MG/L | | 0 100 | N | 24-JUN-87 |
| 2886 | 28-86-03-19-87 | BICARBONATE | 381 | MG/L | | 1.0 | | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | BICARBONATE | 636 | MG/L | | 1.0 | | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | BICARBONATE | 314 | MG/L | | | | 17-MAR-88 |
| 2886 | 28-86-05-18-89 | BICARBONATE | 440 | MG/L | V | | | 18-MAY-89 |
| 2886 | 28-86-09-13-89 | BICARBONATE | 468 | MG/L | | | | 13-SEP-89 |
| 2886 | G-2886-0515-02-10 | BICARBONATE AS CACO3 | 442 | MG/L | | 2 | | 15-MAY-90 |
| 2886 | GW00094IT | BICARBONATE AS CACO3 | 490 | MG/L | | 1.0 | | 03-AUG-90 |
| 2886 | GW00665IT | BICARBONATE AS CACO3 | 480 | MG/L | | 1 | | 13-NOV-90 |
| 2886 | GW01189IT | BICARBONATE AS CACO3 | 400 | MG/L | | 1.0 | | 23-APR-91 |
| 2886 | GW01393IT | BICARBONATE AS CACO3 | 340 | MG/L | | 1.0 | | 10-JUN-91 |
| 2886 | 28-86-03-19-87 | CALCIUM | 346 9876 | MG/L | | 0.750 | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | CALCIUM | 812 6987 | MG/L | | 0 750 | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | CALCIUM | 479 1007 | MG/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | CALCIUM | 297.9092 | MG/L | | | N | 07-SEP-88 |
| 2886 | 28-86-05-18-89 | CALCIUM | 132.8396 | MG/L | | | | 18-MAY-89 |
| 2886 | G-2886-0515-02-10 | CALCIUM | 99600 | UG/L | | 5000 | | 15-MAY-90 |
| 2886 | GW00094IT | CALCIUM | 123000.00 | UG/L | | 5000 | | 03-AUG-90 |
| 2886 | GW00665IT | CALCIUM | 171000 | UG/L | | 5000 | | 13-NOV-90 |
| 2886 | GW01189IT | CALCIUM | 89300.00 | UG/L | | 5000 | | 23-APR-91 |
| 2886 | GW01393IT | CALCIUM | 55800 00 | UG/L | | 5000 | | 10-JUN-91 |
| 2886 | GW00094IT | CHROMIUM | 24.70 | UG/L | | 10 | | 03-AUG-90 |
| 2886 | 28-86-03-17-88 | COBALT | 0.0502 | MG/L | | | N | 17-MAR-88 |
| 2886 | GW00665IT | COPPER | 32.2 | UG/L | | 25 | | 13-NOV-90 |
| 2886 | GW01189IT | CYANIDE | 9.50 | UG/L | | 10.00 | | 23-APR-91 |
| 2886 | GW01393IT | CYANIDE | 12.00 | UG/L | | 10 | | 10-JUN-91 |
| 2886 | G-2886-0515-02-10 | CYANIDE | 10.5 | UG/L | | 10 | | 15-MAY-90 |
| 2886 | GW00094IT | GROSS ALPHA - DISSOL | 219 | PCI/L | | 2 | | 03-AUG-90 |
| 2886 | GW00665IT | GROSS ALPHA - DISSOL | 337.6 | PCI/L | | 2 | | 13-NOV-90 |
| 2886 | 28-86-03-19-87 | GROSS ALPHA PARTICLE | 797 | PCI/L | | | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | GROSS ALPHA PARTICLE | 2000 | PCI/L | | | N | 24-JUN-87 |
| 2886 | 28-86-09-07-88 | GROSS ALPHA PARTICLE | 720 | PCI/L | | | | 07-SEP-88 |
| 2886 | 28-86-09-07-88 | GROSS ALPHA PARTICLE | 720 | PCI/L | | | N | 07-SEP-88 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 2886 | 28-86-05-18-89 | GROSS ALPHA PARTICLE | 773 | PCI/L | | 15 | | 18-MAY-89 |
| 2886 | 28-86-05-18-89 | GROSS ALPHA PARTICLE | 773 | PCI/L | | 15 | | 18-MAY-89 |
| 2886 | 28-86-09-13-89 | GROSS ALPHA PARTICLE | 229 | PCI/L | | 5 | | 13-SEP-89 |
| 2886 | 28-86-09-13-89 | GROSS ALPHA PARTICLE | 229 | PCI/L | | 5 | | 13-SEP-89 |
| 2886 | G28861189004 | GROSS ALPHA PARTICLE | 480 | PCI/L | | 40 | | 10-NOV-89 |
| 2886 | G2886029000 | GROSS ALPHA PARTICLE | 230 | PCI/L | | 10 | | 13-FEB-90 |
| 2886 | G28860290001 | GROSS ALPHA PARTICLE | 490 | PCI/L | | 20 | | 13-FEB-90 |
| 2886 | GW00094IT | GROSS BETA - DISSOLV | 224 7 | PCI/L | | 4 | | 03-AUG-90 |
| 2886 | GW00665IT | GROSS BETA - DISSOLV | 270.7 | PCI/L | | 4 | | 13-NOV-90 |
| 2886 | 28-86-03-19-87 | GROSS BETA PARTICLE | 368 | PCI/L | | | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | GROSS BETA PARTICLE | 745 | PCI/L | | | N | 24-JUN-87 |
| 2886 | 28-86-09-07-88 | GROSS BETA PARTICLE | 940 | PCI/L | | | | 07-SEP-88 |
| 2886 | 28-86-09-07-88 | GROSS BETA PARTICLE | 940 | PCI/L | | | N | 07-SEP-88 |
| 2886 | 28-86-05-18-89 | GROSS BETA PARTICLE | 407 | PCI/L | | 5 7 | | 18-MAY-89 |
| 2886 | 28-86-05-18-89 | GROSS BETA PARTICLE | 407 | PCI/L | | 5 7 | | 18-MAY-89 |
| 2886 | 28-86-09-13-89 | GROSS BETA PARTICLE | 241 | PCI/L | | 4 | | 13-SEP-89 |
| 2886 | 28-86-09-13-89 | GROSS BETA PARTICLE | 241 | PCI/L | | 4 | | 13-SEP-89 |
| 2886 | G28861189004 | GROSS BETA PARTICLE | 550 | PCI/L | | 40 | | 10-NOV-89 |
| 2886 | G2886029000 | GROSS BETA PARTICLE | 213 | PCI/L | | 9 | | 13-FEB-90 |
| 2886 | G28860290001 | GROSS BETA PARTICLE | 368 | PCI/L | | 9 | | 13-FEB-90 |
| 2886 | G-2886-0515-02-10 | LEAD | 3 | UG/L | | 3 | | 15-MAY-90 |
| 2886 | 28-86-03-17-88 | LITHIUM | 1.4 | MG/L | | | N | 17-MAR-88 |
| 2886 | G-2886-0515-02-10 | LITHIUM | 283 | UG/L | | 100 | | 15-MAY-90 |
| 2886 | GW00094IT | LITHIUM | 271.00 | UG/L | | 100 | | 03-AUG-90 |
| 2886 | GW00665IT | LITHIUM | 337 | UG/L | | 100 | | 13-NOV-90 |
| 2886 | GW01189IT | LITHIUM | 250 00 | UG/L | | 100 | | 23-APR-91 |
| 2886 | GW01393IT | LITHIUM | 168 00 | UG/L | | 100 | | 10-JUN-91 |
| 2886 | 28-86-03-19-87 | MAGNESIUM | 84.9911 | MG/L | | 0 020 | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | MAGNESIUM | 243.2036 | MG/L | | 0.020 | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | MAGNESIUM | 151 2661 | MG/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | MAGNESIUM | 89 2169 | MG/L | | | N | 07-SEP-88 |
| 2886 | 28-86-05-18-89 | MAGNESIUM | 43 8341 | MG/L | | | | 18-MAY-89 |
| 2886 | G-2886-0515-02-10 | MAGNESIUM | 32500 | UG/L | | 5000 | | 15-MAY-90 |
| 2886 | GW00094IT | MAGNESIUM | 38100.00 | UG/L | | 5000 | | 03-AUG-90 |
| 2886 | GW00665IT | MAGNESIUM | 49700 | UG/L | | 5000 | | 13-NOV-90 |
| 2886 | GW01189IT | MAGNESIUM | 28700.00 | UG/L | | 5000 | | 23-APR-91 |
| 2886 | GW01393IT | MAGNESIUM | 17800.00 | UG/L | | 5000 | | 10-JUN-91 |
| 2886 | 28-86-03-19-87 | MANGANESE | 0.7376 | MG/L | | 0.005 | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | MANGANESE | 1 7085 | MG/L | | 0.005 | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | MANGANESE | 1.2420 | MG/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | MANGANESE | 0.6903 | MG/L | | | N | 07-SEP-88 |
| 2886 | 28-86-05-18-89 | MANGANESE | 0.3553 | MG/L | | | | 18-MAY-89 |
| 2886 | G-2886-0515-02-10 | MANGANESE | 265 | UG/L | | 15 | | 15-MAY-90 |
| 2886 | GW00094IT | MANGANESE | 262.00 | UG/L | | 15 | | 03-AUG-90 |
| 2886 | GW00665IT | MANGANESE | 388 | UG/L | | 20 | | 13-NOV-90 |
| 2886 | GW01189IT | MANGANESE | 266.00 | UG/L | | 15 | | 23-APR-91 |
| 2886 | GW01393IT | MANGANESE | 119.00 | UG/L | | 15 | | 10-JUN-91 |
| 2886 | 28-86-03-19-87 | NICKEL | 0 0869 | MG/L | | 0 037 | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | NICKEL | 0 2854 | MG/L | | 0.037 | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | NICKEL | 0.1512 | MG/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | NICKEL | 0.0904 | MG/L | | | N | 07-SEP-88 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 2886 | 28-86-06-24-87 | PLUTONIUM-239 | 0.15 | PCI/L | | | N | 24-JUN-87 |
| 2886 | 28-86-03-19-87 | POTASSIUM | 260.0 | MG/L | | 5.0 | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | POTASSIUM | 250 | MG/L | | 5.0 | N | 24-JUN-87 |
| 2886 | 28-86-09-07-88 | POTASSIUM | 435 | MG/L | | | N | 07-SEP-88 |
| 2886 | 28-86-05-18-89 | POTASSIUM | 280 | MG/L | | | | 18-MAY-89 |
| 2886 | G-2886-0515-02-10 | POTASSIUM | 147000 | UG/L | | 5000 | | 15-MAY-90 |
| 2886 | GW00094IT | POTASSIUM | 147000 00 | UG/L | | 5000 | | 03-AUG-90 |
| 2886 | GW00665IT | POTASSIUM | 190000 | UG/L | | 5000 | | 13-NOV-90 |
| 2886 | GW01189IT | POTASSIUM | 139000.00 | UG/L | | 5000 | | 23-APR-91 |
| 2886 | GW01393IT | POTASSIUM | 101000 00 | UG/L | | 5000 | | 10-JUN-91 |
| 2886 | 28-86-03-19-87 | SODIUM | 1211.5603 | MG/L | | 2.100 | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | SODIUM | 2535 8950 | MG/L | | 2.100 | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | SODIUM | 1800 9309 | MG/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | SODIUM | 1411.3809 | MG/L | | | N | 07-SEP-88 |
| 2886 | 28-86-05-18-89 | SODIUM | 794.3651 | MG/L | | | | 18-MAY-89 |
| 2886 | G-2886-0515-02-10 | SODIUM | 446000 | UG/L | | 5000 | | 15-MAY-90 |
| 2886 | GW00094IT | SODIUM | 383000.00 | UG/L | | 5000 | | 03-AUG-90 |
| 2886 | GW00665IT | SODIUM | 475000 | UG/L | | 5000 | | 13-NOV-90 |
| 2886 | GW01189IT | SODIUM | 388000.00 | UG/L | | 5000 | | 23-APR-91 |
| 2886 | GW01393IT | SODIUM | 276000 00 | UG/L | | 5000 | | 10-JUN-91 |
| 2886 | G-2886-0515-02-10 | STRONTIUM | 869 | UG/L | | 100 | | 15-MAY-90 |
| 2886 | GW00094IT | STRONTIUM | 1010.00 | UG/L | | 200 | | 03-AUG-90 |
| 2886 | GW00665IT | STRONTIUM | 1280 | UG/L | | 200 | | 13-NOV-90 |
| 2886 | GW01189IT | STRONTIUM | 753.00 | UG/L | | 200 | | 23-APR-91 |
| 2886 | GW01393IT | STRONTIUM | 479.00 | UG/L | | 200 | | 10-JUN-91 |
| 2886 | 28-86-03-19-87 | STRONTIUM-90 | 6 0 | PCI/L | | | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | STRONTIUM-90 | 2 9 | PCI/L | | | N | 24-JUN-87 |
| 2886 | 28-86-03-19-87 | SULFATE | 290 | MG/L | | 1.0 | | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | SULFATE | 390 | MG/L | | 1.0 | | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | SULFATE | 335 | MG/L | | | | 17-MAR-88 |
| 2886 | 28-86-05-18-89 | SULFATE | 182 | MG/L | V | | | 18-MAY-89 |
| 2886 | 28-86-09-13-89 | SULFATE | 132 | MG/L | | | | 13-SEP-89 |
| 2886 | G-2886-0515-02-10 | SULFATE | 106 | MG/L | | 25 | | 15-MAY-90 |
| 2886 | GW01189IT | SULFATE | 110 | MG/L | | 2.0 | | 23-APR-91 |
| 2886 | GW01393IT | SULFATE | 76 | MG/L | | 2.0 | | 10-JUN-91 |
| 2886 | 28-86-03-19-87 | TRITIUM | 6300 | PCI/L | | | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | TRITIUM | 12000 | PCI/L | | | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | TRITIUM | 9000 | PCI/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | TRITIUM | 5900 | PCI/L | | | N | 07-SEP-88 |
| 2886 | 28-86-05-18-89 | TRITIUM | 2900 | PCI/L | | | | 18-MAY-89 |
| 2886 | 28-86-05-18-89 | TRITIUM | 2900 | PCI/L | | | | 18-MAY-89 |
| 2886 | GW00094IT | TRITIUM | 800 4 | PCI/L | | 400 | | 03-AUG-90 |
| 2886 | GW00665IT | TRITIUM | 1557 | PCI/L | | 400 | | 13-NOV-90 |
| 2886 | 28-86-03-19-87 | URANIUM-233,-234 | 211 | PCI/L | | | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | URANIUM-233,-234 | 1000 | PCI/L | | | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | URANIUM-233,-234 | 3.2 | PCI/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | URANIUM-233,-234 | 250 | PCI/L | | | | 07-SEP-88 |
| 2886 | 28-86-09-07-88 | URANIUM-233,-234 | 250 | PCI/L | | | N | 07-SEP-88 |
| 2886 | 28-86-09-13-89 | URANIUM-233,-234 | 175 | PCI/L | | 0.26 | | 13-SEP-89 |
| 2886 | G28861189004 | URANIUM-233,-234 | 250 | PCI/L | | 2 | | 10-NOV-89 |
| 2886 | G2886029000 | URANIUM-233,-234 | 290 | PCI/L | | 1 | | 13-FEB-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 2886 | GW00094IT | URANIUM-233,-234 | 155.6 | PCI/L | | .6 | | 03-AUG-90 |
| 2886 | GW00665IT | URANIUM-233,-234 | 195.1 | PCI/L | | .6 | | 13-NOV-90 |
| 2886 | 28-86-03-19-87 | URANIUM-235 | 7.7 | PCI/L | | | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | URANIUM-235 | 47 | PCI/L | | | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | URANIUM-235 | 12 | PCI/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | URANIUM-235 | 8.3 | PCI/L | | | | 07-SEP-88 |
| 2886 | 28-86-09-07-88 | URANIUM-235 | 8.3 | PCI/L | | | N | 07-SEP-88 |
| 2886 | 28-86-09-13-89 | URANIUM-235 | 9.66 | PCI/L | | 0 | | 13-SEP-89 |
| 2886 | G28861189004 | URANIUM-235 | 11 | PCI/L | | 2 | | 10-NOV-89 |
| 2886 | G2886029000 | URANIUM-235 | 9 | PCI/L | | .1 | | 13-FEB-90 |
| 2886 | GW00094IT | URANIUM-235 | 5.176 | PCI/L | | .6 | | 03-AUG-90 |
| 2886 | GW00665IT | URANIUM-235 | 7.907 | PCI/L | | .6 | | 13-NOV-90 |
| 2886 | 28-86-03-19-87 | URANIUM-238 | 142 | PCI/L | | | N | 19-MAR-87 |
| 2886 | 28-86-06-24-87 | URANIUM-238 | 750 | PCI/L | | | N | 24-JUN-87 |
| 2886 | 28-86-03-17-88 | URANIUM-238 | 220 | PCI/L | | | N | 17-MAR-88 |
| 2886 | 28-86-09-07-88 | URANIUM-238 | 170 | PCI/L | | | | 07-SEP-88 |
| 2886 | 28-86-09-07-88 | URANIUM-238 | 170 | PCI/L | | | N | 07-SEP-88 |
| 2886 | 28-86-09-13-89 | URANIUM-238 | 116 | PCI/L | | 0 | | 13-SEP-89 |
| 2886 | G28861189004 | URANIUM-238 | 190 | PCI/L | | 6 | | 10-NOV-89 |
| 2886 | G2886029000 | URANIUM-238 | 190 | PCI/L | | 1 | | 13-FEB-90 |
| 2886 | GW00094IT | URANIUM-238 | 104.4 | PCI/L | | .6 | | 03-AUG-90 |
| 2886 | GW00665IT | URANIUM-238 | 135 1 | PCI/L | | .6 | | 13-NOV-90 |
| 2886 | GW00094IT | ZINC | 26.90 | UG/L | | 20 | | 03-AUG-90 |
| 2886 | GW00665IT | ZINC | 66.0 | UG/L | | 20 | | 13-NOV-90 |
| 2886 | GW01189IT | ZINC | 24 30 | UG/L | | 20.00 | | 23-APR-91 |
| 5287 | G52871089003 | ALUMINUM | .388 | MG/L | | 200 | A | 26-OCT-89 |
| 5287 | 52-87-04-19-88 | AMERICIUM-241 | 0 02 | PCI/L | | 0.79 | N | 19-APR-88 |
| 5287 | 52-87-10-18-88 | AMERICIUM-241 | .04 | PCI/L | | | | 18-OCT-88 |
| 5287 | 52-87-02-13-88 | BICARBONATE | 502 | MG/L | | | | 13-FEB-88 |
| 5287 | 52-87-04-19-88 | BICARBONATE | 359 | MG/L | | | | 19-APR-88 |
| 5287 | 52-87-07-19-88 | BICARBONATE | 460 | MG/L | | | | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | BICARBONATE | 443 | MG/L | A | | | 18-OCT-88 |
| 5287 | 52-87-01-16-89 | BICARBONATE | 398 | MG/L | V | | A | 16-JAN-89 |
| 5287 | 52-87-04-20-89 | BICARBONATE | 461 | MG/L | V | | | 20-APR-89 |
| 5287 | 52-87-07-25-89 | BICARBONATE | 508 | MG/L | | | | 25-JUL-89 |
| 5287 | G52871089003 | BICARBONATE | 520 | MG/L | A | | | 26-OCT-89 |
| 5287 | G52870190001 | BICARBONATE | 570 | MG/L | | | | 29-JAN-90 |
| 5287 | G-5287-0621-02-14 | BICARBONATE AS CACO3 | 482 | MG/L | | 2 | | 21-JUN-90 |
| 5287 | GW00301IT | BICARBONATE AS CACO3 | 480 | MG/L | | 1.0 | | 24-AUG-90 |
| 5287 | GW00797IT | BICARBONATE AS CACO3 | 490 | MG/L | | 1.0 | | 11-DEC-90 |
| 5287 | GW01044IT | BICARBONATE AS CACO3 | 460 | MG/L | | 1 | | 26-MAR-91 |
| 5287 | GW01390IT | BICARBONATE AS CACO3 | 490 | MG/L | | 1.0 | | 07-JUN-91 |
| 5287 | 52-87-11-24-87 | CALCIUM | 85 6972 | MG/L | | | N | 24-NOV-87 |
| 5287 | 52-87-02-13-88 | CALCIUM | 104.3593 | MG/L | | | N | 13-FEB-88 |
| 5287 | 52-87-04-19-88 | CALCIUM | 110.5478 | MG/L | | MG/L | N | 19-APR-88 |
| 5287 | 52-87-07-19-88 | CALCIUM | 113 3889 | MG/L | | | N | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | CALCIUM | 106 9126 | MG/L | | | N | 18-OCT-88 |
| 5287 | 52-87-01-16-89 | CALCIUM | 97 1 | MG/L | V | | A | 16-JAN-89 |
| 5287 | 52-87-04-20-89 | CALCIUM | 111.9362 | MG/L | | | | 20-APR-89 |
| 5287 | G528706890010 | CALCIUM | 118 00 | MG/L | A | 5000 | A | 12-JUN-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 5287 | 52-87-07-25-89 | CALCIUM | 108 1291 | MG/L | | | | 25-JUL-89 |
| 5287 | G52870889002 | CALCIUM | 125.00 | MG/L | V | 5000 | A | 14-AUG-89 |
| 5287 | G52871089003 | CALCIUM | 117.00 | MG/L | | 5000 | A | 26-OCT-89 |
| 5287 | G-5287-0621-02-14 | CALCIUM | 119000 | UG/L | | 5000 | | 21-JUN-90 |
| 5287 | GW00301IT | CALCIUM | 113000.00 | UG/L | | 5000 | | 24-AUG-90 |
| 5287 | GW00797IT | CALCIUM | 115000.00 | UG/L | | 5000 | | 11-DEC-90 |
| 5287 | GW01044IT | CALCIUM | 122000 | UG/L | | 5000 | | 26-MAR-91 |
| 5287 | GW01390IT | CALCIUM | 120000 00 | UG/L | | 5000 | | 07-JUN-91 |
| 5287 | GW00301IT | CHROMIUM | 10.90 | UG/L | | 10 | | 24-AUG-90 |
| 5287 | GW00797IT | CHROMIUM | 14 10 | UG/L | | 10 | | 11-DEC-90 |
| 5287 | 52-87-04-20-89 | COPPER | 0.0587 | MG/L | | | | 20-APR-89 |
| 5287 | G52871089003 | COPPER | .0482 | MG/L | | 25 0 | A | 26-OCT-89 |
| 5287 | 52-87-11-24-87 | GROSS ALPHA PARTICLE | 70 | PCI/L | | | N | 24-NOV-87 |
| 5287 | G52870689001D | GROSS ALPHA PARTICLE | 62 | PCI/L | | | | 12-JUN-89 |
| 5287 | G52870889002 | GROSS ALPHA PARTICLE | 59 | PCI/L | | 12 | | 14-AUG-89 |
| 5287 | 52-87-11-24-87 | GROSS BETA PARTICLE | 76 | PCI/L | | | N | 24-NOV-87 |
| 5287 | 52-87-11-24-87 | MAGNESIUM | 19.5478 | MG/L | | | N | 24-NOV-87 |
| 5287 | 52-87-02-13-88 | MAGNESIUM | 25.0742 | MG/L | | | N | 13-FEB-88 |
| 5287 | 52-87-04-19-88 | MAGNESIUM | 31.2190 | MG/L | | MG/L | N | 19-APR-88 |
| 5287 | 52-87-07-19-88 | MAGNESIUM | 31 6869 | MG/L | | | N | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | MAGNESIUM | 26 1864 | MG/L | | | N | 18-OCT-88 |
| 5287 | 52-87-01-16-89 | MAGNESIUM | 23 9 | MG/L | V | | A | 16-JAN-89 |
| 5287 | 52-87-04-20-89 | MAGNESIUM | 26.4394 | MG/L | | | | 20-APR-89 |
| 5287 | G52870689001D | MAGNESIUM | 31.50 | MG/L | V | 5000 | A | 12-JUN-89 |
| 5287 | 52-87-07-25-89 | MAGNESIUM | 29.2514 | MG/L | | | | 25-JUL-89 |
| 5287 | G52870889002 | MAGNESIUM | 32.50 | MG/L | V | 5000 | A | 14-AUG-89 |
| 5287 | G52871089003 | MAGNESIUM | 31.50 | MG/L | | 5000 | A | 26-OCT-89 |
| 5287 | G-5287-0621-02-14 | MAGNESIUM | 31900 | UG/L | | 5000 | | 21-JUN-90 |
| 5287 | GW00301IT | MAGNESIUM | 30400.00 | UG/L | | 5000 | | 24-AUG-90 |
| 5287 | GW00797IT | MAGNESIUM | 30600 00 | UG/L | | 5000 | | 11-DEC-90 |
| 5287 | GW01044IT | MAGNESIUM | 31200 | UG/L | | 5000 | | 26-MAR-91 |
| 5287 | GW01390IT | MAGNESIUM | 31600.00 | UG/L | | 5000 | | 07-JUN-91 |
| 5287 | 52-87-11-24-87 | MANGANESE | 0.2171 | MG/L | | | N | 24-NOV-87 |
| 5287 | 52-87-02-13-88 | MANGANESE | 0.7556 | MG/L | | | N | 13-FEB-88 |
| 5287 | 52-87-04-19-88 | MANGANESE | 0.4838 | MG/L | | MG/L | N | 19-APR-88 |
| 5287 | 52-87-07-19-88 | MANGANESE | 0.5079 | MG/L | | | N | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | MANGANESE | 0.7057 | MG/L | | | N | 18-OCT-88 |
| 5287 | G52870689001D | MANGANESE | .250 | MG/L | V | 15.0 | A | 12-JUN-89 |
| 5287 | G52870889002 | MANGANESE | .234 | MG/L | V | 15.0 | A | 14-AUG-89 |
| 5287 | G-5287-0621-02-14 | MANGANESE | 28.3 | UG/L | | 15 | | 21-JUN-90 |
| 5287 | GW00301IT | MANGANESE | 90.20 | UG/L | | 15 | | 24-AUG-90 |
| 5287 | GW00797IT | MANGANESE | 62.90 | UG/L | | 15 | | 11-DEC-90 |
| 5287 | GW01044IT | MANGANESE | 27.0 | UG/L | | 15 | | 26-MAR-91 |
| 5287 | GW01390IT | MANGANESE | 18.80 | UG/L | | 15 | | 07-JUN-91 |
| 5287 | GW01044IT | MERCURY | 0 40 | UG/L | | 0.2 | | 26-MAR-91 |
| 5287 | 52-87-07-19-88 | NICKEL | 0.1102 | MG/L | | | N | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | NICKEL | 0 0504 | MG/L | | | N | 18-OCT-88 |
| 5287 | 52-87-04-20-89 | NICKEL | 0 1321 | MG/L | | | | 20-APR-89 |
| 5287 | 52-87-10-18-88 | PLUTONIUM-239 | .02 | PCI/L | | | | 18-OCT-88 |
| 5287 | 52-87-11-24-87 | SODIUM | 124 7997 | MG/L | | | N | 24-NOV-87 |
| 5287 | 52-87-02-13-88 | SODIUM | 166.3747 | MG/L | | | N | 13-FEB-88 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 5287 | 52-87-04-19-88 | SODIUM | 164.5510 | MG/L | | MG/L | N | 19-APR-88 |
| 5287 | 52-87-07-19-88 | SODIUM | 173.5700 | MG/L | | | N | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | SODIUM | 184 7438 | MG/L | | | N | 18-OCT-88 |
| 5287 | 52-87-01-16-89 | SODIUM | 166 | MG/L | V | | A | 16-JAN-89 |
| 5287 | 52-87-04-20-89 | SODIUM | 169.9652 | MG/L | | | | 20-APR-89 |
| 5287 | G52870689001D | SODIUM | 158.00 | MG/L | V | 5000 | A | 12-JUN-89 |
| 5287 | 52-87-07-25-89 | SODIUM | 178.1291 | MG/L | | | | 25-JUL-89 |
| 5287 | G52870889002 | SODIUM | 181.00 | MG/L | V | 5000 | A | 14-AUG-89 |
| 5287 | G52871089003 | SODIUM | 203.00 | MG/L | | 5000 | A | 26-OCT-89 |
| 5287 | G-5287-0621-02-14 | SODIUM | 194000 | UG/L | | 5000 | | 21-JUN-90 |
| 5287 | GW00301IT | SODIUM | 184000.00 | UG/L | | 5000 | | 24-AUG-90 |
| 5287 | GW00797IT | SODIUM | 187000.00 | UG/L | | 5000 | | 11-DEC-90 |
| 5287 | GW01044IT | SODIUM | 180000 | UG/L | | 5000 | | 26-MAR-91 |
| 5287 | GW01390IT | SODIUM | 204000.00 | UG/L | | 5000 | | 07-JUN-91 |
| 5287 | G-5287-0621-02-14 | STRONTIUM | 777 | UG/L | | 100 | | 21-JUN-90 |
| 5287 | GW00301IT | STRONTIUM | 760.00 | UG/L | | 200 | | 24-AUG-90 |
| 5287 | GW00797IT | STRONTIUM | 771.00 | UG/L | | 200 | | 11-DEC-90 |
| 5287 | GW01044IT | STRONTIUM | 712 | UG/L | | 200 | | 26-MAR-91 |
| 5287 | GW01390IT | STRONTIUM | 811 00 | UG/L | | 200 | | 07-JUN-91 |
| 5287 | 52-87-11-23-87 | SULFATE | 133 | MG/L | | | | 23-NOV-87 |
| 5287 | 52-87-02-13-88 | SULFATE | 186 | MG/L | | | | 13-FEB-88 |
| 5287 | 52-87-04-19-88 | SULFATE | 241 | MG/L | | | | 19-APR-88 |
| 5287 | 52-87-07-19-88 | SULFATE | 225 | MG/L | | | | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | SULFATE | 197 | MG/L | A | | | 18-OCT-88 |
| 5287 | 52-87-01-16-89 | SULFATE | 587 | MG/L | V | | A | 16-JAN-89 |
| 5287 | 52-87-04-20-89 | SULFATE | 214 | MG/L | A | | | 20-APR-89 |
| 5287 | 52-87-07-25-89 | SULFATE | 221 | MG/L | | | | 25-JUL-89 |
| 5287 | G52871089003 | SULFATE | 240 | MG/L | A | | | 26-OCT-89 |
| 5287 | G52870190001 | SULFATE | 240 | MG/L | | | | 29-JAN-90 |
| 5287 | G-5287-0621-02-14 | SULFATE | 240 | MG/L | | 50 | | 21-JUN-90 |
| 5287 | GW00301IT | SULFATE | 240 | MG/L | | 2.0 | | 24-AUG-90 |
| 5287 | GW00797IT | SULFATE | 180 | MG/L | | 2 0 | | 11-DEC-90 |
| 5287 | GW01044IT | SULFATE | 230 | MG/L | | 0.2/4 | | 26-MAR-91 |
| 5287 | GW01390IT | SULFATE | 220 | MG/L | | 2.0 | | 07-JUN-91 |
| 5287 | G52870889002 | TRITIUM | 380 | PCI/L | | 27 | | 14-AUG-89 |
| 5287 | 52-87-11-24-87 | URANIUM-233,-234 | 21 | PCI/L | | | N | 24-NOV-87 |
| 5287 | 52-87-02-13-88 | URANIUM-233,-234 | 4.7 | PCI/L | | | N | 13-FEB-88 |
| 5287 | 52-87-04-19-88 | URANIUM-233,-234 | 29 | PCI/L | | | N | 19-APR-88 |
| 5287 | 52-87-07-19-88 | URANIUM-233,-234 | 28 | | | | V | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | URANIUM-233,-234 | 22.6 | PCI/L | | | | 18-OCT-88 |
| 5287 | G52870689001 | URANIUM-233,-234 | 31 | PCI/L | | | | 12-JUN-89 |
| 5287 | G52870689001D | URANIUM-233,-234 | 37 | PCI/L | | | | 12-JUN-89 |
| 5287 | G52870889002 | URANIUM-233,-234 | 33 | PCI/L | | 0. | | 14-AUG-89 |
| 5287 | GW00797IT | URANIUM-233,-234 | 27.67 | PCI/L | | .6 | | 11-DEC-90 |
| 5287 | G52870689001D | URANIUM-238 | 26 | PCI/L | | | | 12-JUN-89 |
| 5287 | 52-87-07-19-88 | ZINC | 0.2643 | MG/L | | | N | 19-JUL-88 |
| 5287 | 52-87-10-18-88 | ZINC | 0.1537 | MG/L | | | N | 18-OCT-88 |
| 5287 | 52-87-04-20-89 | ZINC | 0.3786 | MG/L | | | | 20-APR-89 |
| 5287 | G52871089003 | ZINC | .288 | MG/L | | 20 0 | A | 26-OCT-89 |
| 5287 | G-5287-0621-02-14 | ZINC | 54.2 | UG/L | | 20 | | 21-JUN-90 |
| 5287 | GW00301IT | ZINC | 30 50 | UG/L | | 20 | | 24-AUG-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| 5287 | GW00797IT | ZINC | 52.30 | UG/L | | 20 | | 11-DEC-90 |
| 5287 | GW01044IT | ZINC | 51.6 | UG/L | | 20 | | 26-MAR-91 |
| 5287 | GW01390IT | ZINC | 42.10 | UG/L | | 20 | | 07-JUN-91 |
| 5387 | G53870190001 | BICARBONATE | 570 | MG/L | | | | 30-JAN-90 |
| 5387 | G-5387-0501-02-13 | BICARBONATE AS CACO3 | 440 | MG/L | | 10 | | 03-MAY-90 |
| 5387 | GW01281IT | BICARBONATE AS CACO3 | 410 | MG/L | | 1.0 | | 14-MAY-91 |
| 5387 | G53870689001 | CALCIUM | 131 00 | MG/L | A | 5000 | A | 08-JUN-89 |
| 5387 | G-5387-0501-02-13 | CALCIUM | 105000 | UG/L | | 28 8 | | 03-MAY-90 |
| 5387 | G53870689001 | COPPER | .122 | MG/L | V | 25.0 | A | 08-JUN-89 |
| 5387 | G-5387-0501-02-13 | COPPER | 106 | UG/L | | 2 5 | | 03-MAY-90 |
| 5387 | G-5387-0501-02-13 | LITHIUM | 15 7 | UG/L | | 2 | | 03-MAY-90 |
| 5387 | G53870689001 | MAGNESIUM | 37.60 | MG/L | A | 5000 | A | 08-JUN-89 |
| 5387 | G-5387-0501-02-13 | MAGNESIUM | 31600 | UG/L | | 19.4 | | 03-MAY-90 |
| 5387 | G53870689001 | NICKEL | .345 | MG/L | V | 40.0 | A | 08-JUN-89 |
| 5387 | G-5387-0501-02-13 | NICKEL | 115 | UG/L | | 5.5 | | 03-MAY-90 |
| 5387 | G53870689001 | SODIUM | 109.00 | MG/L | V | 5000 | A | 08-JUN-89 |
| 5387 | G-5387-0501-02-13 | SODIUM | 93600 | UG/L | | 30 4 | | 03-MAY-90 |
| 5387 | G53870190001 | SULFATE | 240 | MG/L | | | | 30-JAN-90 |
| 5387 | GW01281IT | SULFATE | 210 | MG/L | | 2.0 | | 14-MAY-91 |
| 5387 | GW00127IT | URANIUM-233,-234 | 10.17 | PCI/L | | .6 | | 31-JUL-90 |
| 5387 | G53870689001 | ZINC | .970 | MG/L | V | 20.0 | A | 08-JUN-89 |
| 5387 | G-5387-0501-02-13 | ZINC | 266 | UG/L | | 9.0 | | 03-MAY-90 |
| 5487 | G54870689001 | CALCIUM | 141.00 | MG/L | V | 500 | A | 08-JUN-89 |
| 5487 | G54870689001 | COPPER | 3.13 | MG/L | V | 25 0 | A | 08-JUN-89 |
| 5487 | G54870689001 | MAGNESIUM | 32.90 | MG/L | V | 500 | A | 08-JUN-89 |
| 5487 | G54870689001 | NICKEL | 11.70 | MG/L | V | 40 0 | A | 08-JUN-89 |
| 5487 | G54870689001 | SODIUM | 98.60 | MG/L | V | 500 | A | 08-JUN-89 |
| 5487 | G54870689001 | URANIUM-233,-234 | 0 1 | PCI/L | | | | 08-JUN-89 |
| P114789 | PZ43891115 | ALUMINUM | 2480 | UG/G | V | 38.7 | A | 28-SEP-89 |
| P114789 | PZ43891519 | ALUMINUM | 4180 | UG/G | V | 39.4 | A | 28-SEP-89 |
| P114789 | PZ43891922 | ALUMINUM | 5480 | UG/G | | 40 6 | | 28-SEP-89 |
| P114789 | PZ43892631 | ALUMINUM | 5980 | UG/G | V | 48.5 | A | 28-SEP-89 |
| P114789 | PZ43892226 | ALUMINUM | 4600 | UG/G | V | 34.3 | A | 28-SEP-89 |
| P114789 | PZ43890003 | ALUMINUM | 7130 | UG/G | V | 33.9 | A | 28-SEP-89 |
| P114789 | PZ43890307 | ALUMINUM | 9730 | UG/G | V | 37.4 | A | 28-SEP-89 |
| P114789 | PZ43890711 | ALUMINUM | 4330 | UG/G | V | 39.0 | A | 28-SEP-89 |
| P114789 | PZ43890003 | ARSENIC | 4.7 | UG/G | A | 3.9 | A | 28-SEP-89 |
| P114789 | PZ43890003 | BARIUM | 51.3 | UG/G | V | 33.9 | A | 28-SEP-89 |
| P114789 | PZ43890711 | BARIUM | 57.8 | UG/G | V | 39 0 | A | 28-SEP-89 |
| P114789 | PZ43890307 | BARIUM | 75.3 | UG/G | V | 37.4 | A | 28-SEP-89 |
| P114789 | PZ43892631 | BARIUM | 116 | UG/G | V | 48.5 | A | 28-SEP-89 |
| P114789 | PZ43892226 | BARIUM | 69.5 | UG/G | V | 34 3 | A | 28-SEP-89 |
| P114789 | PZ43891922 | BARIUM | 63.1 | UG/G | | 40.6 | | 28-SEP-89 |
| P114789 | PZ43891519 | BARIUM | 86.4 | UG/G | V | 39.4 | A | 28-SEP-89 |
| P114789 | PZ43890307 | BERYLLIUM | 1.2 | UG/G | A | 0.94 | A | 28-SEP-89 |
| P114789 | PZ43891115 | CALCIUM | 1160 | UG/G | A | 966 | A | 28-SEP-89 |
| P114789 | PZ43892631 | CALCIUM | 5560 | UG/G | A | 1210 | A | 28-SEP-89 |
| P114789 | PZ43892226 | CALCIUM | 3120 | UG/G | A | 856 | A | 28-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P114789 | PZ43891922 | CALCIUM | 2140 | UG/G | | 1010 | | 28-SEP-89 |
| P114789 | PZ43891519 | CALCIUM | 1560 | UG/G | A | 984 | A | 28-SEP-89 |
| P114789 | PZ43890003 | CALCIUM | 2300 | UG/G | A | 846 | A | 28-SEP-89 |
| P114789 | PZ43890711 | CALCIUM | 2090 | UG/G | A | 974 | A | 28-SEP-89 |
| P114789 | PZ43890307 | CALCIUM | 3290 | UG/G | A | 935 | A | 28-SEP-89 |
| P114789 | PZ43891115 | CHROMIUM | 4.7 | UG/G | V | 1.9 | A | 28-SEP-89 |
| P114789 | PZ43892631 | CHROMIUM | 9.1 | UG/G | V | 2 4 | A | 28-SEP-89 |
| P114789 | PZ43891519 | CHROMIUM | 8.3 | UG/G | V | 2.0 | A | 28-SEP-89 |
| P114789 | PZ43892226 | CHROMIUM | 8.7 | UG/G | V | 1.7 | A | 28-SEP-89 |
| P114789 | PZ43891922 | CHROMIUM | 6.6 | UG/G | | 2.0 | | 28-SEP-89 |
| P114789 | PZ43890003 | CHROMIUM | 12.6 | UG/G | V | 1.7 | A | 28-SEP-89 |
| P114789 | PZ43890307 | CHROMIUM | 13.0 | UG/G | V | 1.9 | A | 28-SEP-89 |
| P114789 | PZ43890711 | CHROMIUM | 7.6 | UG/G | V | 1.9 | A | 28-SEP-89 |
| P114789 | PZ43890307 | COBALT | 9 5 | UG/G | V | 9.4 | A | 28-SEP-89 |
| P114789 | PZ43890711 | COBALT | 10.7 | UG/G | V | 9.7 | A | 28-SEP-89 |
| P114789 | PZ43891115 | COPPER | 7.1 | UG/G | A | 4.8 | A | 28-SEP-89 |
| P114789 | PZ43892631 | COPPER | 39.4 | UG/G | A | 6.1 | A | 28-SEP-89 |
| P114789 | PZ43892226 | COPPER | 13.1 | UG/G | A | 4.3 | A | 28-SEP-89 |
| P114789 | PZ43891922 | COPPER | 11 5 | UG/G | | 5.1 | | 28-SEP-89 |
| P114789 | PZ43891519 | COPPER | 12.2 | UG/G | A | 4.9 | A | 28-SEP-89 |
| P114789 | PZ43890003 | COPPER | 13.2 | UG/G | A | 4 2 | A | 28-SEP-89 |
| P114789 | PZ43890307 | COPPER | 17.0 | UG/G | A | 4.7 | A | 28-SEP-89 |
| P114789 | PZ43890711 | COPPER | 10 9 | UG/G | A | 4.9 | A | 28-SEP-89 |
| P114789 | PZ43890003 | IRON | 10200 | UG/G | V | 16.9 | A | 28-SEP-89 |
| P114789 | PZ43891115 | IRON | 4380 | UG/G | V | 19 3 | A | 28-SEP-89 |
| P114789 | PZ43890711 | IRON | 8480 | UG/G | V | 19.5 | A | 28-SEP-89 |
| P114789 | PZ43890307 | IRON | 15600 | UG/G | V | 18.7 | A | 28-SEP-89 |
| P114789 | PZ43891519 | IRON | 8130 | UG/G | V | 19.7 | A | 28-SEP-89 |
| P114789 | PZ43891922 | IRON | 9080 | UG/G | | 20.3 | | 28-SEP-89 |
| P114789 | PZ43892226 | IRON | 9320 | UG/G | V | 17 1 | A | 28-SEP-89 |
| P114789 | PZ43892631 | IRON | 24500 | UG/G | V | 24.2 | A | 28-SEP-89 |
| P114789 | PZ43891519 | LEAD | 3.6 | UG/G | A | 1 1 | A | 28-SEP-89 |
| P114789 | PZ43891922 | LEAD | 11.1 | UG/G | | 1.5 | | 28-SEP-89 |
| P114789 | PZ43892226 | LEAD | 8.6 | UG/G | A | 1.4 | A | 28-SEP-89 |
| P114789 | PZ43892631 | LEAD | 11.7 | UG/G | A | 1.3 | A | 28-SEP-89 |
| P114789 | PZ43890003 | LEAD | 8.0 | UG/G | A | 1.2 | A | 28-SEP-89 |
| P114789 | PZ43890711 | LEAD | 1.5 | UG/G | A | 0.70 | A | 28-SEP-89 |
| P114789 | PZ43891115 | LEAD | 2.9 | UG/G | A | 0.90 | A | 28-SEP-89 |
| P114789 | PZ43890307 | LEAD | 4.1 | UG/G | A | 0.59 | A | 28-SEP-89 |
| P114789 | PZ43891519 | MAGNESIUM | 1870 | UG/G | A | 984 | A | 28-SEP-89 |
| P114789 | PZ43892631 | MAGNESIUM | 2390 | UG/G | A | 1210 | A | 28-SEP-89 |
| P114789 | PZ43892226 | MAGNESIUM | 1710 | UG/G | A | 856 | A | 28-SEP-89 |
| P114789 | PZ43891922 | MAGNESIUM | 1990 | UG/G | | 1010 | | 28-SEP-89 |
| P114789 | PZ43890003 | MAGNESIUM | 1470 | UG/G | A | 846 | A | 28-SEP-89 |
| P114789 | PZ43890711 | MAGNESIUM | 1260 | UG/G | A | 974 | A | 28-SEP-89 |
| P114789 | PZ43890307 | MAGNESIUM | 2320 | UG/G | A | 935 | A | 28-SEP-89 |
| P114789 | PZ43890003 | MANGANESE | 141 | UG/G | A | 2.5 | A | 28-SEP-89 |
| P114789 | PZ43891519 | MANGANESE | 358 | UG/G | A | 3.0 | A | 28-SEP-89 |
| P114789 | PZ43890307 | MANGANESE | 199 | UG/G | A | 2 8 | A | 28-SEP-89 |
| P114789 | PZ43890711 | MANGANESE | 268 | UG/G | A | 2.9 | A | 28-SEP-89 |
| P114789 | PZ43891115 | MANGANESE | 44 3 | UG/G | A | 2.9 | A | 28-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P114789 | PZ43891922 | MANGANESE | 190 | UG/G | | 3.0 | | 28-SEP-89 |
| P114789 | PZ43892631 | MANGANESE | 209 | UG/G | A | 3.6 | A | 28-SEP-89 |
| P114789 | PZ43892226 | MANGANESE | 177 | UG/G | A | 2.6 | A | 28-SEP-89 |
| P114789 | PZ43891922 | NICKEL | 12.6 | UG/G | | 8 1 | | 28-SEP-89 |
| P114789 | PZ43892226 | NICKEL | 13 7 | UG/G | A | 6.9 | A | 28-SEP-89 |
| P114789 | PZ43892631 | NICKEL | 28 1 | UG/G | A | 9.7 | A | 28-SEP-89 |
| P114789 | PZ43890003 | NICKEL | 8.0 | UG/G | A | 6.8 | A | 28-SEP-89 |
| P114789 | PZ43891519 | NICKEL | 16 3 | UG/G | A | 7.9 | A | 28-SEP-89 |
| P114789 | PZ43890711 | NICKEL | 14.9 | UG/G | A | 7.8 | A | 28-SEP-89 |
| P114789 | PZ43890307 | NICKEL | 20.8 | UG/G | A | 7.5 | A | 28-SEP-89 |
| P114789 | PZ43890003 | PLUTONIUM-239 | 0.090 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43890307 | PLUTONIUM-239 | 0.022 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43890003 | POTASSIUM | 1010 | UG/G | A | 846 | A | 28-SEP-89 |
| P114789 | PZ43890307 | POTASSIUM | 988 | UG/G | A | 935 | A | 28-SEP-89 |
| P114789 | PZ43890307 | STRONTIUM | 22.0 | UG/G | A | 18.7 | A | 28-SEP-89 |
| P114789 | PZ43892226 | STRONTIUM | 20 6 | UG/G | A | 17.1 | A | 28-SEP-89 |
| P114789 | PZ43892631 | STRONTIUM | 49.2 | UG/G | A | 24.2 | A | 28-SEP-89 |
| P114789 | PZ43890003 | STRONTIUM-90 | 1.50 | PCI/G | | 0. | | 28-SEP-89 |
| P114789 | PZ43891519 | STRONTIUM-90 | 2 19 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43891922 | STRONTIUM-90 | 1.76 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43890003 | TIN | 27 8 | UG/G | A | 16.9 | A | 28-SEP-89 |
| P114789 | PZ43890307 | TIN | 37.5 | UG/G | A | 18 7 | A | 28-SEP-89 |
| P114789 | PZ43890711 | TIN | 25.4 | UG/G | A | 19.5 | A | 28-SEP-89 |
| P114789 | PZ43891922 | TIN | 23 4 | UG/G | | 20.3 | | 28-SEP-89 |
| P114789 | PZ43891519 | TIN | 23 6 | UG/G | A | 19 7 | A | 28-SEP-89 |
| P114789 | PZ43892226 | TIN | 27.1 | UG/G | A | 17.1 | A | 28-SEP-89 |
| P114789 | PZ43892631 | TIN | 41 4 | UG/G | A | 24.2 | A | 28-SEP-89 |
| P114789 | PZ43892631 | URANIUM-233,-234 | 0.64 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43890003 | URANIUM-233,-234 | 0.80 | PCI/G | | 0. | | 28-SEP-89 |
| P114789 | PZ43892226 | URANIUM-233,-234 | 0.39 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43891922 | URANIUM-233,-234 | 0 54 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43891519 | URANIUM-233,-234 | 0.47 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43891115 | URANIUM-233,-234 | 0 66 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43890307 | URANIUM-233,-234 | 0.38 | PCI/G | | 0. | | 28-SEP-89 |
| P114789 | PZ43890711 | URANIUM-233,-234 | 0 49 | PCI/G | | 0 | | 28-SEP-89 |
| P114789 | PZ43892226 | VANADIUM | 19 6 | UG/G | V | 8.6 | A | 28-SEP-89 |
| P114789 | PZ43892631 | VANADIUM | 41.4 | UG/G | V | 12.1 | A | 28-SEP-89 |
| P114789 | PZ43890003 | VANADIUM | 25 4 | UG/G | V | 8.5 | A | 28-SEP-89 |
| P114789 | PZ43891115 | VANADIUM | 14 4 | UG/G | V | 9.7 | A | 28-SEP-89 |
| P114789 | PZ43890711 | VANADIUM | 27.2 | UG/G | V | 9.7 | A | 28-SEP-89 |
| P114789 | PZ43890307 | VANADIUM | 38 9 | UG/G | V | 9.4 | A | 28-SEP-89 |
| P114789 | PZ43891519 | VANADIUM | 23.3 | UG/G | V | 9 8 | A | 28-SEP-89 |
| P114789 | PZ43891922 | VANADIUM | 18.3 | UG/G | | 10.1 | | 28-SEP-89 |
| P114789 | PZ43890003 | ZINC | 31 8 | UG/G | A | 3 4 | A | 28-SEP-89 |
| P114789 | PZ43890711 | ZINC | 18.3 | UG/G | A | 3.9 | A | 28-SEP-89 |
| P114789 | PZ43890307 | ZINC | 24.0 | UG/G | A | 3.7 | A | 28-SEP-89 |
| P114789 | PZ43891922 | ZINC | 25 8 | UG/G | | 4.1 | | 28-SEP-89 |
| P114789 | PZ43891115 | ZINC | 11 6 | UG/G | A | 3 9 | A | 28-SEP-89 |
| P114789 | PZ43891519 | ZINC | 23.9 | UG/G | A | 3.9 | A | 28-SEP-89 |
| P114789 | PZ43892226 | ZINC | 34.6 | UG/G | A | 3.4 | A | 28-SEP-89 |
| P114789 | PZ43892631 | ZINC | 108 | UG/G | A | 4.8 | A | 28-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P114789 | PZ43890003 | pH | 8 6 | PHUNIT | | | | 28-SEP-89 |
| P114789 | PZ43890307 | pH | 8.3 | PHUNIT | | | | 28-SEP-89 |
| P114889 | PZ44891318 | ALUMINUM | 17100 | UG/G | | 45.0 | | 22-SEP-89 |
| P114889 | PZ44890003 | ALUMINUM | 17500 | UG/G | | 45.2 | | 22-SEP-89 |
| P114889 | PZ44890306 | ALUMINUM | 6380 | UG/G | | 41.9 | | 22-SEP-89 |
| P114889 | PZ44890913 | ALUMINUM | 13600 | UG/G | | 45.1 | | 22-SEP-89 |
| P114889 | PZ44890003 | ANTIMONY | 15 8 | UG/G | | 13.6 | | 22-SEP-89 |
| P114889 | PZ44890913 | ANTIMONY | 13.9 | UG/G | | 13.5 | | 22-SEP-89 |
| P114889 | PZ44891318 | ANTIMONY | 20 8 | UG/G | | 13.5 | | 22-SEP-89 |
| P114889 | PZ44891318 | ARSENIC | 8.9 | UG/G | | 2.4 | | 22-SEP-89 |
| P114889 | PZ44890913 | ARSENIC | 5.1 | UG/G | | 2.0 | | 22-SEP-89 |
| P114889 | PZ44890003 | BARIUM | 63 5 | UG/G | | 45.2 | | 22-SEP-89 |
| P114889 | PZ44890913 | BARIUM | 46.8 | UG/G | | 45.1 | | 22-SEP-89 |
| P114889 | PZ44891318 | BARIUM | 79 5 | UG/G | | 45.0 | | 22-SEP-89 |
| P114889 | PZ44891318 | BERYLLIUM | 1.1 | UG/G | | 1.1 | | 22-SEP-89 |
| P114889 | PZ44890003 | BERYLLIUM | 1.2 | UG/G | | 1.1 | | 22-SEP-89 |
| P114889 | PZ44891318 | CALCIUM | 4460 | UG/G | | 1120 | | 22-SEP-89 |
| P114889 | PZ44890003 | CALCIUM | 3820 | UG/G | | 1130 | | 22-SEP-89 |
| P114889 | PZ44890306 | CALCIUM | 1100 | UG/G | | 1050 | | 22-SEP-89 |
| P114889 | PZ44890913 | CALCIUM | 2320 | UG/G | | 1130 | | 22-SEP-89 |
| P114889 | PZ44891318 | CHROMIUM | 17.0 | UG/G | | 2.2 | | 22-SEP-89 |
| P114889 | PZ44890003 | CHROMIUM | 11.7 | UG/G | | 2.3 | | 22-SEP-89 |
| P114889 | PZ44890306 | CHROMIUM | 7 5 | UG/G | | 2.1 | | 22-SEP-89 |
| P114889 | PZ44890913 | CHROMIUM | 10.2 | UG/G | | 2.3 | | 22-SEP-89 |
| P114889 | PZ44890003 | COPPER | 14.4 | UG/G | | 5.6 | | 22-SEP-89 |
| P114889 | PZ44890913 | COPPER | 7 0 | UG/G | | 5 6 | | 22-SEP-89 |
| P114889 | PZ44891318 | COPPER | 16.3 | UG/G | | 5.6 | | 22-SEP-89 |
| P114889 | PZ44890003 | IRON | 15200 | UG/G | | 22 6 | | 22-SEP-89 |
| P114889 | PZ44891318 | IRON | 21400 | UG/G | | 22.5 | | 22-SEP-89 |
| P114889 | PZ44890913 | IRON | 12900 | UG/G | | 22.6 | | 22-SEP-89 |
| P114889 | PZ44890306 | IRON | 4680 | UG/G | | 20 9 | | 22-SEP-89 |
| P114889 | PZ44890003 | LEAD | 3.9 | UG/G | | 1.1 | | 22-SEP-89 |
| P114889 | PZ44891318 | LEAD | 9 7 | UG/G | | 2.4 | | 22-SEP-89 |
| P114889 | PZ44890913 | LEAD | 6.9 | UG/G | | 2.0 | | 22-SEP-89 |
| P114889 | PZ44890306 | LEAD | 2.9 | UG/G | | 0.96 | | 22-SEP-89 |
| P114889 | PZ44890003 | MAGNESIUM | 2800 | UG/G | | 1130 | | 22-SEP-89 |
| P114889 | PZ44890913 | MAGNESIUM | 2210 | UG/G | | 1130 | | 22-SEP-89 |
| P114889 | PZ44891318 | MAGNESIUM | 4270 | UG/G | | 1120 | | 22-SEP-89 |
| P114889 | PZ44890003 | MANGANESE | 187 | UG/G | | 3 4 | | 22-SEP-89 |
| P114889 | PZ44890306 | MANGANESE | 39.3 | UG/G | | 3.1 | | 22-SEP-89 |
| P114889 | PZ44891318 | MANGANESE | 87.9 | UG/G | | 3.4 | | 22-SEP-89 |
| P114889 | PZ44890913 | MANGANESE | 69.6 | UG/G | | 3.4 | | 22-SEP-89 |
| P114889 | PZ44891318 | NICKEL | 16.6 | UG/G | | 9.0 | | 22-SEP-89 |
| P114889 | PZ44890913 | NICKEL | 10.1 | UG/G | | 9.0 | | 22-SEP-89 |
| P114889 | PZ44890003 | PLUTONIUM-239 | 0.022 | PCI/G | | 0 | | 22-SEP-89 |
| P114889 | PZ44890306 | PLUTONIUM-239 | 0 025 | PCI/G | | 0 | | 22-SEP-89 |
| P114889 | PZ44890003 | POTASSIUM | 1460 | UG/G | | 1130 | | 22-SEP-89 |
| P114889 | PZ44891318 | POTASSIUM | 2190 | UG/G | | 1120 | | 22-SEP-89 |
| P114889 | PZ44890913 | POTASSIUM | 1190 | UG/G | | 1130 | | 22-SEP-89 |
| P114889 | PZ44890003 | URANIUM-233,-234 | 1 16 | PCI/G | | 0 | | 22-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P114889 | PZ44890306 | URANIUM-233,-234 | 0.71 | PCI/G | | 0 | | 22-SEP-89 |
| P114889 | PZ44890608 | URANIUM-233,-234 | 0.51 | PCI/G | | 0 | | 22-SEP-89 |
| P114889 | PZ44890913 | URANIUM-233,-234 | 0.37 | PCI/G | | 0 | | 22-SEP-89 |
| P114889 | PZ44890913D | URANIUM-233,-234 | 0.80 | PCI/G | | 0 | | 22-SEP-89 |
| P114889 | PZ44891318 | URANIUM-233,-234 | 0.86 | PCI/G | | 0. | | 22-SEP-89 |
| P114889 | PZ44890003 | VANADIUM | 26.9 | UG/G | | 11.3 | | 22-SEP-89 |
| P114889 | PZ44891318 | VANADIUM | 49.6 | UG/G | | 11.2 | | 22-SEP-89 |
| P114889 | PZ44890913 | VANADIUM | 24.9 | UG/G | | 11.3 | | 22-SEP-89 |
| P114889 | PZ44890003 | ZINC | 50.2 | UG/G | | 4.5 | | 22-SEP-89 |
| P114889 | PZ44890306 | ZINC | 31.8 | UG/G | | 4.2 | | 22-SEP-89 |
| P114889 | PZ44891318 | ZINC | 54.9 | UG/G | | 4.5 | | 22-SEP-89 |
| P114889 | PZ44890913 | ZINC | 25.4 | UG/G | | 4.5 | | 22-SEP-89 |
| P115489 | PZ49892631 | ALUMINUM | 4280 | UG/G | | 39.1 | | 20-SEP-89 |
| P115489 | PZ49890812 | ALUMINUM | 5230 | UG/G | | 33 5 | | 20-SEP-89 |
| P115489 | PZ49891214 | ALUMINUM | 6210 | UG/G | | 40.6 | | 20-SEP-89 |
| P115489 | PZ49891822 | ALUMINUM | 7930 | UG/G | | 32.6 | | 20-SEP-89 |
| P115489 | PZ49892226 | ALUMINUM | 5220 | UG/G | | 32.9 | | 20-SEP-89 |
| P115489 | PZ49891418 | ALUMINUM | 7810 | UG/G | | 44 3 | | 20-SEP-89 |
| P115489 | PZ49890003 | ALUMINUM | 17100 | UG/G | | 38.9 | | 20-SEP-89 |
| P115489 | PZ49890306 | ALUMINUM | 10600 | UG/G | | 41 9 | | 20-SEP-89 |
| P115489 | PZ49890608 | ALUMINUM | 5980 | UG/G | | 35.3 | | 20-SEP-89 |
| P115489 | PZ49892631 | ARSENIC | 5.9 | UG/G | | 3.4 | | 20-SEP-89 |
| P115489 | PZ49890812 | ARSENIC | 3 6 | UG/G | | 2 0 | | 20-SEP-89 |
| P115489 | PZ49891822 | ARSENIC | 7.1 | UG/G | | 2.3 | | 20-SEP-89 |
| P115489 | PZ49891418 | ARSENIC | 6.7 | UG/G | | 2.1 | | 20-SEP-89 |
| P115489 | PZ49890003 | ARSENIC | 2 0 | UG/G | | 1 9 | | 20-SEP-89 |
| P115489 | PZ49890608 | ARSENIC | 2 5 | UG/G | | 1.9 | | 20-SEP-89 |
| P115489 | PZ49890003 | BARIUM | 89.2 | UG/G | | 38 9 | | 20-SEP-89 |
| P115489 | PZ49890608 | BARIUM | 44 8 | UG/G | | 35.3 | | 20-SEP-89 |
| P115489 | PZ49890306 | BARIUM | 56.9 | UG/G | | 41.9 | | 20-SEP-89 |
| P115489 | PZ49890812 | BARIUM | 41.2 | UG/G | | 33.5 | | 20-SEP-89 |
| P115489 | PZ49891214 | BARIUM | 66 3 | UG/G | | 40 6 | | 20-SEP-89 |
| P115489 | PZ49891822 | BARIUM | 73.8 | UG/G | | 32 6 | | 20-SEP-89 |
| P115489 | PZ49892226 | BARIUM | 52.7 | UG/G | | 32.9 | | 20-SEP-89 |
| P115489 | PZ49891418 | BARIUM | 86.7 | UG/G | | 44.3 | | 20-SEP-89 |
| P115489 | PZ49892631 | BARIUM | 93.2 | UG/G | | 39.1 | | 20-SEP-89 |
| P115489 | PZ49891822 | BERYLLIUM | 0.82 | UG/G | | 0.82 | | 20-SEP-89 |
| P115489 | PZ49891418 | BERYLLIUM | 1 1 | UG/G | | 1.1 | | 20-SEP-89 |
| P115489 | PZ49891214 | BERYLLIUM | 1.4 | UG/G | | 1.0 | | 20-SEP-89 |
| P115489 | PZ49890003 | BERYLLIUM | 2.0 | UG/G | | 0.97 | | 20-SEP-89 |
| P115489 | PZ49890306 | BERYLLIUM | 1.8 | UG/G | | 1 0 | | 20-SEP-89 |
| P115489 | PZ49892631 | CALCIUM | 5600 | UG/G | | 978 | | 20-SEP-89 |
| P115489 | PZ49890812 | CALCIUM | 2390 | UG/G | | 838 | | 20-SEP-89 |
| P115489 | PZ49892226 | CALCIUM | 3660 | UG/G | | 822 | | 20-SEP-89 |
| P115489 | PZ49891214 | CALCIUM | 2620 | UG/G | | 1020 | | 20-SEP-89 |
| P115489 | PZ49891822 | CALCIUM | 4390 | UG/G | | 816 | | 20-SEP-89 |
| P115489 | PZ49891418 | CALCIUM | 4400 | UG/G | | 1110 | | 20-SEP-89 |
| P115489 | PZ49890003 | CALCIUM | 3110 | UG/G | | 972 | | 20-SEP-89 |
| P115489 | PZ49890306 | CALCIUM | 23000 | UG/G | | 1050 | | 20-SEP-89 |
| P115489 | PZ49890608 | CALCIUM | 43800 | UG/G | | 882 | | 20-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P115489 | PZ49890812 | CHROMIUM | 12.4 | UG/G | | 1.7 | | 20-SEP-89 |
| P115489 | PZ49892631 | CHROMIUM | 6.0 | UG/G | | 2.0 | | 20-SEP-89 |
| P115489 | PZ49892226 | CHROMIUM | 7.9 | UG/G | | 1.6 | | 20-SEP-89 |
| P115489 | PZ49891822 | CHROMIUM | 12.0 | UG/G | | 1.6 | | 20-SEP-89 |
| P115489 | PZ49891418 | CHROMIUM | 12.6 | UG/G | | 2.2 | | 20-SEP-89 |
| P115489 | PZ49891214 | CHROMIUM | 8.0 | UG/G | | 2.0 | | 20-SEP-89 |
| P115489 | PZ49890003 | CHROMIUM | 17 5 | UG/G | | 1.9 | | 20-SEP-89 |
| P115489 | PZ49890306 | CHROMIUM | 9.5 | UG/G | | 2.1 | | 20-SEP-89 |
| P115489 | PZ49890608 | CHROMIUM | 5.4 | UG/G | | 1.8 | | 20-SEP-89 |
| P115489 | PZ49891822 | COBALT | 12.4 | UG/G | | 8.2 | | 20-SEP-89 |
| P115489 | PZ49891214 | COPPER | 11.9 | UG/G | | 5.1 | | 20-SEP-89 |
| P115489 | PZ49892631 | COPPER | 9.9 | UG/G | | 4.9 | | 20-SEP-89 |
| P115489 | PZ49891822 | COPPER | 16 8 | UG/G | | 4 1 | | 20-SEP-89 |
| P115489 | PZ49892226 | COPPER | 16.0 | UG/G | | 4.1 | | 20-SEP-89 |
| P115489 | PZ49891418 | COPPER | 22.4 | UG/G | | 5.5 | | 20-SEP-89 |
| P115489 | PZ49890003 | COPPER | 14 0 | UG/G | | 4.9 | | 20-SEP-89 |
| P115489 | PZ49890306 | COPPER | 28.1 | UG/G | | 5 2 | | 20-SEP-89 |
| P115489 | PZ49890812 | COPPER | 13.8 | UG/G | | 4.2 | | 20-SEP-89 |
| P115489 | PZ49890608 | COPPER | 6.6 | UG/G | | 4 4 | | 20-SEP-89 |
| P115489 | PZ49890003 | IRON | 17900 | UG/G | | 19 4 | | 20-SEP-89 |
| P115489 | PZ49890812 | IRON | 10300 | UG/G | | 16.8 | | 20-SEP-89 |
| P115489 | PZ49890608 | IRON | 6290 | UG/G | | 17.6 | | 20-SEP-89 |
| P115489 | PZ49890306 | IRON | 26700 | UG/G | | 21.0 | | 20-SEP-89 |
| P115489 | PZ49891214 | IRON | 11400 | UG/G | | 20.3 | | 20-SEP-89 |
| P115489 | PZ49891418 | IRON | 15500 | UG/G | | 22.2 | | 20-SEP-89 |
| P115489 | PZ49892631 | IRON | 7270 | UG/G | | 19.6 | | 20-SEP-89 |
| P115489 | PZ49892226 | IRON | 9950 | UG/G | | 16 4 | | 20-SEP-89 |
| P115489 | PZ49891822 | IRON | 10500 | UG/G | | 16 3 | | 20-SEP-89 |
| P115489 | PZ49891418 | LEAD | 16 5 | UG/G | | 3 1 | | 20-SEP-89 |
| P115489 | PZ49891822 | LEAD | 9.6 | UG/G | | 1.4 | | 20-SEP-89 |
| P115489 | PZ49892226 | LEAD | 6.2 | UG/G | | 2.2 | | 20-SEP-89 |
| P115489 | PZ49892631 | LEAD | 19 3 | UG/G | | 2.6 | | 20-SEP-89 |
| P115489 | PZ49890003 | LEAD | 2.0 | UG/G | | 1.1 | | 20-SEP-89 |
| P115489 | PZ49890812 | LEAD | 3.3 | UG/G | | 1.2 | | 20-SEP-89 |
| P115489 | PZ49890608 | LEAD | 4.0 | UG/G | | 2.3 | | 20-SEP-89 |
| P115489 | PZ49890306 | LEAD | 1.6 | UG/G | | 1.3 | | 20-SEP-89 |
| P115489 | PZ49891214 | LEAD | 2.1 | UG/G | | 1.8 | | 20-SEP-89 |
| P115489 | PZ49891418 | MAGNESIUM | 2830 | UG/G | | 1110 | | 20-SEP-89 |
| P115489 | PZ49891822 | MAGNESIUM | 3010 | UG/G | | 816 | | 20-SEP-89 |
| P115489 | PZ49892631 | MAGNESIUM | 1780 | UG/G | | 978 | | 20-SEP-89 |
| P115489 | PZ49892226 | MAGNESIUM | 1560 | UG/G | | 822 | | 20-SEP-89 |
| P115489 | PZ49890003 | MAGNESIUM | 1320 | UG/G | | 972 | | 20-SEP-89 |
| P115489 | PZ49890306 | MAGNESIUM | 2140 | UG/G | | 1050 | | 20-SEP-89 |
| P115489 | PZ49890608 | MAGNESIUM | 2000 | UG/G | | 882 | | 20-SEP-89 |
| P115489 | PZ49891214 | MAGNESIUM | 2060 | UG/G | | 1020 | | 20-SEP-89 |
| P115489 | PZ49890812 | MAGNESIUM | 1180 | UG/G | | 838 | | 20-SEP-89 |
| P115489 | PZ49890003 | MANGANESE | 86 5 | UG/G | | 2.9 | | 20-SEP-89 |
| P115489 | PZ49891214 | MANGANESE | 172 | UG/G | | 3.0 | | 20-SEP-89 |
| P115489 | PZ49890306 | MANGANESE | 48.5 | UG/G | | 3.1 | | 20-SEP-89 |
| P115489 | PZ49890812 | MANGANESE | 106 | UG/G | | 2.5 | | 20-SEP-89 |
| P115489 | PZ49890608 | MANGANESE | 56 3 | UG/G | | 2.6 | | 20-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P115489 | PZ49891418 | MANGANESE | 215 | UG/G | | 3.3 | | 20-SEP-89 |
| P115489 | PZ49892631 | MANGANESE | 202 | UG/G | | 2.9 | | 20-SEP-89 |
| P115489 | PZ49892226 | MANGANESE | 63.5 | UG/G | | 2.5 | | 20-SEP-89 |
| P115489 | PZ49891822 | MANGANESE | 179 | UG/G | | 2 4 | | 20-SEP-89 |
| P115489 | PZ49891418 | NICKEL | 20.5 | UG/G | | 8.9 | | 20-SEP-89 |
| P115489 | PZ49891822 | NICKEL | 15.2 | UG/G | | 6.5 | | 20-SEP-89 |
| P115489 | PZ49892631 | NICKEL | 9.9 | UG/G | | 7.8 | | 20-SEP-89 |
| P115489 | PZ49892226 | NICKEL | 9.2 | UG/G | | 6.6 | | 20-SEP-89 |
| P115489 | PZ49890003 | NICKEL | 16.7 | UG/G | | 7.8 | | 20-SEP-89 |
| P115489 | PZ49890306 | NICKEL | 16.9 | UG/G | | 8 4 | | 20-SEP-89 |
| P115489 | PZ49890812 | NICKEL | 8.5 | UG/G | | 6.7 | | 20-SEP-89 |
| P115489 | PZ49891214 | NICKEL | 13.8 | UG/G | | 8.1 | | 20-SEP-89 |
| P115489 | PZ49890003 | PLUTONIUM-239 | 0 030 | PCI/G | | 0 | | 20-SEP-89 |
| P115489 | PZ49890812 | POTASSIUM | 873 | UG/G | | 838 | | 20-SEP-89 |
| P115489 | PZ49891418 | POTASSIUM | 1380 | UG/G | | 1110 | | 20-SEP-89 |
| P115489 | PZ49891822 | POTASSIUM | 1530 | UG/G | | 816 | | 20-SEP-89 |
| P115489 | PZ49890608 | STRONTIUM | 29.6 | UG/G | | 17.6 | | 20-SEP-89 |
| P115489 | PZ49891418 | STRONTIUM | 24.2 | UG/G | | 22.2 | | 20-SEP-89 |
| P115489 | PZ49890306 | STRONTIUM | 24.2 | UG/G | | 21.0 | | 20-SEP-89 |
| P115489 | PZ49891822 | STRONTIUM | 23.6 | UG/G | | 16.3 | | 20-SEP-89 |
| P115489 | PZ49892631 | STRONTIUM | 38.6 | UG/G | | 19.6 | | 20-SEP-89 |
| P115489 | PZ49892226 | STRONTIUM | 22 3 | UG/G | | 16.4 | | 20-SEP-89 |
| P115489 | PZ49891822 | STRONTIUM-90 | 1.94 | PCI/G | | 0. | | 20-SEP-89 |
| P115489 | PZ49890003 | TIN | 47.9 | UG/G | | 19.4 | | 20-SEP-89 |
| P115489 | PZ49890306 | TIN | 42.0 | UG/G | | 21 0 | | 20-SEP-89 |
| P115489 | PZ49890608 | TIN | 21.9 | UG/G | | 17.6 | | 20-SEP-89 |
| P115489 | PZ49891418 | TIN | 35 8 | UG/G | | 22.2 | | 20-SEP-89 |
| P115489 | PZ49891214 | TIN | 28.8 | UG/G | | 20.3 | | 20-SEP-89 |
| P115489 | PZ49890812 | TIN | 26.0 | UG/G | | 16.8 | | 20-SEP-89 |
| P115489 | PZ49891822 | TIN | 27.4 | UG/G | | 16.3 | | 20-SEP-89 |
| P115489 | PZ49892226 | TIN | 22.9 | UG/G | | 16.4 | | 20-SEP-89 |
| P115489 | PZ49892631 | TIN | 22.5 | UG/G | | 19.6 | | 20-SEP-89 |
| P115489 | PZ49892226 | TRITIUM | 400 | PCI/L | | 52 | | 20-SEP-89 |
| P115489 | PZ49891418 | TRITIUM | 400 | PCI/L | | 42 | | 20-SEP-89 |
| P115489 | PZ49891214 | TRITIUM | 430 | PCI/L | | 45 | | 20-SEP-89 |
| P115489 | PZ49890003 | TRITIUM | 380 | PCI/L | | 52 | | 20-SEP-89 |
| P115489 | PZ49890003 | URANIUM-233,-234 | 1.27 | PCI/G | | 0 | | 20-SEP-89 |
| P115489 | PZ49890306 | URANIUM-233,-234 | 0.72 | PCI/G | | 0. | | 20-SEP-89 |
| P115489 | PZ49890812 | URANIUM-233,-234 | 0.50 | PCI/G | | 0 | | 20-SEP-89 |
| P115489 | PZ49892631 | URANIUM-233,-234 | 1.35 | PCI/G | | 0. | | 20-SEP-89 |
| P115489 | PZ49892226 | URANIUM-233,-234 | 1.68 | PCI/G | | 0. | | 20-SEP-89 |
| P115489 | PZ49891822 | URANIUM-233,-234 | 0.84 | PCI/G | | 0. | | 20-SEP-89 |
| P115489 | PZ49891418 | URANIUM-233,-234 | 0.25 | PCI/G | | 0. | | 20-SEP-89 |
| P115489 | PZ49891214 | URANIUM-233,-234 | 0.47 | PCI/G | | 0. | | 20-SEP-89 |
| P115489 | PZ49891822 | VANADIUM | 23.3 | UG/G | | 8 2 | | 20-SEP-89 |
| P115489 | PZ49892226 | VANADIUM | 27.9 | UG/G | | 8.2 | | 20-SEP-89 |
| P115489 | PZ49892631 | VANADIUM | 14.5 | UG/G | | 9.8 | | 20-SEP-89 |
| P115489 | PZ49890003 | VANADIUM | 52 2 | UG/G | | 9.7 | | 20-SEP-89 |
| P115489 | PZ49891418 | VANADIUM | 42 3 | UG/G | | 11 1 | | 20-SEP-89 |
| P115489 | PZ49891214 | VANADIUM | 35.1 | UG/G | | 10.2 | | 20-SEP-89 |
| P115489 | PZ49890306 | VANADIUM | 77.2 | UG/G | | 10.5 | | 20-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P115489 | PZ49890812 | VANADIUM | 29.9 | UG/G | | 8 4 | | 20-SEP-89 |
| P115489 | PZ49890608 | VANADIUM | 10 2 | UG/G | | 8.8 | | 20-SEP-89 |
| P115489 | PZ49890003 | ZINC | 21.6 | UG/G | | 3.9 | | 20-SEP-89 |
| P115489 | PZ49890306 | ZINC | 22.2 | UG/G | | 4 2 | | 20-SEP-89 |
| P115489 | PZ49891822 | ZINC | 34.8 | UG/G | | 3.3 | | 20-SEP-89 |
| P115489 | PZ49890812 | ZINC | 12.8 | UG/G | | 3.4 | | 20-SEP-89 |
| P115489 | PZ49891418 | ZINC | 40.2 | UG/G | | 4.4 | | 20-SEP-89 |
| P115489 | PZ49891214 | ZINC | 16.8 | UG/G | | 4.1 | | 20-SEP-89 |
| P115489 | PZ49890608 | ZINC | 14.3 | UG/G | | 3.5 | | 20-SEP-89 |
| P115489 | PZ49892226 | ZINC | 27.5 | UG/G | | 3.3 | | 20-SEP-89 |
| P115489 | PZ49892631 | ZINC | 29.2 | UG/G | | 3.9 | | 20-SEP-89 |
| P115489 | PZ49890812 | pH | 8.8 | PHUNIT | | | | 20-SEP-89 |
| P115489 | PZ49890608 | pH | 8.7 | PHUNIT | | | | 20-SEP-89 |
| P115489 | PZ49892631 | pH | 8.3 | PHUNIT | | | | 20-SEP-89 |
| P115489 | PZ49891822 | pH | 8 3 | PHUNIT | | | | 20-SEP-89 |
| P115489 | PZ49891418 | pH | 8.5 | PHUNIT | | | | 20-SEP-89 |
| P115489 | PZ49891214 | pH | 8.5 | PHUNIT | | | | 20-SEP-89 |
| P115589 | PZ50890912 | ALUMINUM | 5060 | UG/G | | 35.1 | | 03-OCT-89 |
| P115589 | PZ50891216 | ALUMINUM | 3230 | UG/G | | 36.5 | | 03-OCT-89 |
| P115589 | PZ50891620 | ALUMINUM | 6520 | UG/G | | 47 1 | | 03-OCT-89 |
| P115589 | PZ50892024 | ALUMINUM | 4250 | UG/G | | 39.7 | | 03-OCT-89 |
| P115589 | PZ50892428 | ALUMINUM | 4450 | UG/G | | 39.4 | | 03-OCT-89 |
| P115589 | PZ50890306 | ALUMINUM | 4250 | UG/G | | 38 3 | | 03-OCT-89 |
| P115589 | PZ50890306D | ALUMINUM | 5620 | UG/G | | 41.8 | | 03-OCT-89 |
| P115589 | PZ50890609 | ALUMINUM | 4310 | UG/G | | 43 2 | | 03-OCT-89 |
| P115589 | PZ50890306 | BARIUM | 46.9 | UG/G | | 38.3 | | 03-OCT-89 |
| P115589 | PZ50890306D | BARIUM | 53 2 | UG/G | | 41 8 | | 03-OCT-89 |
| P115589 | PZ50892428 | BARIUM | 42.5 | UG/G | | 39.4 | | 03-OCT-89 |
| P115589 | PZ50890609 | BARIUM | 52 4 | UG/G | | 43.2 | | 03-OCT-89 |
| P115589 | PZ50891620 | BARIUM | 113 | UG/G | | 47.1 | | 03-OCT-89 |
| P115589 | PZ50890912 | BARIUM | 49.2 | UG/G | | 35.1 | | 03-OCT-89 |
| P115589 | PZ50890609 | CALCIUM | 2000 | UG/G | | 1080 | | 03-OCT-89 |
| P115589 | PZ50891216 | CALCIUM | 1540 | UG/G | | 914 | | 03-OCT-89 |
| P115589 | PZ50892024 | CALCIUM | 2370 | UG/G | | 992 | | 03-OCT-89 |
| P115589 | PZ50891620 | CALCIUM | 3850 | UG/G | | 1180 | | 03-OCT-89 |
| P115589 | PZ50890912 | CALCIUM | 2330 | UG/G | | 877 | | 03-OCT-89 |
| P115589 | PZ50892428 | CALCIUM | 4170 | UG/G | | 986 | | 03-OCT-89 |
| P115589 | PZ50890912 | CHROMIUM | 4.7 | UG/G | | 1.8 | | 03-OCT-89 |
| P115589 | PZ50891216 | CHROMIUM | 4.9 | UG/G | | 1.8 | | 03-OCT-89 |
| P115589 | PZ50892024 | CHROMIUM | 5.8 | UG/G | | 2.0 | | 03-OCT-89 |
| P115589 | PZ50892428 | CHROMIUM | 4.0 | UG/G | | 2.0 | | 03-OCT-89 |
| P115589 | PZ50891620 | CHROMIUM | 8 5 | UG/G | | 2 4 | | 03-OCT-89 |
| P115589 | PZ50890306 | CHROMIUM | 10.0 | UG/G | | 1.9 | | 03-OCT-89 |
| P115589 | PZ50890306D | CHROMIUM | 10.4 | UG/G | | 2.1 | | 03-OCT-89 |
| P115589 | PZ50890609 | CHROMIUM | 7.2 | UG/G | | 2 2 | | 03-OCT-89 |
| P115589 | PZ50891620 | COBALT | 12.0 | UG/G | | 11.8 | | 03-OCT-89 |
| P115589 | PZ50890912 | COPPER | 9.1 | UG/G | | 4.4 | | 03-OCT-89 |
| P115589 | PZ50892428 | COPPER | 21.1 | UG/G | | 4 9 | | 03-OCT-89 |
| P115589 | PZ50892024 | COPPER | 18.2 | UG/G | | 5 0 | | 03-OCT-89 |
| P115589 | PZ50891620 | COPPER | 20.2 | UG/G | | 5.9 | | 03-OCT-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P115589 | PZ50891216 | COPPER | 6.7 | UG/G | | 4.6 | | 03-OCT-89 |
| P115589 | PZ50890306 | COPPER | 6 3 | UG/G | | 4.8 | | 03-OCT-89 |
| P115589 | PZ50890306D | COPPER | 9.4 | UG/G | | 5.2 | | 03-OCT-89 |
| P115589 | PZ50890609 | COPPER | 6.2 | UG/G | | 5.4 | | 03-OCT-89 |
| P115589 | PZ50890306 | IRON | 4170 | UG/G | | 19.1 | | 03-OCT-89 |
| P115589 | PZ50890912 | IRON | 7520 | UG/G | | 17.5 | | 03-OCT-89 |
| P115589 | PZ50890609 | IRON | 5120 | UG/G | | 21.6 | | 03-OCT-89 |
| P115589 | PZ50890306D | IRON | 5550 | UG/G | | 20.9 | | 03-OCT-89 |
| P115589 | PZ50891216 | IRON | 3530 | UG/G | | 18 3 | | 03-OCT-89 |
| P115589 | PZ50891620 | IRON | 10600 | UG/G | | 23.5 | | 03-OCT-89 |
| P115589 | PZ50892024 | IRON | 9860 | UG/G | | 19 8 | | 03-OCT-89 |
| P115589 | PZ50892428 | IRON | 12900 | UG/G | | 19 7 | | 03-OCT-89 |
| P115589 | PZ50891216 | LEAD | 3.1 | UG/G | | 1.2 | | 03-OCT-89 |
| P115589 | PZ50891620 | LEAD | 5 2 | UG/G | | 1 3 | | 03-OCT-89 |
| P115589 | PZ50892428 | LEAD | 10 0 | UG/G | | 2.5 | | 03-OCT-89 |
| P115589 | PZ50892024 | LEAD | 8.3 | UG/G | | 1.3 | | 03-OCT-89 |
| P115589 | PZ50890306 | LEAD | 4.0 | UG/G | | 1.2 | | 03-OCT-89 |
| P115589 | PZ50890912 | LEAD | 4.4 | UG/G | | 1 1 | | 03-OCT-89 |
| P115589 | PZ50890609 | LEAD | 3.9 | UG/G | | 1.0 | | 03-OCT-89 |
| P115589 | PZ50890306D | LEAD | 5 1 | UG/G | | 1.2 | | 03-OCT-89 |
| P115589 | PZ50892428 | MAGNESIUM | 1440 | UG/G | | 986 | | 03-OCT-89 |
| P115589 | PZ50892024 | MAGNESIUM | 1170 | UG/G | | 992 | | 03-OCT-89 |
| P115589 | PZ50891620 | MAGNESIUM | 2460 | UG/G | | 1180 | | 03-OCT-89 |
| P115589 | PZ50890912 | MAGNESIUM | 1360 | UG/G | | 877 | | 03-OCT-89 |
| P115589 | PZ50890306 | MANGANESE | 43.7 | UG/G | | 2 9 | | 03-OCT-89 |
| P115589 | PZ50890306D | MANGANESE | 39 4 | UG/G | | 3.1 | | 03-OCT-89 |
| P115589 | PZ50890912 | MANGANESE | 169 | UG/G | | 2.6 | | 03-OCT-89 |
| P115589 | PZ50890609 | MANGANESE | 167 | UG/G | | 3.2 | | 03-OCT-89 |
| P115589 | PZ50891216 | MANGANESE | 56 9 | UG/G | | 2.7 | | 03-OCT-89 |
| P115589 | PZ50891620 | MANGANESE | 364 | UG/G | | 3 5 | | 03-OCT-89 |
| P115589 | PZ50892024 | MANGANESE | 65.0 | UG/G | | 3.0 | | 03-OCT-89 |
| P115589 | PZ50892428 | MANGANESE | 51.0 | UG/G | | 3.0 | | 03-OCT-89 |
| P115589 | PZ50890306 | MERCURY | 0 14 | UG/G | | 0 11 | | 03-OCT-89 |
| P115589 | PZ50890306D | MERCURY | 0.11 | UG/G | | 0.11 | | 03-OCT-89 |
| P115589 | PZ50891620 | NICKEL | 15.5 | UG/G | | 9 4 | | 03-OCT-89 |
| P115589 | PZ50892428 | NICKEL | 15.1 | UG/G | | 7.9 | | 03-OCT-89 |
| P115589 | PZ50892024 | NICKEL | 10.3 | UG/G | | 7.9 | | 03-OCT-89 |
| P115589 | PZ50890003 | PLUTONIUM-239 | 0.031 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50892428 | PLUTONIUM-239 | 0.019 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50892024 | PLUTONIUM-239 | 0.047 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50891620 | PLUTONIUM-239 | 0.050 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50891216 | PLUTONIUM-239 | 0.046 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50890912 | PLUTONIUM-239 | 0.024 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50890609 | PLUTONIUM-239 | 0.019 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50890306D | PLUTONIUM-239 | 0 020 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50890306 | PLUTONIUM-239 | 0.030 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50890912 | POTASSIUM | 1010 | UG/G | | 877 | | 03-OCT-89 |
| P115589 | PZ50891620 | POTASSIUM | 1720 | UG/G | | 1180 | | 03-OCT-89 |
| P115589 | PZ50892428 | STRONTIUM | 28 3 | UG/G | | 19 7 | | 03-OCT-89 |
| P115589 | PZ50890306 | STRONTIUM-90 | 2.06 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50890912 | STRONTIUM-90 | 1.89 | PCI/G | | 0. | | 03-OCT-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P115589 | PZ50892428 | STRONTIUM-90 | 1.05 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50892024 | STRONTIUM-90 | 1.47 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50891620 | STRONTIUM-90 | 1.49 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50891216 | STRONTIUM-90 | 1.28 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50890306D | TIN | 24 1 | UG/G | | 20.9 | | 03-OCT-89 |
| P115589 | PZ50890609 | TIN | 23.4 | UG/G | | 21.6 | | 03-OCT-89 |
| P115589 | PZ50891216 | TIN | 18.7 | UG/G | | 18 3 | | 03-OCT-89 |
| P115589 | PZ50891620 | TIN | 34.5 | UG/G | | 23.5 | | 03-OCT-89 |
| P115589 | PZ50890912 | TIN | 23 1 | UG/G | | 17.5 | | 03-OCT-89 |
| P115589 | PZ50892024 | TIN | 25.8 | UG/G | | 19.8 | | 03-OCT-89 |
| P115589 | PZ50892428 | TIN | 27.7 | UG/G | | 19.7 | | 03-OCT-89 |
| P115589 | PZ50890003 | URANIUM-233,-234 | 1.10 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50892428 | URANIUM-233,-234 | 0.73 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50892024 | URANIUM-233,-234 | 0 75 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50891620 | URANIUM-233,-234 | 0.42 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50891216 | URANIUM-233,-234 | 0.22 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50890912 | URANIUM-233,-234 | 0.38 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50890609 | URANIUM-233,-234 | 0.55 | PCI/G | | 0. | | 03-OCT-89 |
| P115589 | PZ50890306 | URANIUM-233,-234 | 0.85 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50890306D | URANIUM-233,-234 | 0.84 | PCI/G | | 0 | | 03-OCT-89 |
| P115589 | PZ50891620 | VANADIUM | 32.8 | UG/G | | 11.8 | | 03-OCT-89 |
| P115589 | PZ50892428 | VANADIUM | 40 8 | UG/G | | 9.9 | | 03-OCT-89 |
| P115589 | PZ50892024 | VANADIUM | 33 4 | UG/G | | 9.9 | | 03-OCT-89 |
| P115589 | PZ50890306 | VANADIUM | 12 1 | UG/G | | 9.6 | | 03-OCT-89 |
| P115589 | PZ50891216 | VANADIUM | 11 5 | UG/G | | 9 1 | | 03-OCT-89 |
| P115589 | PZ50890306D | VANADIUM | 16.0 | UG/G | | 10.5 | | 03-OCT-89 |
| P115589 | PZ50890912 | VANADIUM | 24 2 | UG/G | | 8 8 | | 03-OCT-89 |
| P115589 | PZ50890609 | VANADIUM | 16.6 | UG/G | | 10 8 | | 03-OCT-89 |
| P115589 | PZ50890306 | ZINC | 6.9 | UG/G | | 3.8 | | 03-OCT-89 |
| P115589 | PZ50890306D | ZINC | 12 4 | UG/G | | 4.2 | | 03-OCT-89 |
| P115589 | PZ50891620 | ZINC | 37.0 | UG/G | | 4 7 | | 03-OCT-89 |
| P115589 | PZ50890912 | ZINC | 14.3 | UG/G | | 3.5 | | 03-OCT-89 |
| P115589 | PZ50891216 | ZINC | 10 5 | UG/G | | 3 7 | | 03-OCT-89 |
| P115589 | PZ50890609 | ZINC | 15.1 | UG/G | | 4.3 | | 03-OCT-89 |
| P115589 | PZ50892024 | ZINC | 23.0 | UG/G | | 4.0 | | 03-OCT-89 |
| P115589 | PZ50892428 | ZINC | 47.6 | UG/G | | 3 9 | | 03-OCT-89 |
| P119289 | P1192890003 | ALUMINUM | 11200 | UG/G | | 37.2 | | 01-DEC-89 |
| P119289 | P1192890003 | ARSENIC | 4.3 | UG/G | | 2 1 | | 01-DEC-89 |
| P119289 | P1192890003 | BARIUM | 88.3 | UG/G | | 37.2 | | 01-DEC-89 |
| P119289 | P1192890003 | BERYLLIUM | 1.7 | UG/G | | 0.93 | | 01-DEC-89 |
| P119289 | P1192890003 | CALCIUM | 2080 | UG/G | | 931 | | 01-DEC-89 |
| P119289 | P1192890003 | CHROMIUM | 15.7 | UG/G | | 1.9 | | 01-DEC-89 |
| P119289 | P1192890003 | COPPER | 19.1 | UG/G | | 4.7 | | 01-DEC-89 |
| P119289 | P1192890003 | IRON | 20700 | UG/G | | 18 6 | | 01-DEC-89 |
| P119289 | P1192890003 | LEAD | 3 7 | UG/G | | 3.2 | | 01-DEC-89 |
| P119289 | P1192890003 | MAGNESIUM | 1690 | UG/G | | 931 | | 01-DEC-89 |
| P119289 | P1192890003 | MANGANESE | 343 | UG/G | | 2.8 | | 01-DEC-89 |
| P119289 | P1192890003 | MERCURY | 0 17 | UG/G | | 0 12 | | 01-DEC-89 |
| P119289 | P1192890003 | NICKEL | 24 7 | UG/G | | 7.4 | | 01-DEC-89 |
| P119289 | P1192890003 | STRONTIUM | 19.4 | UG/G | | 18.6 | | 01-DEC-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P119289 | P1192890003 | TIN | 22.5 | UG/G | | 18.6 | | 01-DEC-89 |
| P119289 | P1192890003 | VANADIUM | 59 0 | UG/G | | 9.3 | | 01-DEC-89 |
| P119289 | P1192890003 | ZINC | 21.3 | UG/G | | 3.7 | | 01-DEC-89 |
| P119389 | P1193891113 | ALUMINUM | 3260 | UG/G | | 37.2 | | 04-DEC-89 |
| P119389 | P1193891620 | ALUMINUM | 8790 | UG/G | | 39 8 | | 04-DEC-89 |
| P119389 | P1193891316 | ALUMINUM | 5250 | UG/G | | 43.7 | | 04-DEC-89 |
| P119389 | P1193890003 | ALUMINUM | 3750 | UG/G | | 42 0 | | 04-DEC-89 |
| P119389 | P1193890711 | ALUMINUM | 2410 | UG/G | | 32.1 | | 04-DEC-89 |
| P119389 | P1193890307 | ALUMINUM | 1320 | UG/G | | 41.2 | | 04-DEC-89 |
| P119389 | P1193891620 | BARIUM | 109 | UG/G | | 39.8 | | 04-DEC-89 |
| P119389 | P1193891316 | BARIUM | 55.2 | UG/G | | 43.7 | | 04-DEC-89 |
| P119389 | P1193890711 | CALCIUM | 1160 | UG/G | | 804 | | 04-DEC-89 |
| P119389 | P1193891113 | CALCIUM | 1210 | UG/G | | 930 | | 04-DEC-89 |
| P119389 | P1193891316 | CALCIUM | 3330 | UG/G | | 1090 | | 04-DEC-89 |
| P119389 | P1193891620 | CALCIUM | 4960 | UG/G | | 994 | | 04-DEC-89 |
| P119389 | P1193890003 | CALCIUM | 1300 | UG/G | | 1050 | | 04-DEC-89 |
| P119389 | P1193891113 | CHROMIUM | 36.8 | UG/G | | 1.9 | | 04-DEC-89 |
| P119389 | P1193891620 | CHROMIUM | 9.9 | UG/G | | 2.0 | | 04-DEC-89 |
| P119389 | P1193891316 | CHROMIUM | 6 4 | UG/G | | 2.2 | | 04-DEC-89 |
| P119389 | P1193890003 | CHROMIUM | 7.0 | UG/G | | 2 1 | | 04-DEC-89 |
| P119389 | P1193890307 | CHROMIUM | 4.3 | UG/G | | 2.1 | | 04-DEC-89 |
| P119389 | P1193890711 | CHROMIUM | 3 9 | UG/G | | 1.6 | | 04-DEC-89 |
| P119389 | P1193891113 | COPPER | 13.3 | UG/G | | 4.6 | | 04-DEC-89 |
| P119389 | P1193891316 | COPPER | 12.1 | UG/G | | 5 5 | | 04-DEC-89 |
| P119389 | P1193891620 | COPPER | 23.3 | UG/G | | 5 0 | | 04-DEC-89 |
| P119389 | P1193890003 | COPPER | 6.3 | UG/G | | 5.2 | | 04-DEC-89 |
| P119389 | P1193890711 | COPPER | 4 2 | UG/G | | 4 0 | | 04-DEC-89 |
| P119389 | P1193890307 | COPPER | 5.4 | UG/G | | 5.1 | | 04-DEC-89 |
| P119389 | P1193890003 | IRON | 5590 | UG/G | | 21.0 | | 04-DEC-89 |
| P119389 | P1193890711 | IRON | 2890 | UG/G | | 16 1 | | 04-DEC-89 |
| P119389 | P1193891113 | IRON | 10200 | UG/G | | 18.6 | | 04-DEC-89 |
| P119389 | P1193890307 | IRON | 1710 | UG/G | | 20.6 | | 04-DEC-89 |
| P119389 | P1193891316 | IRON | 9430 | UG/G | | 21.8 | | 04-DEC-89 |
| P119389 | P1193891620 | IRON | 13200 | UG/G | | 19.9 | | 04-DEC-89 |
| P119389 | P1193891316 | LEAD | 14 2 | UG/G | | 5.1 | | 04-DEC-89 |
| P119389 | P1193891620 | LEAD | 15 3 | UG/G | | 5.3 | | 04-DEC-89 |
| P119389 | P1193890003 | LEAD | 5.1 | UG/G | | 2.5 | | 04-DEC-89 |
| P119389 | P1193890711 | LEAD | 1.4 | UG/G | | 0.99 | | 04-DEC-89 |
| P119389 | P1193891113 | LEAD | 6 6 | UG/G | | 1 0 | | 04-DEC-89 |
| P119389 | P1193890307 | LEAD | 1.5 | UG/G | | 1.2 | | 04-DEC-89 |
| P119389 | P1193891316 | MAGNESIUM | 1560 | UG/G | | 1090 | | 04-DEC-89 |
| P119389 | P1193891620 | MAGNESIUM | 2160 | UG/G | | 994 | | 04-DEC-89 |
| P119389 | P1193890003 | MANGANESE | 58.0 | UG/G | | 3.2 | | 04-DEC-89 |
| P119389 | P1193890307 | MANGANESE | 10.9 | UG/G | | 3.1 | | 04-DEC-89 |
| P119389 | P1193891113 | MANGANESE | 96.9 | UG/G | | 2 8 | | 04-DEC-89 |
| P119389 | P1193890711 | MANGANESE | 20 9 | UG/G | | 2.4 | | 04-DEC-89 |
| P119389 | P1193891316 | MANGANESE | 53.7 | UG/G | | 3.3 | | 04-DEC-89 |
| P119389 | P1193891620 | MANGANESE | 104 | UG/G | | 3 0 | | 04-DEC-89 |
| P119389 | P1193891620 | MERCURY | 0.18 | UG/G | | 0 12 | | 04-DEC-89 |
| P119389 | P1193890003 | MERCURY | 0.12 | UG/G | | 0 11 | | 04-DEC-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P119389 | P1193890307 | MERCURY | 0.12 | UG/G | | 0 10 | | 04-DEC-89 |
| P119389 | P1193891316 | NICKEL | 10.8 | UG/G | | 8.7 | | 04-DEC-89 |
| P119389 | P1193891620 | NICKEL | 16.2 | UG/G | | 8 0 | | 04-DEC-89 |
| P119389 | P1193891113 | NICKEL | 10.4 | UG/G | | 7.4 | | 04-DEC-89 |
| P119389 | P1193891620 | POTASSIUM | 1000 | UG/G | | 994 | | 04-DEC-89 |
| P119389 | P1193891316 | STRONTIUM | 32.3 | UG/G | | 21.8 | | 04-DEC-89 |
| P119389 | P1193891620 | STRONTIUM | 67 8 | UG/G | | 19.9 | | 04-DEC-89 |
| P119389 | P1193891620 | VANADIUM | 27.9 | UG/G | | 9.9 | | 04-DEC-89 |
| P119389 | P1193890003 | VANADIUM | 12 0 | UG/G | | 10.5 | | 04-DEC-89 |
| P119389 | P1193891316 | VANADIUM | 22.9 | UG/G | | 10.9 | | 04-DEC-89 |
| P119389 | P1193891113 | VANADIUM | 19.9 | UG/G | | 9.3 | | 04-DEC-89 |
| P119389 | P1193890003 | ZINC | 20 7 | UG/G | | 4.2 | | 04-DEC-89 |
| P119389 | P1193890307 | ZINC | 10.2 | UG/G | | 4.1 | | 04-DEC-89 |
| P119389 | P1193891113 | ZINC | 11.8 | UG/G | | 3 7 | | 04-DEC-89 |
| P119389 | P1193891316 | ZINC | 35.3 | UG/G | | 4.4 | | 04-DEC-89 |
| P119389 | P1193890711 | ZINC | 10.0 | UG/G | | 3.2 | | 04-DEC-89 |
| P119389 | P1193891620 | ZINC | 88 6 | UG/G | | 4 0 | | 04-DEC-89 |
| P207389 | SEP0189BR1319 | ALUMINUM | 3760 | UG/G | A | 45.4 | A | 05-JUN-89 |
| P207389 | SEP0189BR0307 | ALUMINUM | 8840 | UG/G | | 38.8 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | ALUMINUM | 7800 | UG/G | A | 47.0 | A | 05-JUN-89 |
| P207389 | GSEP01890989001 | AMERICIUM-241 | 184 | PCI/L | | 0 | | 21-SEP-89 |
| P207389 | SEP0189BR1319 | ARSENIC | 3.9 | UG/G | A | 2 2 | A | 05-JUN-89 |
| P207389 | SEP0189BR0307 | ARSENIC | 2.6 | UG/G | | 1.5 | | 05-JUN-89 |
| P207389 | SEP0189BR0307 | BARIUM | 74 5 | UG/G | | 38.8 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | BARIUM | 48.2 | UG/G | A | 47.0 | A | 05-JUN-89 |
| P207389 | SEP0189BR1319 | BARIUM | 63 8 | UG/G | A | 45.4 | A | 05-JUN-89 |
| P207389 | SEP0189BR1319 | BERYLLIUM | 2.1 | UG/G | A | 1.1 | A | 05-JUN-89 |
| P207389 | SEP0189BR0307 | BERYLLIUM | 2 4 | UG/G | | 0 97 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | BERYLLIUM | 1.9 | UG/G | A | 1.2 | A | 05-JUN-89 |
| P207389 | GSEP01890390001 | BICARBONATE | 400 | MG/L | | | | 14-MAR-90 |
| P207389 | SEP0189-0604-02-0 | BICARBONATE AS CACO3 | 329 | MG/L | | 10 | | 05-JUN-90 |
| P207389 | GW00244IT | BICARBONATE AS CACO3 | 320 | MG/L | | 1.0 | | 21-AUG-90 |
| P207389 | GW00799IT | BICARBONATE AS CACO3 | 410 | MG/L | | 1 | | 18-DEC-90 |
| P207389 | GW01028IT | BICARBONATE AS CACO3 | 310 | MG/L | | 1.0 | | 26-MAR-91 |
| P207389 | GW01361IT | BICARBONATE AS CACO3 | 320 | MG/L | | 1 0 | | 31-MAY-91 |
| P207389 | SEP0189BR1319 | CALCIUM | 5200 | UG/G | A | 1130 | A | 05-JUN-89 |
| P207389 | SEP0189BR0307 | CALCIUM | 75600 | UG/G | | 970 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | CALCIUM | 36500 | UG/G | A | 1180 | A | 05-JUN-89 |
| P207389 | GSEP01890989001 | CALCIUM | 70.20 | MG/L | | 5000 | | 21-SEP-89 |
| P207389 | SEP0189-0604-02-0 | CALCIUM | 77600 | UG/L | | 15.7 | | 05-JUN-90 |
| P207389 | GW00244IT | CALCIUM | 75600 00 | UG/L | E | 5000 | | 21-AUG-90 |
| P207389 | GW00799IT | CALCIUM | 91400 | UG/L | | 5000 | | 18-DEC-90 |
| P207389 | GW01028IT | CALCIUM | 84900.00 | UG/L | | 5000 | | 26-MAR-91 |
| P207389 | GW01361IT | CALCIUM | 91300 00 | UG/L | | 5000 | | 31-MAY-91 |
| P207389 | SEP0189BR1319 | CHROMIUM | 6.1 | UG/G | A | 2.3 | A | 05-JUN-89 |
| P207389 | SEP0189BR0307 | CHROMIUM | 8.3 | UG/G | | 1.9 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | CHROMIUM | 5 4 | UG/G | V | 2 4 | A | 05-JUN-89 |
| P207389 | SEP0189BR1319 | COPPER | 15.2 | UG/G | A | 5.7 | A | 05-JUN-89 |
| P207389 | SEP0189BR0307 | COPPER | 9.3 | UG/G | | 4.8 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | COPPER | 7.4 | UG/G | A | 5 9 | A | 05-JUN-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207389 | SEP0189BR0307 | IRON | 7030 | UG/G | | 19.4 | | 05-JUN-89 |
| P207389 | SEP0189BR1319 | IRON | 6460 | UG/G | A | 22 7 | A | 05-JUN-89 |
| P207389 | SEP0189BR0713 | IRON | 5470 | UG/G | A | 23.5 | A | 05-JUN-89 |
| P207389 | SEP0189BR0307 | MAGNESIUM | 2760 | UG/G | | 970 | | 05-JUN-89 |
| P207389 | SEP0189BR1319 | MAGNESIUM | 1590 | UG/G | A | 1130 | A | 05-JUN-89 |
| P207389 | SEP0189BR0713 | MAGNESIUM | 2540 | UG/G | A | 1180 | A | 05-JUN-89 |
| P207389 | GSEP01890989001 | MAGNESIUM | 16.80 | MG/L | | 5000 | | 21-SEP-89 |
| P207389 | SEP0189-0604-02-0 | MAGNESIUM | 18600 | UG/L | | 51.8 | | 05-JUN-90 |
| P207389 | GW00244IT | MAGNESIUM | 18400.00 | UG/L | E | 5000 | | 21-AUG-90 |
| P207389 | GW00799IT | MAGNESIUM | 21300 | UG/L | | 5000 | | 18-DEC-90 |
| P207389 | GW01028IT | MAGNESIUM | 20600.00 | UG/L | | 5000 | | 26-MAR-91 |
| P207389 | GW01361IT | MAGNESIUM | 22000 00 | UG/L | | 5000 | | 31-MAY-91 |
| P207389 | SEP0189BR0307 | MANGANESE | 21 4 | UG/G | | 2.9 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | MANGANESE | 36 1 | UG/G | A | 3.5 | A | 05-JUN-89 |
| P207389 | SEP0189BR1319 | MANGANESE | 81 6 | UG/G | A | 3.4 | A | 05-JUN-89 |
| P207389 | SEP0189-0604-02-0 | MERCURY | 0.34 | UG/L | | 0.2 | | 05-JUN-90 |
| P207389 | GW01028IT | MERCURY | 0.56 | UG/L | | 0 | | 26-MAR-91 |
| P207389 | SEP0189BR1319 | NICKEL | 12 5 | UG/G | V | 9 1 | A | 05-JUN-89 |
| P207389 | GSEP01890989001 | SODIUM | 71.70 | MG/L | | 5000 | | 21-SEP-89 |
| P207389 | SEP0189-0604-02-0 | SODIUM | 66200 | UG/L | | 15.5 | | 05-JUN-90 |
| P207389 | GW00244IT | SODIUM | 76000.00 | UG/L | E | 5000 | | 21-AUG-90 |
| P207389 | GW00799IT | SODIUM | 84300 | UG/L | | 5000 | | 18-DEC-90 |
| P207389 | GW01028IT | SODIUM | 70000 00 | UG/L | | 5000 | | 26-MAR-91 |
| P207389 | GW01361IT | SODIUM | 64800.00 | UG/L | | 5000 | | 31-MAY-91 |
| P207389 | SEP0189BR0307 | STRONTIUM | 92.6 | UG/G | | 19.4 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | STRONTIUM | 189 | UG/G | A | 23.5 | A | 05-JUN-89 |
| P207389 | SEP0189BR1319 | STRONTIUM | 37.4 | UG/G | A | 22.7 | A | 05-JUN-89 |
| P207389 | GW00244IT | STRONTIUM | 536 00 | UG/L | E | 200 | | 21-AUG-90 |
| P207389 | GW00799IT | STRONTIUM | 526 | UG/L | | 200 | | 18-DEC-90 |
| P207389 | GW01028IT | STRONTIUM | 624.00 | UG/L | | 200 | | 26-MAR-91 |
| P207389 | GW01361IT | STRONTIUM | 671.00 | UG/L | | 200 | | 31-MAY-91 |
| P207389 | GSEP01890390001 | SULFATE | 71 | MG/L | | | | 14-MAR-90 |
| P207389 | GW00799IT | SULFATE | 73 | MG/L | | 20 | | 18-DEC-90 |
| P207389 | GW01028IT | SULFATE | 68 | MG/L | | 2.0 | | 26-MAR-91 |
| P207389 | SEP0189BR0307 | TIN | 23.4 | UG/G | | 19.4 | | 05-JUN-89 |
| P207389 | GSEP01890989001 | TRITIUM | 720 | PCI/L | | 390 | | 21-SEP-89 |
| P207389 | GW00799IT | TRITIUM | 791.1 | PCI/L | | 400 | | 18-DEC-90 |
| P207389 | GSEP01890989001 | URANIUM-233,-234 | 6.18 | PCI/L | | .36 | | 21-SEP-89 |
| P207389 | GW00799IT | URANIUM-233,-234 | 5.078 | PCI/L | | .6 | | 18-DEC-90 |
| P207389 | SEP0189BR0307 | VANADIUM | 18.6 | UG/G | | 9.7 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | VANADIUM | 15.9 | UG/G | A | 1.8 | A | 05-JUN-89 |
| P207389 | SEP0189BR1319 | VANADIUM | 21.3 | UG/G | V | 11.3 | A | 05-JUN-89 |
| P207389 | SEP0189BR0307 | ZINC | 32.2 | UG/G | | 3.9 | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | ZINC | 27.6 | UG/G | A | 4.7 | A | 05-JUN-89 |
| P207389 | SEP0189BR1319 | ZINC | 46.5 | UG/G | A | 4.5 | A | 05-JUN-89 |
| P207389 | SEP0189BR0003 | pH | 8.5 | PHUNIT | | | | 05-JUN-89 |
| P207389 | SEP0189BR1319 | pH | 9.0 | PHUNIT | | | | 05-JUN-89 |
| P207389 | SEP0189BR0307 | pH | 8 7 | PHUNIT | | | | 05-JUN-89 |
| P207389 | SEP0189BR0713 | pH | 9.1 | PHUNIT | | | | 05-JUN-89 |
| P207489 | SEP02890003 | ALUMINUM | 6900 | UG/G | | 43 4 | A | 06-JUN-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207489 | SEP02890306 | ALUMINUM | 30400 | UG/G | | 384 | A | 06-JUN-89 |
| P207489 | SEP02890610 | ALUMINUM | 6490 | UG/G | | 36.7 | A | 06-JUN-89 |
| P207489 | GSEP02890390001 | AMERICIUM-241 | +1.146E-0 | PCI /L | | 0.011 | | 14-MAR-90 |
| P207489 | SEP02890003 | ARSENIC | 8.8 | UG/G | A | 4 7 | A | 06-JUN-89 |
| P207489 | SEP02890306 | ARSENIC | 2 5 | UG/G | A | 1.8 | A | 06-JUN-89 |
| P207489 | SEP02890003 | BARIUM | 56 7 | UG/G | | 43 4 | A | 06-JUN-89 |
| P207489 | SEP02890306 | BARIUM | 120 | UG/G | | 38 4 | A | 06-JUN-89 |
| P207489 | SEP02890610 | BARIUM | 40 4 | UG/G | | 36.7 | A | 06-JUN-89 |
| P207489 | SEP02890003 | BERYLLIUM | 2.0 | UG/G | V | 1.1 | A | 06-JUN-89 |
| P207489 | SEP02890610 | BERYLLIUM | 1.4 | UG/G | V | 0.92 | A | 06-JUN-89 |
| P207489 | SEP02890306 | BERYLLIUM | 8.7 | UG/G | V | 0.96 | A | 06-JUN-89 |
| P207489 | GSEP02890390001 | BICARBONATE | 360 | MG/L | | | | 14-MAR-90 |
| P207489 | SEP0289-0531-02-1 | BICARBONATE AS CACO3 | 313 | MG/L | | 10 | | 01-JUN-90 |
| P207489 | GW00223IT | BICARBONATE AS CACO3 | 300 | MG/L | | | | 14-AUG-90 |
| P207489 | GW00223IT | BICARBONATE AS CACO3 | 300 | MG/L | | | | 14-AUG-90 |
| P207489 | GW01195IT | BICARBONATE AS CACO3 | 300 | MG/L | | 1.0 | | 01-MAY-91 |
| P207489 | GW01362IT | BICARBONATE AS CACO3 | 310 | MG/L | | 1 0 | | 31-MAY-91 |
| P207489 | SEP02890003 | CALCIUM | 13700 | UG/G | | 1080 | A | 06-JUN-89 |
| P207489 | SEP02890306 | CALCIUM | 5020 | UG/G | | 960 | A | 06-JUN-89 |
| P207489 | SEP02890610 | CALCIUM | 35300 | UG/G | | 918 | A | 06-JUN-89 |
| P207489 | GSEP02890989001 | CALCIUM | 90.20 | MG/L | | 5000 | | 20-SEP-89 |
| P207489 | SEP0289-0531-02-1 | CALCIUM | 88200 | UG/L | | 15.7 | | 01-JUN-90 |
| P207489 | GW01362IT | CALCIUM | 95600 00 | UG/L | | 5000 | | 31-MAY-91 |
| P207489 | SEP02890003 | CHROMIUM | 6 1 | UG/G | V | 2 2 | A | 06-JUN-89 |
| P207489 | SEP02890610 | CHROMIUM | 3.2 | UG/G | V | 1.8 | A | 06-JUN-89 |
| P207489 | SEP02890306 | CHROMIUM | 81.2 | UG/G | V | 1.9 | A | 06-JUN-89 |
| P207489 | SEP02890003 | COPPER | 9.9 | UG/G | A | 5.4 | A | 06-JUN-89 |
| P207489 | SEP02890306 | COPPER | 26 6 | UG/G | V | 4.8 | A | 06-JUN-89 |
| P207489 | SEP02890610 | COPPER | 5.3 | UG/G | A | 4.6 | A | 06-JUN-89 |
| P207489 | SEP02890003 | IRON | 5570 | UG/G | | 21.7 | A | 06-JUN-89 |
| P207489 | SEP02890610 | IRON | 3260 | UG/G | | 18.4 | A | 06-JUN-89 |
| P207489 | SEP02890306 | IRON | 33500 | UG/G | | 192 | A | 06-JUN-89 |
| P207489 | SEP0289-0531-02-1 | LEAD | 3.3 | UG/L | | 1.2 | | 01-JUN-90 |
| P207489 | SEP02890003 | MAGNESIUM | 1990 | UG/G | | 1080 | A | 06-JUN-89 |
| P207489 | SEP02890306 | MAGNESIUM | 3120 | UG/G | | 960 | A | 06-JUN-89 |
| P207489 | SEP02890610 | MAGNESIUM | 2340 | UG/G | | 918 | A | 06-JUN-89 |
| P207489 | GSEP02890989001 | MAGNESIUM | 23.40 | MG/L | | 5000 | | 20-SEP-89 |
| P207489 | SEP0289-0531-02-1 | MAGNESIUM | 24100 | UG/L | | 51.8 | | 01-JUN-90 |
| P207489 | GW01362IT | MAGNESIUM | 26100.00 | UG/L | | 5000 | | 31-MAY-91 |
| P207489 | SEP02890003 | MANGANESE | 44.2 | UG/G | A | 3.3 | A | 06-JUN-89 |
| P207489 | SEP02890306 | MANGANESE | 163 | UG/G | A | 2.9 | A | 06-JUN-89 |
| P207489 | SEP02890610 | MANGANESE | 16.2 | UG/G | A | 2.8 | A | 06-JUN-89 |
| P207489 | SEP0289-0531-02-1 | MANGANESE | 41.3 | UG/L | | 1.2 | | 01-JUN-90 |
| P207489 | GW01362IT | MANGANESE | 26.90 | UG/L | | 15 | | 31-MAY-91 |
| P207489 | SEP02890306 | MOLYBDENUM | 37.0 | UG/G | A | 19.2 | A | 06-JUN-89 |
| P207489 | SEP02890003 | NICKEL | 8.7 | UG/G | V | 8.7 | A | 06-JUN-89 |
| P207489 | SEP02890306 | NICKEL | 37.5 | UG/G | V | 7.7 | A | 06-JUN-89 |
| P207489 | SEP02890306 | POTASSIUM | 2540 | UG/G | A | 960 | A | 06-JUN-89 |
| P207489 | SEP02890306 | SILVER | 5.8 | UG/G | A | 1.9 | A | 06-JUN-89 |
| P207489 | SEP0289-0531-02-1 | SODIUM | 41600 | UG/L | | 15 5 | | 01-JUN-90 |
| P207489 | GW01362IT | SODIUM | 46300 00 | UG/L | | 5000 | | 31-MAY-91 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207489 | SEP02890003 | STRONTIUM | 47.8 | UG/G | A | 21.7 | A | 06-JUN-89 |
| P207489 | SEP02890610 | STRONTIUM | 61.8 | UG/G | A | 18.4 | A | 06-JUN-89 |
| P207489 | SEP02890306 | STRONTIUM | 27.4 | UG/G | A | 19 2 | A | 06-JUN-89 |
| P207489 | SEP0289-0531-02-1 | STRONTIUM | 5730 | UG/L | | 20.4 | | 01-JUN-90 |
| P207489 | GW01362IT | STRONTIUM | 732.00 | UG/L | | 200 | | 31-MAY-91 |
| P207489 | GSEP02890390001 | SULFATE | 84 | MG/L | | | | 14-MAR-90 |
| P207489 | GW00223IT | SULFATE | 130 | MG/L | | | | 14-AUG-90 |
| P207489 | GW00223IT | SULFATE | 130 | MG/L | | | | 14-AUG-90 |
| P207489 | GW01195IT | SULFATE | 72 | MG/L | | 2 0 | | 01-MAY-91 |
| P207489 | GW01362IT | SULFATE | 70 | MG/L | | 2 0 | | 31-MAY-91 |
| P207489 | SEP02890306 | TIN | 84.2 | UG/G | A | 19.2 | A | 06-JUN-89 |
| P207489 | SEP02890610 | TIN | 21.5 | UG/G | A | 18.4 | A | 06-JUN-89 |
| P207489 | GSEP02890989001 | TRITIUM | 810 | PCI/L | | 270 | | 20-SEP-89 |
| P207489 | GSEP0289098900 | TRITIUM | 810 | PCI/L | | 270 | | 21-SEP-89 |
| P207489 | GW00800IT | TRITIUM | 774 7 | PCI/L | | 400 | | 18-DEC-90 |
| P207489 | GSEP0289098900 | URANIUM-233,-234 | 1.82 | PCI/L | | 0 | | 21-SEP-89 |
| P207489 | GSEP02890390001 | URANIUM-233,-234 | +1.488E+0 | PCI /L | | 0.173 | | 14-MAR-90 |
| P207489 | GSEP02890390001 | URANIUM-235/236 | +4.503E-0 | PCI /L | | 0 210 | | 14-MAR-90 |
| P207489 | SEP02890003 | VANADIUM | 21 2 | UG/G | V | 10.8 | A | 06-JUN-89 |
| P207489 | SEP02890306 | VANADIUM | 64.3 | UG/G | V | 9.6 | A | 06-JUN-89 |
| P207489 | SEP02890003 | ZINC | 41.9 | UG/G | | 4.3 | A | 06-JUN-89 |
| P207489 | SEP02890306 | ZINC | 62.1 | UG/G | | 3 8 | A | 06-JUN-89 |
| P207489 | SEP02890610 | ZINC | 23.3 | UG/G | | 3.7 | A | 06-JUN-89 |
| P207489 | SEP02890003 | pH | 8.6 | PHUNIT | | | | 06-JUN-89 |
| P207489 | SEP02890610 | pH | 9.1 | PHUNIT | | | | 06-JUN-89 |
| P207689 | SEP04890006D | ALUMINUM | 8920 | UG/G | A | 45.9 | A | 05-MAY-89 |
| P207689 | SEP04890612 | ALUMINUM | 7340 | UG/G | A | 49 1 | A | 05-MAY-89 |
| P207689 | SEP04891215 | ALUMINUM | 7560 | UG/G | A | 47.7 | A | 05-MAY-89 |
| P207689 | GSEP0489098900 | AMERICIUM-241 | .096 | PCI/L | | .023 | A | 14-SEP-89 |
| P207689 | SEP04890006D | ARSENIC | 4 5 | UG/G | A | 4.5 | A | 05-MAY-89 |
| P207689 | SEP04891215 | ARSENIC | 3.2 | UG/G | V | 2.5 | A | 05-MAY-89 |
| P207689 | SEP04890006D | BARIUM | 147 | UG/G | A | 45.9 | A | 05-MAY-89 |
| P207689 | SEP04890612 | BARIUM | 76.9 | UG/G | A | 49.1 | A | 05-MAY-89 |
| P207689 | SEP04890006D | BERYLLIUM | 2.7 | UG/G | A | 1.1 | A | 05-MAY-89 |
| P207689 | SEP04890612 | BERYLLIUM | 2.1 | UG/G | A | 1.2 | A | 05-MAY-89 |
| P207689 | SEP04891215 | BERYLLIUM | 2.3 | UG/G | A | 1.2 | A | 05-MAY-89 |
| P207689 | GW00003IT | BERYLLIUM | 6.40 | UG/L | | 5 | | 17-JUL-90 |
| P207689 | GW00003IT | BICARBONATE AS CACO3 | 360 | MG/L | | 1.0 | | 17-JUL-90 |
| P207689 | GW01023IT | BICARBONATE AS CACO3 | 350 | MG/L | | 1.0 | | 25-MAR-91 |
| P207689 | GW01365IT | BICARBONATE AS CACO3 | 380 | MG/L | | 1.0 | | 31-MAY-91 |
| P207689 | GW01366IT | BICARBONATE AS CACO3 | 390 | MG/L | | 1.0 | | 31-MAY-91 |
| P207689 | GSEP0489043002121 | BICARBONATE AS CACO3 | 320 | MG/L | | 2 | | |
| P207689 | GW00003IT | CADMIUM | 5.80 | UG/L | | 5 | | 17-JUL-90 |
| P207689 | GW00468IT | CADMIUM | 10.3 | UG/L | | | | 15-OCT-90 |
| P207689 | SEP04890006D | CALCIUM | 102000 | UG/G | V | 1150 | A | 05-MAY-89 |
| P207689 | SEP04890612 | CALCIUM | 3580 | UG/G | V | 1230 | A | 05-MAY-89 |
| P207689 | SEP04891215 | CALCIUM | 11200 | UG/G | V | 1190 | A | 05-MAY-89 |
| P207689 | GSEP04890989001 | CALCIUM | 114.00 | MG/L | V | 5000 | A | 14-SEP-89 |
| P207689 | GW00003IT | CALCIUM | 94500.00 | UG/L | | 5000 | | 17-JUL-90 |
| P207689 | GW00468IT | CALCIUM | 60900 | UG/L | | | | 15-OCT-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207689 | GW01023IT | CALCIUM | 131000 00 | UG/L | | 5000 | | 25-MAR-91 |
| P207689 | GW01365IT | CALCIUM | 89100 00 | UG/L | | 5000 | | 31-MAY-91 |
| P207689 | GW01366IT | CALCIUM | 90800.00 | UG/L | | 5000 | | 31-MAY-91 |
| P207689 | GSEP0489043002121 | CALCIUM | 58900 | UG/L | | 5000 | | |
| P207689 | SEP04890006D | CHROMIUM | 7.1 | UG/G | A | 2.3 | A | 05-MAY-89 |
| P207689 | SEP04891215 | CHROMIUM | 6 4 | UG/G | A | 2.4 | A | 05-MAY-89 |
| P207689 | SEP04890612 | CHROMIUM | 6.4 | UG/G | A | 2.5 | A | 05-MAY-89 |
| P207689 | GW00468IT | CHROMIUM | 13 | UG/L | | | | 15-OCT-90 |
| P207689 | GW01023IT | CHROMIUM | 17.60 | UG/L | | 10 | | 25-MAR-91 |
| P207689 | SEP04890006D | COPPER | 7.0 | UG/G | A | 5.7 | A | 05-MAY-89 |
| P207689 | SEP04890612 | COPPER | 10.4 | UG/G | A | 6.1 | A | 05-MAY-89 |
| P207689 | SEP04891215 | COPPER | 8.4 | UG/G | A | 6 0 | A | 05-MAY-89 |
| P207689 | GW01023IT | CYANIDE | 20.50 | UG/L | | 10 | | 25-MAR-91 |
| P207689 | GW01366IT | CYANIDE | 10.00 | UG/L | | 10 | | 31-MAY-91 |
| P207689 | GW01365IT | CYANIDE | 8 50 | UG/L | | 10 | | 31-MAY-91 |
| P207689 | GW00468IT | CYANIDE | 12 4 | UG/L | | | | 15-OCT-90 |
| P207689 | SEP04890612 | IRON | 4730 | UG/G | A | 24.5 | A | 05-MAY-89 |
| P207689 | SEP04891215 | IRON | 7380 | UG/G | A | 23.9 | A | 05-MAY-89 |
| P207689 | SEP04890006D | IRON | 7200 | UG/G | A | 23.0 | A | 05-MAY-89 |
| P207689 | SEP04890006D | LEAD | 6 9 | UG/G | A | 4.5 | A | 05-MAY-89 |
| P207689 | SEP04891215 | LEAD | 11 8 | UG/G | A | 10 0 | A | 05-MAY-89 |
| P207689 | SEP04890612 | LEAD | 13.6 | UG/G | A | 2.5 | A | 05-MAY-89 |
| P207689 | GSEP04890989001 | LEAD | .0404 | MG/L | A | 20 0 | A | 14-SEP-89 |
| P207689 | GW00468IT | LEAD | 6.8 | UG/L | | | | 15-OCT-90 |
| P207689 | SEP04890006D | LITHIUM | 11 8 | UG/G | V | 2.3 | A | 05-MAY-89 |
| P207689 | SEP04890612 | LITHIUM | 5.1 | UG/G | V | 2.5 | A | 05-MAY-89 |
| P207689 | SEP04891215 | LITHIUM | 8.3 | UG/G | V | 2 4 | A | 05-MAY-89 |
| P207689 | SEP04890006D | MAGNESIUM | 4790 | UG/G | A | 1150 | A | 05-MAY-89 |
| P207689 | SEP04890612 | MAGNESIUM | 3620 | UG/G | A | 1230 | A | 05-MAY-89 |
| P207689 | SEP04891215 | MAGNESIUM | 4060 | UG/G | A | 1190 | A | 05-MAY-89 |
| P207689 | GSEP04890989001 | MAGNESIUM | 123 00 | MG/L | V | 5000 | A | 14-SEP-89 |
| P207689 | GW00003IT | MAGNESIUM | 105000 00 | UG/L | | 5000 | | 17-JUL-90 |
| P207689 | GW00468IT | MAGNESIUM | 70600 | UG/L | | | | 15-OCT-90 |
| P207689 | GW01023IT | MAGNESIUM | 142000.00 | UG/L | | 5000 | | 25-MAR-91 |
| P207689 | GW01366IT | MAGNESIUM | 98000.00 | UG/L | | 5000 | | 31-MAY-91 |
| P207689 | GW01365IT | MAGNESIUM | 95600 00 | UG/L | | 5000 | | 31-MAY-91 |
| P207689 | GSEP0489043002121 | MAGNESIUM | 66300 | UG/L | | 5000 | | |
| P207689 | SEP04890006D | MANGANESE | 101 | UG/G | A | 3.4 | A | 05-MAY-89 |
| P207689 | SEP04890612 | MANGANESE | 36.6 | UG/G | A | 3.7 | A | 05-MAY-89 |
| P207689 | SEP04891215 | MANGANESE | 62 0 | UG/G | A | 3.6 | A | 05-MAY-89 |
| P207689 | SEP04890006D | MERCURY | 0.12 | UG/G | A | 0.11 | A | 05-MAY-89 |
| P207689 | GW00468IT | MERCURY | .75 | UG/L | | | | 15-OCT-90 |
| P207689 | GW01023IT | MERCURY | 0.27 | UG/L | | 0 | | 25-MAR-91 |
| P207689 | SEP04890006D | MOLYBDENUM | 7.3 | UG/G | V | 2 3 | A | 05-MAY-89 |
| P207689 | SEP04890612 | MOLYBDENUM | 5.9 | UG/G | V | 2.5 | A | 05-MAY-89 |
| P207689 | SEP04891215 | MOLYBDENUM | 5.9 | UG/G | V | 2.4 | A | 05-MAY-89 |
| P207689 | GSEP0489098900 | PLUTONIUM-239 | .195 | PCI/L | | 0 | A | 14-SEP-89 |
| P207689 | GW00003IT | SELENIUM | 19 00 | UG/L | | 5 | | 17-JUL-90 |
| P207689 | GW00468IT | SELENIUM | 13.9 | UG/L | | | | 15-OCT-90 |
| P207689 | GW01366IT | SELENIUM | 8.00 | UG/L | | 5 | | 31-MAY-91 |
| P207689 | GW01365IT | SELENIUM | 7 00 | UG/L | | 5 | | 31-MAY-91 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207689 | GSEP0489043002121 | SELENIUM | 20 | UG/L | | 10 | | |
| P207689 | GSEP04890989001 | SODIUM | 211.00 | MG/L | V | 5000 | A | 14-SEP-89 |
| P207689 | GW00003IT | SODIUM | 157000.00 | UG/L | | 5000 | | 17-JUL-90 |
| P207689 | GW00468IT | SODIUM | 179000 | UG/L | | | | 15-OCT-90 |
| P207689 | GW01023IT | SODIUM | 122000.00 | UG/L | | 5000 | | 25-MAR-91 |
| P207689 | GW01366IT | SODIUM | 106000 00 | UG/L | | 5000 | | 31-MAY-91 |
| P207689 | GW01365IT | SODIUM | 103000 00 | UG/L | | 5000 | | 31-MAY-91 |
| P207689 | GSEP0489043002121 | SODIUM | 156000 | UG/L | | 5000 | | |
| P207689 | SEP04890006D | STRONTIUM | 299 | UG/G | V | 230 | A | 05-MAY-89 |
| P207689 | GW00003IT | STRONTIUM | 2630.00 | UG/L | | 200 | | 17-JUL-90 |
| P207689 | GW00468IT | STRONTIUM | 1760 | UG/L | | | | 15-OCT-90 |
| P207689 | GW01023IT | STRONTIUM | 3540.00 | UG/L | | 200 | | 25-MAR-91 |
| P207689 | GW01365IT | STRONTIUM | 2420 00 | UG/L | | 200 | | 31-MAY-91 |
| P207689 | GW01366IT | STRONTIUM | 2500 00 | UG/L | | 200 | | 31-MAY-91 |
| P207689 | GSEP0489043002121 | STRONTIUM | 1530 | UG/L | | 100 | | |
| P207689 | GW00003IT | SULFATE | 290 | MG/L | | 2 0 | | 17-JUL-90 |
| P207689 | GW01023IT | SULFATE | 110 | MG/L | | 2 0 | | 25-MAR-91 |
| P207689 | GW01365IT | SULFATE | 93 | MG/L | | 2.0 | | 31-MAY-91 |
| P207689 | GW01366IT | SULFATE | 150 | MG/L | | 2.0 | | 31-MAY-91 |
| P207689 | GSEP0489043002121 | SULFATE | 184 | MG/L | | 50 | | |
| P207689 | GSEP0489098900 | TRITIUM | 700 | PCI/L | | 390 | A | 14-SEP-89 |
| P207689 | GW00003IT | TRITIUM | 673.8 | PCI/L | | 400 | | 17-JUL-90 |
| P207689 | GSEP0489043002121 | TRITIUM | 360 | PCI/L | | 400 | | |
| P207689 | GSEP0489043002121 | TRITIUM | 360 | PCI/L | | 400 | | |
| P207689 | GSEP0489098900 | URANIUM-233,-234 | 11 5 | PCI/L | | 0 | A | 14-SEP-89 |
| P207689 | GW00003IT | URANIUM-233,-234 | 10 3 | PCI/L | | .6 | | 17-JUL-90 |
| P207689 | GW00468IT | URANIUM-233,-234 | 12.04 | PCI/L | | .6 | | 15-OCT-90 |
| P207689 | GSEP0489043002121 | URANIUM-233,-234 | 9.32 | PCI/L | | 0.6 | | |
| P207689 | GSEP0489043002121 | URANIUM-233,-234 | 9.32 | PCI/L | | 0.6 | | |
| P207689 | SEP04890006D | VANADIUM | 25.5 | UG/G | A | 11 5 | A | 05-MAY-89 |
| P207689 | SEP04890612 | VANADIUM | 20.2 | UG/G | A | 12.3 | A | 05-MAY-89 |
| P207689 | SEP04891215 | VANADIUM | 22.8 | UG/G | A | 11.9 | A | 05-MAY-89 |
| P207689 | SEP04890612 | ZINC | 9.4 | UG/G | A | 4.9 | A | 05-MAY-89 |
| P207689 | SEP04891215 | ZINC | 10.1 | UG/G | A | 4.8 | A | 05-MAY-89 |
| P207689 | SEP04890006 | pH | 9 0 | PHUNIT | | | | 05-MAY-89 |
| P207689 | SEP04890006D | pH | 8 9 | PHUNIT | | | | 05-MAY-89 |
| P207689 | SEP04891215 | pH | 9.2 | PHUNIT | | | | 05-MAY-89 |
| P207689 | SEP04890612 | pH | 9.4 | PHUNIT | | | | 05-MAY-89 |
| P207789 | SEP0589BR0006 | ALUMINUM | 8060 | UG/G | A | 46.6 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | ALUMINUM | 8540 | UG/G | A | 45.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | ALUMINUM | 10400 | UG/G | A | 49.0 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | ALUMINUM | 6370 | UG/G | A | 46.7 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | ARSENIC | 5.4 | UG/G | A | 4 6 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | ARSENIC | 5.6 | UG/G | A | 4 9 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | ARSENIC | 2.8 | UG/G | V | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | BARIUM | 152 | UG/G | A | 46.6 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | BARIUM | 64.3 | UG/G | A | 45.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | BARIUM | 202 | UG/G | A | 49.0 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | BERYLLIUM | 2.5 | UG/G | A | 1.2 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | BERYLLIUM | 2.3 | UG/G | A | 1.1 | A | 05-MAY-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207789 | SEP0589BR1318 | BERYLLIUM | 3.0 | UG/G | A | 1.2 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | BERYLLIUM | 1.9 | UG/G | A | 1.2 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | CALCIUM | 105000 | UG/G | V | 11700 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | CALCIUM | 23200 | UG/G | V | 1220 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | CALCIUM | 80100 | UG/G | V | 11300 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | CALCIUM | 2780 | UG/G | V | 1170 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | CHROMIUM | 6.9 | UG/G | A | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | CHROMIUM | 8.9 | UG/G | A | 2.4 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | CHROMIUM | 6.4 | UG/G | A | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | CHROMIUM | 6.3 | UG/G | A | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | COPPER | 8.4 | UG/G | A | 5.8 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | COPPER | 6.3 | UG/G | A | 5.7 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | COPPER | 12 0 | UG/G | A | 5.8 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | COPPER | 13.1 | UG/G | A | 6.1 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | IRON | 7290 | UG/G | A | 23.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | IRON | 2690 | UG/G | A | 23.4 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | IRON | 8540 | UG/G | A | 24.5 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | IRON | 6600 | UG/G | A | 22.6 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | LEAD | 10 5 | UG/G | A | 9.2 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | LEAD | 14.6 | UG/G | A | 9.1 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | LEAD | 24.7 | UG/G | A | 24 7 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | LEAD | 18.5 | UG/G | A | 2.4 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | LITHIUM | 9.2 | UG/G | V | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | LITHIUM | 10.8 | UG/G | V | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | LITHIUM | 3.1 | UG/G | V | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | LITHIUM | 13.6 | UG/G | V | 2 4 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | MAGNESIUM | 4160 | UG/G | A | 1170 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | MAGNESIUM | 4440 | UG/G | A | 1130 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | MAGNESIUM | 2560 | UG/G | A | 1170 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | MAGNESIUM | 4730 | UG/G | A | 1220 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | MANGANESE | 159 | UG/G | A | 3.5 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | MANGANESE | 32 8 | UG/G | A | 3 5 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | MANGANESE | 83.0 | UG/G | A | 3.7 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | MANGANESE | 116 | UG/G | A | 3.4 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | MERCURY | 0 18 | UG/G | A | 0 12 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | MERCURY | 0.13 | UG/G | A | 0.12 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | MOLYBDENUM | 6.4 | UG/G | V | 2 3 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | MOLYBDENUM | 6.2 | UG/G | V | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | MOLYBDENUM | 5.4 | UG/G | V | 2.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | MOLYBDENUM | 8.7 | UG/G | V | 2.4 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | POTASSIUM | 1320 | UG/G | V | 1170 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | STRONTIUM | 236 | UG/G | V | 233 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | VANADIUM | 27.5 | UG/G | A | 11.7 | A | 05-MAY-89 |
| P207789 | SEP0589BR0613 | VANADIUM | 16.6 | UG/G | A | 11.3 | A | 05-MAY-89 |
| P207789 | SEP0589BR1824 | VANADIUM | 14.4 | UG/G | A | 11.7 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | VANADIUM | 34 5 | UG/G | A | 12.2 | A | 05-MAY-89 |
| P207789 | SEP0589BR1318 | ZINC | 29.4 | UG/G | A | 4.9 | A | 05-MAY-89 |
| P207789 | SEP0589BR0006 | pH | 8.8 | PHUNIT | | | | 05-MAY-89 |
| P207789 | SEP0589BR0613 | pH | 9.4 | PHUNIT | | | | 05-MAY-89 |
| P207789 | SEP0589BR1824 | pH | 8 7 | PHUNIT | | | | 05-MAY-89 |
| P207789 | SEP0589BR1318 | pH | 9.1 | PHUNIT | | | | 05-MAY-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207889 | SEP06890003 | ALUMINUM | 32700 | UG/G | A | 51.7 | A | 01-MAY-89 |
| P207889 | SEP06890306 | ALUMINUM | 9760 | UG/G | A | 47.7 | A | 01-MAY-89 |
| P207889 | SEP06890306D | ALUMINUM | 7480 | UG/G | A | 47.9 | A | 01-MAY-89 |
| P207889 | GSEP0689098900 | AMERICIUM-241 | .502 | PCI/L | | .070 | R | 19-SEP-89 |
| P207889 | SEP06890003 | ARSENIC | 9.9 | UG/G | V | 2.5 | A | 01-MAY-89 |
| P207889 | SEP06890306 | ARSENIC | 2.8 | UG/G | V | 2 3 | A | 01-MAY-89 |
| P207889 | SEP06890306D | ARSENIC | 4.4 | UG/G | V | 2.3 | A | 01-MAY-89 |
| P207889 | SEP06890306 | BARIUM | 122 | UG/G | V | 47.7 | A | 01-MAY-89 |
| P207889 | SEP06890306D | BARIUM | 108 | UG/G | V | 47 9 | A | 01-MAY-89 |
| P207889 | SEP06890003 | BARIUM | 269 | UG/G | V | 51.7 | A | 01-MAY-89 |
| P207889 | SEP06890003 | BERYLLIUM | 9.1 | UG/G | V | 1.3 | A | 01-MAY-89 |
| P207889 | SEP06890306 | BERYLLIUM | 3 2 | UG/G | A | 1.2 | A | 01-MAY-89 |
| P207889 | SEP06890306D | BERYLLIUM | 2.3 | UG/G | A | 1.2 | A | 01-MAY-89 |
| P207889 | GSEP06890290001 | BICARBONATE | 430 | MG/L | | | | 05-FEB-90 |
| P207889 | SEP0689-0501-02-1 | BICARBONATE AS CACO3 | 270.000 | MG/L | | 10.00 | | 02-MAY-90 |
| P207889 | SEP0689-0501-02-1 | BICARBONATE AS CACO3 | 620 | MG/L | | 10 | | 02-MAY-90 |
| P207889 | GW00020IT | BICARBONATE AS CACO3 | 330 | MG/L | | 1.0 | | 19-JUL-90 |
| P207889 | GW00470IT | BICARBONATE AS CACO3 | 360 | MG/L | | 1.0 | | 11-OCT-90 |
| P207889 | GW01031IT | BICARBONATE AS CACO3 | 360 | MG/L | | 1.0 | | 26-MAR-91 |
| P207889 | GW01409IT | BICARBONATE AS CACO3 | 300 | MG/L | | 1.0 | | 11-JUN-91 |
| P207889 | SEP06890003 | CALCIUM | 9620 | UG/G | A | 1290 | A | 01-MAY-89 |
| P207889 | SEP06890306 | CALCIUM | 154000 | UG/G | A | 1190 | A | 01-MAY-89 |
| P207889 | SEP06890306D | CALCIUM | 144000 | UG/G | A | 1200 | A | 01-MAY-89 |
| P207889 | GSEP06890989001 | CALCIUM | 129 00 | MG/L | V | 5000 | A | 15-SEP-89 |
| P207889 | SEP0689-0501-02-1 | CALCIUM | 12100 | UG/L | | 28.8 | | 02-MAY-90 |
| P207889 | GW00020IT | CALCIUM | 138000 00 | UG/L | | 5000 | | 19-JUL-90 |
| P207889 | GW00470IT | CALCIUM | 121000.00 | UG/L | | 5000 | | 11-OCT-90 |
| P207889 | GW01031IT | CALCIUM | 93000 00 | UG/L | | 5000 | | 26-MAR-91 |
| P207889 | GW01409IT | CALCIUM | 118000 00 | UG/L | | 5000 | | 11-JUN-91 |
| P207889 | SEP06890003 | CHROMIUM | 28.7 | UG/G | V | 2.6 | A | 01-MAY-89 |
| P207889 | SEP06890306 | CHROMIUM | 7.3 | UG/G | A | 2.4 | A | 01-MAY-89 |
| P207889 | SEP06890306D | CHROMIUM | 6.5 | UG/G | A | 2 4 | A | 01-MAY-89 |
| P207889 | GW00470IT | CHROMIUM | 25.70 | UG/L | | 10 | | 11-OCT-90 |
| P207889 | SEP06890003 | COPPER | 14.4 | UG/G | A | 6.5 | A | 01-MAY-89 |
| P207889 | SEP06890306 | COPPER | 8.2 | UG/G | A | 6.0 | A | 01-MAY-89 |
| P207889 | SEP06890306D | COPPER | 6.1 | UG/G | A | 6 0 | A | 01-MAY-89 |
| P207889 | SEP06890306D | IRON | 5180 | UG/G | V | 24.0 | A | 01-MAY-89 |
| P207889 | SEP06890003 | IRON | 22800 | UG/G | V | 25.8 | A | 01-MAY-89 |
| P207889 | SEP06890306 | IRON | 7660 | UG/G | V | 23.8 | A | 01-MAY-89 |
| P207889 | SEP06890003 | LEAD | 16.7 | UG/G | V | 3.8 | A | 01-MAY-89 |
| P207889 | SEP06890306 | LEAD | 4.7 | UG/G | V | 1.2 | A | 01-MAY-89 |
| P207889 | SEP06890306D | LEAD | 5.1 | UG/G | V | 1.2 | A | 01-MAY-89 |
| P207889 | SEP06890306D | LITHIUM | 9.6 | UG/G | V | 2.4 | A | 01-MAY-89 |
| P207889 | SEP06890003 | LITHIUM | 23.9 | UG/G | V | 2.6 | A | 01-MAY-89 |
| P207889 | SEP06890306 | LITHIUM | 12.2 | UG/G | V | 2 4 | A | 01-MAY-89 |
| P207889 | SEP06890003 | MAGNESIUM | 4380 | UG/G | A | 1290 | A | 01-MAY-89 |
| P207889 | SEP06890306 | MAGNESIUM | 3730 | UG/G | A | 1190 | A | 01-MAY-89 |
| P207889 | SEP06890306D | MAGNESIUM | 3240 | UG/G | A | 1200 | A | 01-MAY-89 |
| P207889 | GSEP06890989001 | MAGNESIUM | 71 60 | MG/L | V | 5000 | A | 15-SEP-89 |
| P207889 | GW00020IT | MAGNESIUM | 88600.00 | UG/L | | 5000 | | 19-JUL-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207889 | GW00470IT | MAGNESIUM | 76600 00 | UG/L | | 5000 | | 11-OCT-90 |
| P207889 | GW01031IT | MAGNESIUM | 69800.00 | UG/L | | 5000 | | 26-MAR-91 |
| P207889 | GW01409IT | MAGNESIUM | 72400 00 | UG/L | | 5000 | | 11-JUN-91 |
| P207889 | SEP068903060 | MANGANESE | 37.8 | UG/G | A | 3.6 | A | 01-MAY-89 |
| P207889 | SEP06890003 | MANGANESE | 91.8 | UG/G | A | 3.9 | A | 01-MAY-89 |
| P207889 | SEP06890306 | MANGANESE | 64.5 | UG/G | A | 3.6 | A | 01-MAY-89 |
| P207889 | SEP06890003 | MERCURY | 0.37 | UG/G | A | 0.13 | A | 01-MAY-89 |
| P207889 | SEP06890306 | MERCURY | 0.18 | UG/G | A | 0.12 | A | 01-MAY-89 |
| P207889 | SEP068903060 | MERCURY | 0.12 | UG/G | A | 0.11 | A | 01-MAY-89 |
| P207889 | SEP0689-0501-02-1 | MERCURY | 0 28 | UG/L | | 0.2 | | 02-MAY-90 |
| P207889 | GW00020IT | MERCURY | 0.46 | UG/L | | 0 | | 19-JUL-90 |
| P207889 | GW00470IT | MERCURY | 0.22 | UG/L | | 0 | | 11-OCT-90 |
| P207889 | GW01031IT | MERCURY | 0.27 | UG/L | | 0 | | 26-MAR-91 |
| P207889 | SEP068903060 | MOLYBDENUM | 5.1 | UG/G | V | 2.4 | A | 01-MAY-89 |
| P207889 | SEP06890003 | MOLYBDENUM | 21 1 | UG/G | V | 2.6 | A | 01-MAY-89 |
| P207889 | SEP06890306 | MOLYBDENUM | 7.1 | UG/G | V | 2 4 | A | 01-MAY-89 |
| P207889 | SEP06890003 | NICKEL | 41.7 | UG/G | A | 10.3 | A | 01-MAY-89 |
| P207889 | SEP06890306 | NICKEL | 12.8 | UG/G | A | 9.5 | A | 01-MAY-89 |
| P207889 | SEP06890003 | PLUTONIUM-239 | 0.02 | PCI/G | | | | 01-MAY-89 |
| P207889 | GSEP0689098900 | PLUTONIUM-239 | .044 | PCI/L | | .036 | R | 19-SEP-89 |
| P207889 | SEP06890003 | POTASSIUM | 2820 | UG/G | A | 1290 | A | 01-MAY-89 |
| P207889 | GW00020IT | SELENIUM | 37.80 | UG/L | S | 5 | | 19-JUL-90 |
| P207889 | GW00470IT | SELENIUM | 25.30 | UG/L | S | 5 | | 11-OCT-90 |
| P207889 | GW01031IT | SELENIUM | 16 00 | UG/L | | 5 | | 26-MAR-91 |
| P207889 | GW01409IT | SELENIUM | 27.00 | UG/L | S | 5 | | 11-JUN-91 |
| P207889 | SEP06890003 | SILVER | 3.1 | UG/G | A | 2.6 | A | 01-MAY-89 |
| P207889 | GW00470IT | SILVER | 10 30 | UG/L | | 10 | | 11-OCT-90 |
| P207889 | GSEP06890989001 | SODIUM | 171.00 | MG/L | V | 5000 | A | 15-SEP-89 |
| P207889 | SEP0689-0501-02-1 | SODIUM | 104000 | UG/L | | 30 4 | | 02-MAY-90 |
| P207889 | SEP0689-0501-02-1 | SODIUM | 122000 | UG/L | | 30.4 | | 02-MAY-90 |
| P207889 | GW00020IT | SODIUM | 201000.00 | UG/L | | 5000 | | 19-JUL-90 |
| P207889 | GW00470IT | SODIUM | 171000.00 | UG/L | E | 5000 | | 11-OCT-90 |
| P207889 | GW01031IT | SODIUM | 180000.00 | UG/L | | 5000 | | 26-MAR-91 |
| P207889 | GW01409IT | SODIUM | 168000 00 | UG/L | | 5000 | | 11-JUN-91 |
| P207889 | GW00020IT | STRONTIUM | 1990.00 | UG/L | | 200 | | 19-JUL-90 |
| P207889 | GW00470IT | STRONTIUM | 1660.00 | UG/L | | 200 | | 11-OCT-90 |
| P207889 | GW01031IT | STRONTIUM | 1570 00 | UG/L | | 200 | | 26-MAR-91 |
| P207889 | GW01409IT | STRONTIUM | 1670.00 | UG/L | | 200 | | 11-JUN-91 |
| P207889 | GSEP06890290001 | SULFATE | 390 | MG/L | | | | 05-FEB-90 |
| P207889 | SEP0689-0501-02-1 | SULFATE | 247.000 | MG/L | | 50 00 | | 02-MAY-90 |
| P207889 | GW00020IT | SULFATE | 510 | MG/L | | 2.0 | | 19-JUL-90 |
| P207889 | GW00470IT | SULFATE | 510 | MG/L | | 2.0 | | 11-OCT-90 |
| P207889 | GW01031IT | SULFATE | 320 | MG/L | | 2.0 | | 26-MAR-91 |
| P207889 | GW01409IT | SULFATE | 350 | MG/L | | 2.0 | | 11-JUN-91 |
| P207889 | SEP06890003 | URANIUM-233,-234 | 0 4 | PCI/G | | | | 01-MAY-89 |
| P207889 | SEP06890306 | URANIUM-233,-234 | 0.4 | PCI/G | | | | 01-MAY-89 |
| P207889 | SEP068903060 | URANIUM-233,-234 | 0.8 | PCI/G | | | | 01-MAY-89 |
| P207889 | GSEP0689098900 | URANIUM-233,-234 | 13 0 | PCI/L | | 0 | R | 19-SEP-89 |
| P207889 | GW00020IT | URANIUM-233,-234 | 13.44 | PCI/L | X | .6 | | 19-JUL-90 |
| P207889 | GW00470IT | URANIUM-233,-234 | 13.01 | PCI/L | | .6 | | 11-OCT-90 |
| P207889 | SEP06890003 | VANADIUM | 58.7 | UG/G | A | 12 9 | A | 01-MAY-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207889 | SEP06890306 | VANADIUM | 20 2 | UG/G | A | 11.9 | A | 01-MAY-89 |
| P207889 | SEP06890306D | VANADIUM | 13.1 | UG/G | A | 12.0 | A | 01-MAY-89 |
| P207889 | SEP06890306D | ZINC | 10.1 | UG/G | A | 4.8 | A | 01-MAY-89 |
| P207889 | SEP06890003 | ZINC | 45.3 | UG/G | A | 5.2 | A | 01-MAY-89 |
| P207889 | SEP06890306 | ZINC | 13.0 | UG/G | A | 4 8 | A | 01-MAY-89 |
| P207889 | GW00470IT | ZINC | 24.20 | UG/L | | 20 | | 11-OCT-90 |
| P207889 | GW01031IT | ZINC | 21.10 | UG/L | | 20 | | 26-MAR-91 |
| P207889 | SEP06890003 | pH | 8.3 | PHUNIT | | | | 01-MAY-89 |
| P207889 | SEP06890306 | pH | 9.1 | PHUNIT | | | | 01-MAY-89 |
| P207889 | SEP06890306D | pH | 8 9 | PHUNIT | | | | 01-MAY-89 |
| P207989 | SEP0789BR0306 | ALUMINUM | 11700 | UG/G | A | 46.2 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | ALUMINUM | 10300 | UG/G | A | 49.8 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | ALUMINUM | 8260 | UG/G | A | 47 0 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | ALUMINUM | 7240 | UG/G | A | 41.7 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | ARSENIC | 5.3 | UG/G | V | 2.4 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | ARSENIC | 7.3 | UG/G | V | 2.5 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | ARSENIC | 4.8 | UG/G | V | 2.1 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | BARIUM | 82.0 | UG/G | V | 41.7 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | BARIUM | 119 | UG/G | V | 46.2 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | BARIUM | 70.1 | UG/G | V | 47 0 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | BARIUM | 216 | UG/G | V | 49.8 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | BERYLLIUM | 3 1 | UG/G | A | 1.2 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | BERYLLIUM | 3.5 | UG/G | V | 1.2 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | BERYLLIUM | 2 5 | UG/G | V | 1.2 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | BERYLLIUM | 1.9 | UG/G | V | 1.0 | A | 02-MAY-89 |
| P207989 | GSEP07890989001 | BICARBONATE | 320 | MG/L | V | | | 14-SEP-89 |
| P207989 | GSEP07890290001 | BICARBONATE | 360 | MG/L | | | | 06-FEB-90 |
| P207989 | SEP0789-0501-02-1 | BICARBONATE AS CACO3 | 304 | MG/L | | 2 | | 02-MAY-90 |
| P207989 | GW00304IT | BICARBONATE AS CACO3 | 310 | MG/L | | 1.0 | | 28-AUG-90 |
| P207989 | GW01387IT | BICARBONATE AS CACO3 | 280 | MG/L | | 1.0 | | 06-JUN-91 |
| P207989 | SEP0789BR0003 | CALCIUM | 14000 | UG/G | A | 1040 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | CALCIUM | 72300 | UG/G | A | 11500 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | CALCIUM | 13900 | UG/G | A | 1180 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | CALCIUM | 22800 | UG/G | A | 1240 | A | 02-MAY-89 |
| P207989 | SEP0789-0501-02-1 | CALCIUM | 59300 | UG/L | | 5000 | | 02-MAY-90 |
| P207989 | GW01032IT | CALCIUM | 63700.00 | UG/L | | 5000 | | 26-MAR-91 |
| P207989 | GW01387IT | CARBONATE AS CACO3 | 6 | MG/L | | 1 0 | | 06-JUN-91 |
| P207989 | SEP0789BR0003 | CHROMIUM | 7.7 | UG/G | A | 2.1 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | CHROMIUM | 7.6 | UG/G | A | 2.3 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | CHROMIUM | 7.7 | UG/G | A | 2 5 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | CHROMIUM | 7.4 | UG/G | A | 2.4 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | COBALT | 17.8 | UG/G | V | 12.4 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | COPPER | 7.5 | UG/G | V | 5.2 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | COPPER | 6.4 | UG/G | A | 5.8 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | COPPER | 13.8 | UG/G | V | 5.9 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | COPPER | 35.9 | UG/G | V | 6.2 | A | 02-MAY-89 |
| P207989 | GW00304IT | GROSS ALPHA - DISSOL | 71.28 | PCI/L | | 2 | | 28-AUG-90 |
| P207989 | GW00666IT | GROSS ALPHA - DISSOL | 55.57 | PCI/L | | 2 | | 13-DEC-90 |
| P207989 | SEP0789BR0612 | IRON | 22300 | UG/G | A | 24.9 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | IRON | 8840 | UG/G | A | 23.5 | A | 02-MAY-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207989 | SEP0789BR0003 | IRON | 7290 | UG/G | A | 20 9 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | IRON | 10500 | UG/G | A | 23.1 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | LEAD | 8.9 | UG/G | A | 2 1 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | LEAD | 6.0 | UG/G | A | 4.8 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | LEAD | 13.8 | UG/G | A | 2.5 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | LEAD | 19.0 | UG/G | A | 9.4 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | LITHIUM | 7.9 | UG/G | V | 2 5 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | LITHIUM | 10.1 | UG/G | V | 2.4 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | LITHIUM | 6.7 | UG/G | V | 2.1 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | LITHIUM | 9.9 | UG/G | V | 2 3 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | MAGNESIUM | 1440 | UG/G | A | 1040 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | MAGNESIUM | 4120 | UG/G | A | 1150 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | MAGNESIUM | 4650 | UG/G | A | 1240 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | MAGNESIUM | 3260 | UG/G | A | 1180 | A | 02-MAY-89 |
| P207989 | SEP0789-0501-02-1 | MAGNESIUM | 47800 | UG/L | | 5000 | | 02-MAY-90 |
| P207989 | GW01032IT | MAGNESIUM | 49200.00 | UG/L | | 5000 | | 26-MAR-91 |
| P207989 | SEP0789BR0612 | MANGANESE | 165 | UG/G | A | 3 7 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | MANGANESE | 168 | UG/G | A | 3 5 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | MANGANESE | 168 | UG/G | A | 3 1 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | MANGANESE | 192 | UG/G | A | 3.5 | A | 02-MAY-89 |
| P207989 | GW01032IT | MANGANESE | 64 10 | UG/L | | 15 | | 26-MAR-91 |
| P207989 | SEP0789BR0003 | MERCURY | 0.21 | UG/G | A | 0 11 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | MERCURY | 0.21 | UG/G | A | 0.10 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | MERCURY | 0 25 | UG/G | A | 0.13 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | MERCURY | 0.24 | UG/G | A | 0.10 | A | 02-MAY-89 |
| P207989 | GW01032IT | MERCURY | 0.25 | UG/L | | 0 | | 26-MAR-91 |
| P207989 | SEP0789BR0612 | MOLYBDENUM | 7 9 | UG/G | V | 2 5 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | MOLYBDENUM | 8 1 | UG/G | V | 2.4 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | MOLYBDENUM | 6.9 | UG/G | V | 2.1 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | MOLYBDENUM | 10 4 | UG/G | V | 2.3 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | NICKEL | 10.2 | UG/G | A | 9.2 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | NICKEL | 23.0 | UG/G | A | 10 | A | 02-MAY-89 |
| P207989 | SEP0789BR0003 | PLUTONIUM-239 | 0 05 | PCI/G | | | | 02-MAY-89 |
| P207989 | SEP0789BR0003 | POTASSIUM | 1750 | UG/G | V | 1040 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | POTASSIUM | 1320 | UG/G | V | 1150 | A | 02-MAY-89 |
| P207989 | SEP0789-0501-02-1 | SELENIUM | 20 7 | UG/L | | 5 | | 02-MAY-90 |
| P207989 | GW01032IT | SELENIUM | 17.00 | UG/L | | 5 | | 26-MAR-91 |
| P207989 | SEP0789BR0612 | SODIUM | 1340 | UG/G | V | 1240 | A | 02-MAY-89 |
| P207989 | SEP0789-0501-02-1 | SODIUM | 246000 | UG/L | | 5000 | | 02-MAY-90 |
| P207989 | GW01032IT | SODIUM | 241000 00 | UG/L | | 5000 | | 26-MAR-91 |
| P207989 | SEP0789-0501-02-1 | STRONTIUM | 996 | UG/L | | 100 | | 02-MAY-90 |
| P207989 | GW01032IT | STRONTIUM | 1060.00 | UG/L | | 200 | | 26-MAR-91 |
| P207989 | GSEP07890989001 | SULFATE | 210 | MG/L | V | | | 14-SEP-89 |
| P207989 | GSEP07890290001 | SULFATE | 250 | MG/L | | | | 06-FEB-90 |
| P207989 | SEP0789-0501-02-1 | SULFATE | 209 | MG/L | | 50 | | 02-MAY-90 |
| P207989 | GW00304IT | SULFATE | 340 | MG/L | | 2.0 | | 28-AUG-90 |
| P207989 | GW00666IT | SULFATE | 280 | MG/L | | 20 | | 13-DEC-90 |
| P207989 | GW01387IT | SULFATE | 180 | MG/L | | 2 0 | | 06-JUN-91 |
| P207989 | SEP0789BR0003 | URANIUM-233,-234 | 0.6 | PCI/G | | | | 02-MAY-89 |
| P207989 | SEP0789BR0612 | URANIUM-233,-234 | 1.9 | PCI/G | | | | 02-MAY-89 |
| P207989 | SEP0789BR0306 | URANIUM-233,-234 | 1.2 | PCI/G | | | | 02-MAY-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P207989 | SEP0789BR1218 | URANIUM-233,-234 | 0.9 | PCI/G | | | | 02-MAY-89 |
| P207989 | GW00304IT | URANIUM-233,-234 | 28.36 | PCI/L | | .6 | | 28-AUG-90 |
| P207989 | GW00666IT | URANIUM-233,-234 | 26.54 | PCI/L | | .6 | | 13-DEC-90 |
| P207989 | SEP0789BR0003 | VANADIUM | 24.3 | UG/G | A | 10 4 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | VANADIUM | 26.9 | UG/G | A | 11 5 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | VANADIUM | 68.9 | UG/G | A | 12.4 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | VANADIUM | 27.8 | UG/G | A | 11.8 | A | 02-MAY-89 |
| P207989 | SEP0789BR0612 | ZINC | 93 4 | UG/G | V | 5.0 | A | 02-MAY-89 |
| P207989 | SEP0789BR1218 | ZINC | 41.4 | UG/G | V | 4.7 | A | 02-MAY-89 |
| P207989 | SEP0789BR0306 | pH | 8.9 | PHUNIT | | | | 02-MAY-89 |
| P207989 | SEP0789BR0612 | pH | 9.0 | PHUNIT | | | | 02-MAY-89 |
| P207989 | SEP0789BR1218 | pH | 8.7 | PHUNIT | | | | 02-MAY-89 |
| P207989 | SEP0789BR0003 | pH | 8 6 | PHUNIT | | | | 02-MAY-89 |
| P209689 | SEP2489BR0612 | ALUMINUM | 9350 | UG/G | A | 46.3 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | ALUMINUM | 8770 | UG/G | A | 47.8 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | ALUMINUM | 9130 | UG/G | A | 48.9 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | ARSENIC | 12.5 | UG/G | V | 4 7 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | BARIUM | 174 | UG/G | V | 47.8 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | BARIUM | 90.5 | UG/G | V | 48.9 | A | 03-MAY-89 |
| P209689 | SEP2489BR0612 | BERYLLIUM | 2.3 | UG/G | V | 1.2 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | BERYLLIUM | 2.7 | UG/G | V | 1 2 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | BERYLLIUM | 4.1 | UG/G | A | 1.2 | A | 03-MAY-89 |
| P209689 | GW01425IT | BICARBONATE AS CACO3 | 300 | MG/L | | 1 0 | | 13-JUN-91 |
| P209689 | SEP2489BR0612 | CALCIUM | 3110 | UG/G | A | 1160 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | CALCIUM | 2730 | UG/G | A | 1190 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | CALCIUM | 4760 | UG/G | A | 1220 | A | 03-MAY-89 |
| P209689 | GW01425IT | CALCIUM | 183000 00 | UG/L | | 5000 | | 13-JUN-91 |
| P209689 | SEP2489BR0612 | CHROMIUM | 8.3 | UG/G | A | 2.3 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | CHROMIUM | 10.0 | UG/G | A | 2 4 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | CHROMIUM | 10.2 | UG/G | A | 2.4 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | COBALT | 88.9 | UG/G | A | 11.9 | A | 03-MAY-89 |
| P209689 | SEP2489BR0612 | COPPER | 5.9 | UG/G | V | 5.8 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | COPPER | 73.6 | UG/G | A | 6.0 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | COPPER | 19.4 | UG/G | V | 6 1 | A | 03-MAY-89 |
| P209689 | SEP2489BR0612 | IRON | 7550 | UG/G | A | 23.2 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | IRON | 11200 | UG/G | A | 24.4 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | IRON | 75900 | UG/G | A | 239 | A | 03-MAY-89 |
| P209689 | SEP2489BR0612 | LEAD | 6.9 | UG/G | A | 1.1 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | LEAD | 14.8 | UG/G | A | 2.5 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | LEAD | 30.9 | UG/G | A | 23.4 | A | 03-MAY-89 |
| P209689 | SEP2489BR0612 | LITHIUM | 10.6 | UG/G | V | 2.3 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | LITHIUM | 4.7 | UG/G | V | 2.4 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | LITHIUM | 4.3 | UG/G | V | 2.4 | A | 03-MAY-89 |
| P209689 | SEP2489BR0612 | MAGNESIUM | 3020 | UG/G | A | 1160 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | MAGNESIUM | 3580 | UG/G | A | 1190 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | MAGNESIUM | 3320 | UG/G | A | 1220 | A | 03-MAY-89 |
| P209689 | GW01425IT | MAGNESIUM | 30200 00 | UG/L | | 5000 | | 13-JUN-91 |
| P209689 | SEP2489BR0612 | MANGANESE | 125 | UG/G | A | 3.5 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | MANGANESE | 1620 | UG/G | A | 3.6 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | MANGANESE | 46.0 | UG/G | A | 3.7 | A | 03-MAY-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P219489 | P2194891114 | VANADIUM | 17.1 | UG/G | | 10.1 | | 05-DEC-89 |
| P219489 | P2194890911 | VANADIUM | 14.7 | UG/G | | 8.1 | | 05-DEC-89 |
| P219489 | P2194890307 | ZINC | 13.9 | UG/G | | 3.7 | | 05-DEC-89 |
| P219489 | P2194890709 | ZINC | 13.0 | UG/G | | 3.3 | | 05-DEC-89 |
| P219489 | P2194891114 | ZINC | 20.9 | UG/G | | 4 1 | | 05-DEC-89 |
| P219489 | P2194891418 | ZINC | 47.9 | UG/G | | 4.6 | | 05-DEC-89 |
| P219489 | P2194890911 | ZINC | 21.8 | UG/G | | 3.3 | | 05-DEC-89 |
| P219489 | P2194891822 | pH | 8 7 | PHUNIT | | | | 05-DEC-89 |
| P219489 | P2194891418 | pH | 8.6 | PHUNIT | | | | 05-DEC-89 |
| P219489 | P2194891114 | pH | 8.6 | PHUNIT | | | | 05-DEC-89 |
| P219489 | P2194890911 | pH | 8.7 | PHUNIT | | | | 05-DEC-89 |
| P219489 | P2194890709 | pH | 8 9 | PHUNIT | | | | 05-DEC-89 |
| P219489 | P2194890307 | pH | 8.6 | PHUNIT | | | | 05-DEC-89 |
| P219489 | P2194892226 | pH | 8.9 | PHUNIT | | | | 06-DEC-89 |
| P219589 | P2195891719 | ALUMINUM | 4830 | UG/G | | 48.2 | | |
| P219589 | P2195890003 | ALUMINUM | 5580 | UG/G | | 41 7 | | |
| P219589 | P2195890711 | ALUMINUM | 7590 | UG/G | | 34.6 | | |
| P219589 | P2195891117 | ALUMINUM | 2440 | UG/G | | 33.4 | | |
| P219589 | P2195891719 | ARSENIC | 18.0 | UG/G | | 8 5 | | |
| P219589 | P2195890003 | ARSENIC | 3.8 | UG/G | | 2.3 | | |
| P219589 | P2195891117 | ARSENIC | 2 6 | UG/G | | 2.1 | | |
| P219589 | P2195890003 | BARIUM | 81.2 | UG/G | | 41.7 | | |
| P219589 | P2195890711 | BARIUM | 70.9 | UG/G | | 34.6 | | |
| P219589 | P2195890003 | BERYLLIUM | 1.1 | UG/G | | 1.0 | | |
| P219589 | P2195891719 | CALCIUM | 2310 | UG/G | | 1200 | | |
| P219589 | P2195890003 | CALCIUM | 4520 | UG/G | | 1040 | | |
| P219589 | P2195891117 | CALCIUM | 2020 | UG/G | | 834 | | |
| P219589 | P2195890711 | CALCIUM | 7230 | UG/G | | 866 | | |
| P219589 | P2195891719 | CHROMIUM | 7.1 | UG/G | | 2 4 | | |
| P219589 | P2195890003 | CHROMIUM | 7.8 | UG/G | | 2.1 | | |
| P219589 | P2195890711 | CHROMIUM | 4.7 | UG/G | | 1.7 | | |
| P219589 | P2195891117 | CHROMIUM | 4.4 | UG/G | | 1.7 | | |
| P219589 | P2195890003 | COBALT | 22 2 | UG/G | | 10.4 | | |
| P219589 | P2195890003 | COPPER | 13.1 | UG/G | | 5.2 | | |
| P219589 | P2195890711 | COPPER | 6.6 | UG/G | | 4 3 | | |
| P219589 | P2195891117 | COPPER | 9 1 | UG/G | | 4.2 | | |
| P219589 | P2195891719 | COPPER | 11.4 | UG/G | | 6.0 | | |
| P219589 | P2195890003 | IRON | 8430 | UG/G | | 20 9 | | |
| P219589 | P2195890711 | IRON | 4160 | UG/G | | 17.3 | | |
| P219589 | P2195891719 | IRON | 6420 | UG/G | | 24.1 | | |
| P219589 | P2195891117 | IRON | 4950 | UG/G | | 16.7 | | |
| P219589 | P2195890003 | LEAD | 1.2 | UG/G | | 0.69 | | |
| P219589 | P2195891117 | LEAD | 3.7 | UG/G | | 1.3 | | |
| P219589 | P2195891719 | LEAD | 15.8 | UG/G | | 6.4 | | |
| P219589 | P2195890711 | LEAD | 8.8 | UG/G | | 1.2 | | |
| P219589 | P2195890003 | MAGNESIUM | 1400 | UG/G | | 1040 | | |
| P219589 | P2195890711 | MAGNESIUM | 1780 | UG/G | | 866 | | |
| P219589 | P2195891719 | MAGNESIUM | 1800 | UG/G | | 1200 | | |
| P219589 | P2195890003 | MANGANESE | 562 | UG/G | | 3 1 | | |
| P219589 | P2195890711 | MANGANESE | 196 | UG/G | | 2.6 | | |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P219589 | P2195891719 | MANGANESE | 53 2 | UG/G | | 3.6 | | |
| P219589 | P2195891117 | MANGANESE | 135 | UG/G | | 2.5 | | |
| P219589 | P2195890003 | MERCURY | 0.12 | UG/G | | 0.12 | | |
| P219589 | P2195890711 | MERCURY | 0.12 | UG/G | | 0.12 | | |
| P219589 | P2195891719 | MERCURY | 0 12 | UG/G | | 0.12 | | |
| P219589 | P2195890003 | NICKEL | 20.8 | UG/G | | 8.3 | | |
| P219589 | P2195890711 | NICKEL | 13.6 | UG/G | | 6.9 | | |
| P219589 | P2195891117 | NICKEL | 7.7 | UG/G | | 6 7 | | |
| P219589 | P2195891719 | POTASSIUM | 1250 | UG/G | | 1200 | | |
| P219589 | P2195890711 | POTASSIUM | 1060 | UG/G | | 866 | | |
| P219589 | P2195890003 | STRONTIUM | 21.6 | UG/G | | 20.9 | | |
| P219589 | P2195890711 | STRONTIUM | 23 2 | UG/G | | 17.3 | | |
| P219589 | P2195890003 | VANADIUM | 27 7 | UG/G | | 10.4 | | |
| P219589 | P2195891719 | VANADIUM | 13.0 | UG/G | | 12.0 | | |
| P219589 | P2195891117 | VANADIUM | 14.8 | UG/G | | 8.3 | | |
| P219589 | P2195890003 | ZINC | 34.1 | UG/G | | 4.2 | | |
| P219589 | P2195891719 | ZINC | 23.4 | UG/G | | 4.8 | | |
| P219589 | P2195891117 | ZINC | 9.6 | UG/G | | 3 3 | | |
| P219589 | P2195890711 | ZINC | 47.1 | UG/G | | 3 5 | | |
| P219589 | P2195890003 | pH | 8.8 | PHUNIT | | | | |
| P219589 | P2195891719 | pH | 8.4 | PHUNIT | | | | |
| P219589 | P2195891117 | pH | 9.0 | PHUNIT | | | | |
| P219589 | P2195890711 | pH | 8.9 | PHUNIT | | | | |
| P219589 | P2195890307 | pH | 8.8 | PHUNIT | | | | |
| P313589 | PZ07890003 | ALUMINUM | 3870 | UG/G | V | 40 9 | A | 12-OCT-89 |
| P313589 | PZ07890812 | ALUMINUM | 3510 | UG/G | V | 36.8 | A | 12-OCT-89 |
| P313589 | PZ07891216 | ALUMINUM | 3010 | UG/G | V | 41.6 | A | 12-OCT-89 |
| P313589 | PZ07890003 | BARIUM | 57.3 | UG/G | V | 40 9 | A | 12-OCT-89 |
| P313589 | PZ07890812 | BARIUM | 36.9 | UG/G | V | 36.8 | A | 12-OCT-89 |
| P313589 | PZ07890003 | CALCIUM | 11500 | UG/G | V | 1020 | A | 12-OCT-89 |
| P313589 | PZ07890812 | CALCIUM | 23500 | UG/G | V | 919 | A | 12-OCT-89 |
| P313589 | PZ07891216 | CALCIUM | 17800 | UG/G | V | 1040 | A | 12-OCT-89 |
| P313589 | PZ07890003 | CHROMIUM | 13 6 | UG/G | V | 2.0 | A | 12-OCT-89 |
| P313589 | PZ07890812 | CHROMIUM | 4.9 | UG/G | A | 1.8 | A | 12-OCT-89 |
| P313589 | PZ07891216 | CHROMIUM | 3.3 | UG/G | A | 2.1 | A | 12-OCT-89 |
| P313589 | PZ07890003 | COPPER | 10.7 | UG/G | A | 5.1 | A | 12-OCT-89 |
| P313589 | PZ07890812 | COPPER | 11.0 | UG/G | A | 4.6 | A | 12-OCT-89 |
| P313589 | PZ07891216 | COPPER | 14.0 | UG/G | A | 5.2 | A | 12-OCT-89 |
| P313589 | PZ07890003 | IRON | 7020 | UG/G | V | 20.4 | A | 12-OCT-89 |
| P313589 | PZ07891216 | IRON | 11100 | UG/G | V | 20.8 | A | 12-OCT-89 |
| P313589 | PZ07890812 | IRON | 8550 | UG/G | V | 18.4 | A | 12-OCT-89 |
| P313589 | PZ07890003 | LEAD | 9.5 | UG/G | V | 1.1 | A | 12-OCT-89 |
| P313589 | PZ07891216 | LEAD | 3.5 | UG/G | V | 1 2 | A | 12-OCT-89 |
| P313589 | PZ07890812 | LEAD | 1.8 | UG/G | V | 1 3 | A | 12-OCT-89 |
| P313589 | PZ07890812 | MAGNESIUM | 1890 | UG/G | V | 919 | A | 12-OCT-89 |
| P313589 | PZ07891216 | MAGNESIUM | 1410 | UG/G | V | 1040 | A | 12-OCT-89 |
| P313589 | PZ07890003 | MANGANESE | 129 | UG/G | V | 3 1 | A | 12-OCT-89 |
| P313589 | PZ07890812 | MANGANESE | 37 8 | UG/G | V | 2 8 | A | 12-OCT-89 |
| P313589 | PZ07891216 | MANGANESE | 51.2 | UG/G | V | 3.1 | A | 12-OCT-89 |
| P313589 | PZ07890003 | MERCURY | 0.22 | UG/G | A | 0.11 | A | 12-OCT-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P210289 | SEP3189BR0713 | LEAD | 25 9 | UG/G | V | 4 7 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | LEAD | 31.1 | UG/G | V | 4.9 | A | 15-MAY-89 |
| P210289 | SEP3189BR0306 | LITHIUM | 11.9 | UG/G | V | 2 3 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | LITHIUM | 5.8 | UG/G | V | 2.4 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | LITHIUM | 4.1 | UG/G | V | 2 4 | A | 15-MAY-89 |
| P210289 | SEP3189BR0306 | MAGNESIUM | 1720 | UG/G | V | 1150 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | MAGNESIUM | 3590 | UG/G | V | 1180 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | MAGNESIUM | 2870 | UG/G | V | 1210 | A | 15-MAY-89 |
| P210289 | GSEP31890989001 | MAGNESIUM | 158 00 | MG/L | | 5000 | | 25-SEP-89 |
| P210289 | SEP3189-0501-02-1 | MAGNESIUM | 173000 | UG/L | | 5000 | | 02-MAY-90 |
| P210289 | GW00174IT | MAGNESIUM | 102000 | UG/L | | 5000 | | 26-JUL-90 |
| P210289 | SEP3189BR0306 | MANGANESE | 226 | UG/G | V | 3 5 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | MANGANESE | 75 4 | UG/G | V | 3 6 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | MANGANESE | 57.8 | UG/G | V | 3.5 | A | 15-MAY-89 |
| P210289 | GSEP31890989001 | MANGANESE | .266 | MG/L | | 15.0 | | 25-SEP-89 |
| P210289 | GW00174IT | MANGANESE | 15.1 | UG/L | | 15 | | 26-JUL-90 |
| P210289 | SEP3189BR0306 | MERCURY | 0 17 | UG/G | A | 0 11 | A | 15-MAY-89 |
| P210289 | GW00174IT | MERCURY | 0.33 | UG/L | | 0.2 | | 26-JUL-90 |
| P210289 | SEP3189BR0306 | MOLYBDENUM | 11.3 | UG/G | V | 2.3 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | MOLYBDENUM | 3 8 | UG/G | V | 2 4 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | MOLYBDENUM | 4.5 | UG/G | V | 2.4 | A | 15-MAY-89 |
| P210289 | SEP3189BR0306 | NICKEL | 10.5 | UG/G | A | 9.2 | A | 15-MAY-89 |
| P210289 | GSEP31890989001 | NICKEL | .174 | MG/L | | 40.0 | | 25-SEP-89 |
| P210289 | GSEP31890989001 | SELENIUM | .455 | MG/L | | 125 | | 25-SEP-89 |
| P210289 | SEP3189-0501-02-1 | SELENIUM | 302 | UG/L | | 100 | | 02-MAY-90 |
| P210289 | GW00174IT | SELENIUM | 206 | UG/L | | 5 | | 26-JUL-90 |
| P210289 | GSEP31890989001 | SODIUM | 290 00 | MG/L | | 5000 | | 25-SEP-89 |
| P210289 | SEP3189-0501-02-1 | SODIUM | 312000 | UG/L | | 5000 | | 02-MAY-90 |
| P210289 | GW00174IT | SODIUM | 198000 | UG/L | | 5000 | | 26-JUL-90 |
| P210289 | SEP3189-0501-02-1 | STRONTIUM | 3620 | UG/L | | 100 | | 02-MAY-90 |
| P210289 | GW00174IT | STRONTIUM | 2180 | UG/L | | 200 | | 26-JUL-90 |
| P210289 | GSEP31890390001 | SULFATE | 770 | MG/L | | | | 05-MAR-90 |
| P210289 | SEP3189-0501-02-1 | SULFATE | 748 | MG/L | | 250 | | 02-MAY-90 |
| P210289 | GW00174IT | SULFATE | 700 | MG/L | | 0.2 | | 26-JUL-90 |
| P210289 | GW00615IT | SULFATE | 710 | MG/L | | 2.0 | | 12-DEC-90 |
| P210289 | GW01372IT | SULFATE | 670 | MG/L | | 2.0 | | 05-JUN-91 |
| P210289 | GSEP31890989001 | URANIUM-233,-234 | 6.2 | PCI/L | | | R | 25-SEP-89 |
| P210289 | GW00174IT | URANIUM-233,-234 | 47.82 | PCI/L | | .6 | | 26-JUL-90 |
| P210289 | GW00615IT | URANIUM-233,-234 | 54.12 | PCI/L | | .6 | | 12-DEC-90 |
| P210289 | GW00174IT | URANIUM-238 | 40.81 | PCI/L | | .6 | | 26-JUL-90 |
| P210289 | GW00615IT | URANIUM-238 | 46.44 | PCI/L | | .6 | | 12-DEC-90 |
| P210289 | SEP3189BR0306 | VANADIUM | 47.0 | UG/G | V | 11.5 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | VANADIUM | 21.9 | UG/G | V | 11.8 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | VANADIUM | 26.5 | UG/G | V | 12.1 | A | 15-MAY-89 |
| P210289 | SEP3189BR0306 | ZINC | 15 5 | UG/G | V | 4.6 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | ZINC | 66.6 | UG/G | V | 4.8 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | ZINC | 48.0 | UG/G | V | 4.7 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | pH | 8 9 | PHUNIT | | | | 15-MAY-89 |
| P218389 | P2183891216 | ALUMINUM | 2080 | UG/G | | 46.3 | | 08-NOV-89 |
| P218389 | P2183890003 | ALUMINUM | 4820 | UG/G | | 36.2 | | 08-NOV-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P218389 | P2183890312 | ALUMINUM | 11900 | UG/G | | 38 1 | | 08-NOV-89 |
| P218389 | P2183890003 | BARIUM | 57.7 | UG/G | | 36.2 | | 08-NOV-89 |
| P218389 | P2183890312 | BARIUM | 99.9 | UG/G | | 38.1 | | 08-NOV-89 |
| P218389 | P2183890312 | BERYLLIUM | 1.4 | UG/G | | 0.95 | | 08-NOV-89 |
| P218389 | P2183891216 | CALCIUM | 2300 | UG/G | | 1160 | | 08-NOV-89 |
| P218389 | P2183890003 | CALCIUM | 16900 | UG/G | | 906 | | 08-NOV-89 |
| P218389 | P2183890312 | CALCIUM | 2450 | UG/G | | 952 | | 08-NOV-89 |
| P218389 | P2183891216 | CHROMIUM | 2.4 | UG/G | | 2.3 | | 08-NOV-89 |
| P218389 | P2183890003 | CHROMIUM | 6.6 | UG/G | | 1.8 | | 08-NOV-89 |
| P218389 | P2183890312 | CHROMIUM | 12.5 | UG/G | | 1.9 | | 08-NOV-89 |
| P218389 | P2183891216 | COPPER | 23.3 | UG/G | | 5.8 | | 08-NOV-89 |
| P218389 | P2183890003 | COPPER | 11.5 | UG/G | | 4.5 | | 08-NOV-89 |
| P218389 | P2183890312 | COPPER | 13.3 | UG/G | | 4.8 | | 08-NOV-89 |
| P218389 | P2183890003 | IRON | 6680 | UG/G | | 18 1 | | 08-NOV-89 |
| P218389 | P2183891216 | IRON | 22700 | UG/G | | 23.2 | | 08-NOV-89 |
| P218389 | P2183890312 | IRON | 12800 | UG/G | | 19.0 | | 08-NOV-89 |
| P218389 | P2183891216 | LEAD | 8.7 | UG/G | | 1.2 | | 08-NOV-89 |
| P218389 | P2183890003 | MAGNESIUM | 1100 | UG/G | | 906 | | 08-NOV-89 |
| P218389 | P2183890312 | MAGNESIUM | 1360 | UG/G | | 952 | | 08-NOV-89 |
| P218389 | P2183890003 | MANGANESE | 117 | UG/G | | 2.7 | | 08-NOV-89 |
| P218389 | P2183890312 | MANGANESE | 594 | UG/G | | 2.9 | | 08-NOV-89 |
| P218389 | P2183891216 | MANGANESE | 236 | UG/G | | 3 5 | | 08-NOV-89 |
| P218389 | P2183890312 | MERCURY | 0.10 | UG/G | | 0.10 | | 08-NOV-89 |
| P218389 | P2183890312 | NICKEL | 18 9 | UG/G | | 7 6 | | 08-NOV-89 |
| P218389 | P2183891216 | NICKEL | 18 8 | UG/G | | 9.3 | | 08-NOV-89 |
| P218389 | P2183890003 | POTASSIUM | 1050 | UG/G | | 906 | | 08-NOV-89 |
| P218389 | P2183890312 | POTASSIUM | 1120 | UG/G | | 952 | | 08-NOV-89 |
| P218389 | P2183890003 | STRONTIUM | 20.8 | UG/G | | 18 1 | | 08-NOV-89 |
| P218389 | P2183890003 | TIN | 20.0 | UG/G | | 18.1 | | 08-NOV-89 |
| P218389 | P2183890312 | TIN | 33.8 | UG/G | | 19.0 | | 08-NOV-89 |
| P218389 | P2183891216 | TIN | 29.7 | UG/G | | 23.2 | | 08-NOV-89 |
| P218389 | P2183890003 | VANADIUM | 20 9 | UG/G | | 9.1 | | 08-NOV-89 |
| P218389 | P2183890312 | VANADIUM | 35.0 | UG/G | | 9.5 | | 08-NOV-89 |
| P218389 | P2183891216 | VANADIUM | 22.8 | UG/G | | 11.6 | | 08-NOV-89 |
| P218389 | P2183890003 | ZINC | 28 2 | UG/G | | 3 6 | | 08-NOV-89 |
| P218389 | P2183890312 | ZINC | 20 9 | UG/G | | 3.8 | | 08-NOV-89 |
| P218389 | P2183891216 | ZINC | 59 4 | UG/G | | 4 6 | | 08-NOV-89 |
| P218389 | P2183890003 | pH | 8.6 | PHUNIT | | | | 08-NOV-89 |
| P218389 | P2183891216 | pH | 8.3 | PHUNIT | | | | 08-NOV-89 |
| P219489 | P2194890307 | ALUMINUM | 6250 | UG/G | | 36.8 | | 05-DEC-89 |
| P219489 | P2194890709 | ALUMINUM | 4820 | UG/G | | 33.0 | | 05-DEC-89 |
| P219489 | P2194890911 | ALUMINUM | 8190 | UG/G | | 32.5 | | 05-DEC-89 |
| P219489 | P2194891114 | ALUMINUM | 4450 | UG/G | | 40.5 | | 05-DEC-89 |
| P219489 | P2194891418 | ALUMINUM | 15100 | UG/G | | 45.6 | | 05-DEC-89 |
| P219489 | P2194891114 | ARSENIC | 6.2 | UG/G | | 3 4 | | 05-DEC-89 |
| P219489 | P2194891418 | ARSENIC | 4 9 | UG/G | | 2.3 | | 05-DEC-89 |
| P219489 | P2194891418 | BARIUM | 114 | UG/G | | 45.6 | | 05-DEC-89 |
| P219489 | P2194890307 | BARIUM | 59.9 | UG/G | | 36.8 | | 05-DEC-89 |
| P219489 | P2194890911 | BARIUM | 50.1 | UG/G | | 32.5 | | 05-DEC-89 |
| P219489 | P2194890307 | CALCIUM | 20100 | UG/G | | 920 | | 05-DEC-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P219489 | P2194890911 | CALCIUM | 5490 | UG/G | | 813 | | 05-DEC-89 |
| P219489 | P2194890709 | CALCIUM | 1810 | UG/G | | 826 | | 05-DEC-89 |
| P219489 | P2194891114 | CALCIUM | 2090 | UG/G | | 1010 | | 05-DEC-89 |
| P219489 | P2194891418 | CALCIUM | 18500 | UG/G | | 1140 | | 05-DEC-89 |
| P219489 | P2194890307 | CHROMIUM | 7.9 | UG/G | | 1.8 | | 05-DEC-89 |
| P219489 | P2194890709 | CHROMIUM | 6.1 | UG/G | | 1 7 | | 05-DEC-89 |
| P219489 | P2194891114 | CHROMIUM | 6.0 | UG/G | | 2.0 | | 05-DEC-89 |
| P219489 | P2194890911 | CHROMIUM | 7.5 | UG/G | | 1.6 | | 05-DEC-89 |
| P219489 | P2194891418 | CHROMIUM | 12.8 | UG/G | | 2.3 | | 05-DEC-89 |
| P219489 | P2194890307 | COPPER | 8.3 | UG/G | | 4.6 | | 05-DEC-89 |
| P219489 | P2194890709 | COPPER | 7.6 | UG/G | | 4.1 | | 05-DEC-89 |
| P219489 | P2194891114 | COPPER | 16.9 | UG/G | | 5.1 | | 05-DEC-89 |
| P219489 | P2194890911 | COPPER | 9.9 | UG/G | | 4 1 | | 05-DEC-89 |
| P219489 | P2194891418 | COPPER | 15 2 | UG/G | | 5 7 | | 05-DEC-89 |
| P219489 | P2194890307 | IRON | 6970 | UG/G | | 18 4 | | 05-DEC-89 |
| P219489 | P2194891418 | IRON | 12400 | UG/G | | 22 8 | | 05-DEC-89 |
| P219489 | P2194890709 | IRON | 5900 | UG/G | | 16.5 | | 05-DEC-89 |
| P219489 | P2194891114 | IRON | 6230 | UG/G | | 20.3 | | 05-DEC-89 |
| P219489 | P2194890911 | IRON | 8230 | UG/G | | 16 3 | | 05-DEC-89 |
| P219489 | P2194890307 | LEAD | 3.8 | UG/G | | 2.6 | | 05-DEC-89 |
| P219489 | P2194890911 | LEAD | 5.0 | UG/G | | 3.0 | | 05-DEC-89 |
| P219489 | P2194891114 | LEAD | 8.5 | UG/G | | 2 6 | | 05-DEC-89 |
| P219489 | P2194891418 | LEAD | 7 7 | UG/G | | 3 5 | | 05-DEC-89 |
| P219489 | P2194890709 | LEAD | 4.2 | UG/G | | 2.4 | | 05-DEC-89 |
| P219489 | P2194890307 | MAGNESIUM | 2370 | UG/G | | 920 | | 05-DEC-89 |
| P219489 | P2194890911 | MAGNESIUM | 2210 | UG/G | | 813 | | 05-DEC-89 |
| P219489 | P2194891418 | MAGNESIUM | 4710 | UG/G | | 1140 | | 05-DEC-89 |
| P219489 | P2194891114 | MAGNESIUM | 1330 | UG/G | | 1010 | | 05-DEC-89 |
| P219489 | P2194890709 | MAGNESIUM | 1590 | UG/G | | 826 | | 05-DEC-89 |
| P219489 | P2194890307 | MANGANESE | 357 | UG/G | | 2 8 | | 05-DEC-89 |
| P219489 | P2194891114 | MANGANESE | 59 1 | UG/G | | 3 0 | | 05-DEC-89 |
| P219489 | P2194891418 | MANGANESE | 248 | UG/G | | 3.4 | | 05-DEC-89 |
| P219489 | P2194890911 | MANGANESE | 55.9 | UG/G | | 2.4 | | 05-DEC-89 |
| P219489 | P2194890709 | MANGANESE | 51.4 | UG/G | | 2.5 | | 05-DEC-89 |
| P219489 | P2194891114 | MERCURY | 0.13 | UG/G | | 0.12 | | 05-DEC-89 |
| P219489 | P2194890307 | NICKEL | 15 8 | UG/G | | 7 4 | | 05-DEC-89 |
| P219489 | P2194891418 | NICKEL | 16.5 | UG/G | | 9.1 | | 05-DEC-89 |
| P219489 | P2194891114 | NICKEL | 9.7 | UG/G | | 8.1 | | 05-DEC-89 |
| P219489 | P2194890911 | NICKEL | 7.0 | UG/G | | 6.5 | | 05-DEC-89 |
| P219489 | P2194890709 | POTASSIUM | 957 | UG/G | | 826 | | 05-DEC-89 |
| P219489 | P2194891418 | POTASSIUM | 3570 | UG/G | | 1140 | | 05-DEC-89 |
| P219489 | P2194890911 | POTASSIUM | 1400 | UG/G | | 813 | | 05-DEC-89 |
| P219489 | P2194890307 | STRONTIUM | 42.5 | UG/G | | 18 4 | | 05-DEC-89 |
| P219489 | P2194890911 | STRONTIUM | 30.9 | UG/G | | 16.3 | | 05-DEC-89 |
| P219489 | P2194891418 | STRONTIUM | 38.7 | UG/G | | 22.8 | | 05-DEC-89 |
| P219489 | P2194890709 | STRONTIUM | 17.0 | UG/G | | 16 5 | | 05-DEC-89 |
| P219489 | P2194890911 | TIN | 16.9 | UG/G | | 16.3 | | 05-DEC-89 |
| P219489 | P2194891418 | TIN | 27.2 | UG/G | | 22.8 | | 05-DEC-89 |
| P219489 | P2194890307 | VANADIUM | 15.8 | UG/G | | 9 2 | | 05-DEC-89 |
| P219489 | P2194891418 | VANADIUM | 25 8 | UG/G | | 11 4 | | 05-DEC-89 |
| P219489 | P2194890709 | VANADIUM | 14.7 | UG/G | | 8.3 | | 05-DEC-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P209789 | GW01025IT | STRONTIUM | 957.00 | UG/L | | 200 | | 22-MAR-91 |
| P209789 | GW01388IT | STRONTIUM | 902 00 | UG/L | | 200 | | 07-JUN-91 |
| P209789 | GW00034IT | TRITIUM | 585.6 | PCI/L | | 400 | | 24-JUL-90 |
| P209789 | GW00538IT | TRITIUM | 792 4 | PCI/L | | 400 | | 19-OCT-90 |
| P209789 | SEP25890006 | URANIUM-233,-234 | 0.2 | PCI/G | | | | 04-MAY-89 |
| P209789 | SEP25890812 | URANIUM-233,-234 | 0 4 | PCI/G | | | | 04-MAY-89 |
| P209789 | SEP25890608 | URANIUM-233,-234 | 0.5 | PCI/G | | | | 04-MAY-89 |
| P209789 | SEP25891216 | URANIUM-233,-234 | 0 7 | PCI/G | | | | 04-MAY-89 |
| P209789 | GSEP25890989001D | URANIUM-233,-234 | 2.87 | PCI/L | | 0 | A | 13-SEP-89 |
| P209789 | GSEP25890989001 | URANIUM-233,-234 | 3.45 | PCI/L | | .07 | A | 13-SEP-89 |
| P209789 | GW00034IT | URANIUM-233,-234 | 3.973 | PCI/L | | .6 | | 24-JUL-90 |
| P209789 | GW00538IT | URANIUM-233,-234 | 2.886 | PCI/L | | .6 | | 19-OCT-90 |
| P209789 | SEP25891216 | VANADIUM | 17.0 | UG/G | | 12.5 | | 04-MAY-89 |
| P209789 | SEP25890006 | VANADIUM | 13.6 | UG/G | | 11.2 | | 04-MAY-89 |
| P209789 | GW01388IT | ZINC | 43 70 | UG/L | | 20 | | 07-JUN-91 |
| P209789 | SEP25890006 | pH | 8 8 | PHUNIT | | | | 04-MAY-89 |
| P209789 | SEP25891216 | pH | 9 1 | PHUNIT | | | | 04-MAY-89 |
| P209789 | SEP25890812 | pH | 9.0 | PHUNIT | | | | 04-MAY-89 |
| P209789 | SEP25890608 | pH | 9 1 | PHUNIT | | | | 04-MAY-89 |
| P210289 | SEP3189BR0306 | ALUMINUM | 18200 | UG/G | V | 46.1 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | ALUMINUM | 6130 | UG/G | V | 48.4 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | ALUMINUM | 6310 | UG/G | V | 47 3 | A | 15-MAY-89 |
| P210289 | GSEP31890989001 | AMERICIUM-241 | 0.18 | PCI/L | | | R | 25-SEP-89 |
| P210289 | SEP3189BR1319 | ARSENIC | 7.3 | UG/G | V | 2 5 | A | 15-MAY-89 |
| P210289 | SEP3189BR0306 | ARSENIC | 14.1 | UG/G | V | 2.3 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | ARSENIC | 3.1 | UG/G | V | 2.3 | A | 15-MAY-89 |
| P210289 | SEP3189BR0306 | BARIUM | 144 | UG/G | V | 46 1 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | BARIUM | 254 | UG/G | V | 47.3 | A | 15-MAY-89 |
| P210289 | SEP3189BR0306 | BERYLLIUM | 5.5 | UG/G | V | 1.2 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | BERYLLIUM | 2 4 | UG/G | V | 1.2 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | BERYLLIUM | 2.5 | UG/G | V | 1.2 | A | 15-MAY-89 |
| P210289 | GW00174IT | BICARBONATE AS CACO3 | 260 | MG/L | | 1 | | 26-JUL-90 |
| P210289 | GW00615IT | BICARBONATE AS CACO3 | 260 | MG/L | | 1.0 | | 12-DEC-90 |
| P210289 | SEP3189BR0306 | CALCIUM | 5870 | UG/G | V | 1150 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | CALCIUM | 48900 | UG/G | V | 11800 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | CALCIUM | 3270 | UG/G | V | 1210 | A | 15-MAY-89 |
| P210289 | GSEP31890989001 | CALCIUM | 211 00 | MG/L | | 5000 | | 25-SEP-89 |
| P210289 | SEP3189-0501-02-1 | CALCIUM | 227000 | UG/L | | 5000 | | 02-MAY-90 |
| P210289 | GW00174IT | CALCIUM | 134000 | UG/L | | 5000 | | 26-JUL-90 |
| P210289 | SEP3189BR0306 | CHROMIUM | 18 1 | UG/G | V | 2.3 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | CHROMIUM | 7.2 | UG/G | V | 2.4 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | CHROMIUM | 7 5 | UG/G | V | 2 4 | A | 15 MAY-89 |
| P210289 | SEP3189BR0306 | COPPER | 7.3 | UG/G | A | 5.8 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | COPPER | 18.0 | UG/G | V | 5.9 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | COPPER | 15.7 | UG/G | V | 6.1 | A | 15-MAY-89 |
| P210289 | GW00174IT | GROSS ALPHA - DISSOL | 82.88 | PCI/L | | 2 | | 26-JUL-90 |
| P210289 | SEP3189BR0306 | IRON | 15300 | UG/G | V | 23.1 | A | 15-MAY-89 |
| P210289 | SEP3189BR1319 | IRON | 7640 | UG/G | V | 24.2 | A | 15-MAY-89 |
| P210289 | SEP3189BR0713 | IRON | 6650 | UG/G | V | 23 6 | A | 15-MAY-89 |
| P210289 | SEP3189BR0306 | LEAD | 20.2 | UG/G | V | 4.6 | A | 15-MAY-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P209789 | GW00538IT | CALCIUM | 104000 00 | UG/L | | 5000 | | 19-OCT-90 |
| P209789 | GW01025IT | CALCIUM | 98600 00 | UG/L | | 5000 | | 22-MAR-91 |
| P209789 | GW01388IT | CALCIUM | 96800.00 | UG/L | | 5000 | | 07-JUN-91 |
| P209789 | SEP25890608 | CHROMIUM | 5.6 | UG/G | | 2.2 | | 04-MAY-89 |
| P209789 | SEP25891216 | CHROMIUM | 7.3 | UG/G | | 2.5 | | 04-MAY-89 |
| P209789 | SEP25890006 | CHROMIUM | 6.4 | UG/G | | 2.2 | | 04-MAY-89 |
| P209789 | GW00538IT | CHROMIUM | 12 10 | UG/L | | 10 | | 19-OCT-90 |
| P209789 | SEP25891216 | COPPER | 8.8 | UG/G | | 6.2 | | 04-MAY-89 |
| P209789 | SEP25890006 | IRON | 6070 | UG/G | | 22 4 | | 04-MAY-89 |
| P209789 | SEP25890608 | IRON | 4740 | UG/G | | 22.0 | | 04-MAY-89 |
| P209789 | SEP25891216 | IRON | 5210 | UG/G | | 25.0 | | 04-MAY-89 |
| P209789 | SEP25891216 | LEAD | 86 9 | UG/G | | 49 9 | | 04-MAY-89 |
| P209789 | SEP25890006 | LEAD | 3 9 | UG/G | | 2 1 | | 04-MAY-89 |
| P209789 | SEP25890608 | LEAD | 4.1 | UG/G | | 1 1 | | 04-MAY-89 |
| P209789 | SEP25890006 | LITHIUM | 6.5 | UG/G | | 2.2 | | 04-MAY-89 |
| P209789 | SEP25890608 | LITHIUM | 5.3 | UG/G | | 2 2 | | 04-MAY-89 |
| P209789 | SEP25891216 | LITHIUM | 8.9 | UG/G | | 2.5 | | 04-MAY-89 |
| P209789 | SEP25891216 | MAGNESIUM | 3260 | UG/G | | 1250 | | 04-MAY-89 |
| P209789 | SEP25890006 | MAGNESIUM | 1800 | UG/G | | 1120 | | 04-MAY-89 |
| P209789 | SEP25890608 | MAGNESIUM | 1940 | UG/G | | 1100 | | 04-MAY-89 |
| P209789 | GSEP25890989001 | MAGNESIUM | 27.30 | MG/L | | 5000 | | 13-SEP-89 |
| P209789 | GSEP25890989001D | MAGNESIUM | 27.00 | MG/L | | 5000 | | 13-SEP-89 |
| P209789 | SEP2589-0504-02-0 | MAGNESIUM | 31600 | UG/L | | 5000 | | 04-MAY-90 |
| P209789 | GW00034IT | MAGNESIUM | 32900 | UG/L | | 5000 | | 24-JUL-90 |
| P209789 | GW00538IT | MAGNESIUM | 35700.00 | UG/L | | 5000 | | 19-OCT-90 |
| P209789 | GW01025IT | MAGNESIUM | 35900.00 | UG/L | | 5000 | | 22-MAR-91 |
| P209789 | GW01388IT | MAGNESIUM | 32600.00 | UG/L | | 5000 | | 07-JUN-91 |
| P209789 | SEP25890006 | MANGANESE | 80.6 | UG/G | | 3 4 | | 04-MAY-89 |
| P209789 | SEP25890608 | MANGANESE | 45.3 | UG/G | | 3 3 | | 04-MAY-89 |
| P209789 | SEP25891216 | MANGANESE | 67.2 | UG/G | | 3.7 | | 04-MAY-89 |
| P209789 | SEP25890006 | MERCURY | 0.32 | UG/G | | 0.11 | | 04-MAY-89 |
| P209789 | SEP25890608 | MERCURY | 0 30 | UG/G | | 0 10 | | 04-MAY-89 |
| P209789 | GW01025IT | MERCURY | 0.29 | UG/L | | 0 | | 22-MAR-91 |
| P209789 | SEP25890006 | MOLYBDENUM | 7.0 | UG/G | | 2.2 | | 04-MAY-89 |
| P209789 | SEP25890608 | MOLYBDENUM | 4.4 | UG/G | | 2 2 | | 04-MAY-89 |
| P209789 | SEP25891216 | MOLYBDENUM | 6.2 | UG/G | | 2.5 | | 04-MAY-89 |
| P209789 | SEP25890006 | PLUTONIUM-239 | 0.03 | PCI/G | | | | 04-MAY-89 |
| P209789 | GSEP25890989001 | PLUTONIUM-239 | 018 | PCI/L | | 0 | A | 13-SEP-89 |
| P209789 | GW00538IT | SELENIUM | 5.00 | UG/L | | 5 | | 19-OCT-90 |
| P209789 | GW01025IT | SELENIUM | 6.00 | UG/L | | 5 | | 22-MAR-91 |
| P209789 | GW01388IT | SELENIUM | 6.00 | UG/L | | 5 | | 07-JUN-91 |
| P209789 | GSEP25890989001 | SODIUM | 56.80 | MG/L | | 5000 | | 13-SEP-89 |
| P209789 | GSEP25890989001D | SODIUM | 55.50 | MG/L | | 5000 | | 13-SEP-89 |
| P209789 | SEP2589-0504-02-0 | SODIUM | 55200 | UG/L | | 5000 | | 04-MAY-90 |
| P209789 | GW00034IT | SODIUM | 74000 | UG/L | | 5000 | | 24-JUL-90 |
| P209789 | GW00538IT | SODIUM | 80200.00 | UG/L | E | 5000 | | 19-OCT-90 |
| P209789 | GW01025IT | SODIUM | 77600 00 | UG/L | | 5000 | | 22-MAR-91 |
| P209789 | GW01388IT | SODIUM | 67100.00 | UG/L | | 5000 | | 07-JUN-91 |
| P209789 | SEP2589-0504-02-0 | STRONTIUM | 871 | UG/L | | 100 | | 04-MAY-90 |
| P209789 | GW00034IT | STRONTIUM | 832 | UG/L | | 200 | | 24-JUL-90 |
| P209789 | GW00538IT | STRONTIUM | 955.00 | UG/L | | 200 | | 19-OCT-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P209689 | GW01425IT | MANGANESE | 16.80 | UG/L | | 15 | | 13-JUN-91 |
| P209689 | SEP2489BR1218 | MERCURY | 0.44 | UG/G | A | 0 12 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | MERCURY | 0.12 | UG/G | A | 0.11 | A | 03-MAY-89 |
| P209689 | SEP2489BR0612 | MOLYBDENUM | 8.9 | UG/G | V | 2.3 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | MOLYBDENUM | 9.0 | UG/G | V | 2.4 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | MOLYBDENUM | 7.8 | UG/G | V | 2.4 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | NICKEL | 133 | UG/G | A | 9.6 | A | 03-MAY-89 |
| P209689 | GW01425IT | POTASSIUM | 56200.00 | UG/L | | 5000 | | 13-JUN-91 |
| P209689 | SEP2489BR1218 | SILVER | 3.7 | UG/G | A | 2.4 | A | 03-MAY-89 |
| P209689 | GW01425IT | SODIUM | 291000.00 | UG/L | | 5000 | | 13-JUN-91 |
| P209689 | GW01425IT | STRONTIUM | 852.00 | UG/L | | 200 | | 13-JUN-91 |
| P209689 | GW01425IT | SULFATE | 120 | MG/L | | 2.0 | | 13-JUN-91 |
| P209689 | SEP2489BR0006 | URANIUM-233,-234 | 0 5 | PCI/G | | | | 03-MAY-89 |
| P209689 | SEP2489BR1824 | URANIUM-233,-234 | 0 7 | PCI/G | | | | 03-MAY-89 |
| P209689 | SEP2489BR1218 | URANIUM-233,-234 | 0 7 | PCI/G | | | | 03-MAY-89 |
| P209689 | SEP2489BR0612 | URANIUM-233,-234 | 0.6 | PCI/G | | | | 03-MAY-89 |
| P209689 | SEP2489BR0612 | VANADIUM | 17.5 | UG/G | A | 11 6 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | VANADIUM | 110 | UG/G | A | 11 9 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | VANADIUM | 33.4 | UG/G | A | 12.2 | A | 03-MAY-89 |
| P209689 | SEP2489BR1218 | ZINC | 487 | UG/G | V | 4.8 | A | 03-MAY-89 |
| P209689 | SEP2489BR1824 | ZINC | 50.6 | UG/G | V | 4 9 | A | 03-MAY-89 |
| P209689 | SEP2489BR0006 | pH | 8 6 | PHUNIT | | | | 03-MAY-89 |
| P209689 | SEP2489BR1824 | pH | 8.8 | PHUNIT | | | | 03-MAY-89 |
| P209689 | SEP2489BR1218 | pH | 8.8 | PHUNIT | | | | 03-MAY-89 |
| P209689 | SEP2489BR0612 | pH | 8 9 | PHUNIT | | | | 03-MAY-89 |
| P209789 | SEP25891216 | ALUMINUM | 7800 | UG/G | | 49.9 | | 04-MAY-89 |
| P209789 | SEP25890006 | ALUMINUM | 7460 | UG/G | | 44 7 | | 04-MAY-89 |
| P209789 | SEP25890608 | ALUMINUM | 5940 | UG/G | | 44.1 | | 04-MAY-89 |
| P209789 | GSEP25890989001 | AMERICIUM-241 | 023 | PCI/L | | .010 | A | 13-SEP-89 |
| P209789 | GSEP25890989001D | AMERICIUM-241 | .044 | PCI/L | | .020 | A | 13-SEP-89 |
| P209789 | GW00538IT | AMERICIUM-241 | .02593 | PCI/L | | .01 | | 19-OCT-90 |
| P209789 | SEP25890006 | ARSENIC | 2.2 | UG/G | | 2.1 | | 04-MAY-89 |
| P209789 | SEP25890006 | BARIUM | 50.4 | UG/G | | 44.7 | | 04-MAY-89 |
| P209789 | SEP25891216 | BARIUM | 69.4 | UG/G | | 49.9 | | 04-MAY-89 |
| P209789 | SEP25890608 | BERYLLIUM | 1.5 | UG/G | | 1.1 | | 04-MAY-89 |
| P209789 | SEP25891216 | BERYLLIUM | 2.2 | UG/G | | 1.2 | | 04-MAY-89 |
| P209789 | SEP25890006 | BERYLLIUM | 1.7 | UG/G | | 1.1 | | 04-MAY-89 |
| P209789 | GSEP25890390001 | BICARBONATE | 400 | MG/L | | | | 15-MAR-90 |
| P209789 | SEP2589-0504-02-0 | BICARBONATE AS CACO3 | 258 | MG/L | | 2 | | 04-MAY-90 |
| P209789 | GW00034IT | BICARBONATE AS CACO3 | 250 | MG/L | | 1 | | 24-JUL-90 |
| P209789 | GW00538IT | BICARBONATE AS CACO3 | 280 | MG/L | | 1.0 | | 19-OCT-90 |
| P209789 | GW01025IT | BICARBONATE AS CACO3 | 280 | MG/L | | 1.0 | | 22-MAR-91 |
| P209789 | GW01388IT | BICARBONATE AS CACO3 | 290 | MG/L | | 1.0 | | 07-JUN-91 |
| P209789 | SEP25890608 | CALCIUM | 6350 | UG/G | | 1100 | | 04-MAY-89 |
| P209789 | SEP25891216 | CALCIUM | 12300 | UG/G | | 1250 | | 04-MAY-89 |
| P209789 | SEP25890006 | CALCIUM | 17800 | UG/G | | 1120 | | 04-MAY-89 |
| P209789 | GSEP25890989001 | CALCIUM | 83.30 | MG/L | | 5000 | | 13-SEP-89 |
| P209789 | GSEP25890989001D | CALCIUM | 82.30 | MG/L | | 5000 | | 13-SEP-89 |
| P209789 | SEP2589-0504-02-0 | CALCIUM | 96100 | UG/L | | 5000 | | 04-MAY-90 |
| P209789 | GW00034IT | CALCIUM | 96900 | UG/L | | 5000 | | 24-JUL-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P313589 | PZ07890812 | MERCURY | 0.23 | UG/G | A | 0.12 | A | 12-OCT-89 |
| P313589 | PZ07891216 | MERCURY | 0 19 | UG/G | A | 0 12 | A | 12-OCT-89 |
| P313589 | PZ07890812 | NICKEL | 8.5 | UG/G | A | 7.4 | A | 12-OCT-89 |
| P313589 | PZ07891216 | NICKEL | 12.9 | UG/G | A | 8.3 | A | 12-OCT-89 |
| P313589 | PZ07890003 | STRONTIUM | 40.9 | UG/G | A | 20.4 | A | 12-OCT-89 |
| P313589 | PZ07891216 | STRONTIUM | 47.8 | UG/G | A | 20.8 | A | 12-OCT-89 |
| P313589 | PZ07890812 | STRONTIUM | 56.3 | UG/G | A | 18 4 | A | 12-OCT-89 |
| P313589 | PZ07890812 | TIN | 24.8 | UG/G | A | 18.4 | A | 12-OCT-89 |
| P313589 | PZ07891216 | TIN | 26 8 | UG/G | A | 20 8 | A | 12-OCT-89 |
| P313589 | PZ07890003 | VANADIUM | 17.5 | UG/G | V | 10.2 | A | 12-OCT-89 |
| P313589 | PZ07890812 | VANADIUM | 32.6 | UG/G | V | 9.2 | A | 12-OCT-89 |
| P313589 | PZ07891216 | VANADIUM | 33.5 | UG/G | V | 10.4 | A | 12-OCT-89 |
| P313589 | PZ07890003 | ZINC | 22.0 | UG/G | V | 4.1 | A | 12-OCT-89 |
| P313589 | PZ07890812 | ZINC | 14 6 | UG/G | V | 3 7 | A | 12-OCT-89 |
| P313589 | PZ07891216 | ZINC | 25.7 | UG/G | V | 4.2 | A | 12-OCT-89 |
| P313589 | PZ07890003 | pH | 9.1 | PHUNIT | | | | 12-OCT-89 |
| P313589 | PZ07890408 | pH | 8.6 | PHUNIT | | | | 12-OCT-89 |
| P313589 | PZ07891216 | pH | 9 1 | PHUNIT | | | | 12-OCT-89 |
| P313589 | PZ07890812 | pH | 9 1 | PHUNIT | | | | 12-OCT-89 |
| P314289 | PZ31891318 | ALUMINUM | 8570 | UG/G | V | 6 7 | A | 11-OCT-89 |
| P314289 | PZ31890003 | ALUMINUM | 14000 | UG/G | V | 6.4 | A | 11-OCT-89 |
| P314289 | PZ31890711 | ALUMINUM | 12000 | UG/G | V | 6.6 | A | 11-OCT-89 |
| P314289 | PZ31890307 | ALUMINUM | 35300 | UG/G | V | 6.8 | A | 11-OCT-89 |
| P314289 | PZ31891318 | ARSENIC | 6.8 | UG/G | V | 0.45 | A | 11-OCT-89 |
| P314289 | PZ31890003 | ARSENIC | 8 7 | UG/G | V | 0.44 | A | 11-OCT-89 |
| P314289 | PZ31890307 | ARSENIC | 10.2 | UG/G | V | 2.3 | A | 11-OCT-89 |
| P314289 | PZ31890711 | ARSENIC | 7 4 | UG/G | V | 2 2 | A | 11-OCT-89 |
| P314289 | PZ31890003 | BARIUM | 87 4 | UG/G | A | 10.7 | A | 11-OCT-89 |
| P314289 | PZ31890711 | BARIUM | 54 7 | UG/G | A | 10 9 | A | 11-OCT-89 |
| P314289 | PZ31890307 | BARIUM | 161 | UG/G | A | 11.4 | A | 11-OCT-89 |
| P314289 | PZ31891318 | BARIUM | 113 | UG/G | A | 11.1 | A | 11-OCT-89 |
| P314289 | PZ31890307 | BERYLLIUM | 1.7 | UG/G | A | 0.46 | A | 11-OCT-89 |
| P314289 | PZ31890003 | CADMIUM | 0 99 | UG/G | V | 0 86 | A | 11-OCT-89 |
| P314289 | PZ31891318 | CADMIUM | 1.1 | UG/G | V | 0.89 | A | 11-OCT-89 |
| P314289 | PZ31891318 | CALCIUM | 4260 | UG/G | A | 22.3 | A | 11-OCT-89 |
| P314289 | PZ31890003 | CALCIUM | 4400 | UG/G | A | 21.5 | A | 11-OCT-89 |
| P314289 | PZ31890711 | CALCIUM | 2290 | UG/G | A | 21 9 | A | 11-OCT-89 |
| P314289 | PZ31890307 | CALCIUM | 27900 | UG/G | A | 22.8 | A | 11-OCT-89 |
| P314289 | PZ31890003 | CHROMIUM | 15.2 | UG/G | V | 4.3 | A | 11-OCT-89 |
| P314289 | PZ31890711 | CHROMIUM | 16.7 | UG/G | V | 4.4 | A | 11-OCT-89 |
| P314289 | PZ31890307 | CHROMIUM | 34.5 | UG/G | V | 4.6 | A | 11-OCT-89 |
| P314289 | PZ31891318 | CHROMIUM | 12.9 | UG/G | V | 4.5 | A | 11-OCT-89 |
| P314289 | PZ31890003 | COBALT | 5.0 | UG/G | V | 4.3 | A | 11-OCT-89 |
| P314289 | PZ31890711 | COBALT | 4.5 | UG/G | V | 4 4 | A | 11-OCT-89 |
| P314289 | PZ31891318 | COBALT | 8.9 | UG/G | V | 4.5 | A | 11-OCT-89 |
| P314289 | PZ31890307 | COBALT | 9.4 | UG/G | V | 4.6 | A | 11-OCT-89 |
| P314289 | PZ31890003 | COPPER | 36.6 | UG/G | V | 4.3 | A | 11-OCT-89 |
| P314289 | PZ31890307 | COPPER | 9.5 | UG/G | A | 4.6 | A | 11-OCT-89 |
| P314289 | PZ31890711 | COPPER | 8.6 | UG/G | A | 4.4 | A | 11-OCT-89 |
| P314289 | PZ31891318 | COPPER | 17.3 | UG/G | A | 4.5 | A | 11-OCT-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P314289 | PZ31890003 | IRON | 13800 | UG/G | V | 6.4 | A | 11-OCT-89 |
| P314289 | PZ31890307 | IRON | 23300 | UG/G | V | 6.8 | A | 11-OCT-89 |
| P314289 | PZ31890711 | IRON | 11600 | UG/G | V | 6 6 | A | 11-OCT-89 |
| P314289 | PZ31891318 | IRON | 26100 | UG/G | V | 6.7 | A | 11-OCT-89 |
| P314289 | PZ31890003 | LEAD | 47.7 | UG/G | V | 4 4 | A | 11-OCT-89 |
| P314289 | PZ31890307 | LEAD | 12 5 | UG/G | V | 0.92 | A | 11-OCT-89 |
| P314289 | PZ31891318 | LEAD | 13.5 | UG/G | V | 0.89 | A | 11-OCT-89 |
| P314289 | PZ31890711 | LEAD | 7.4 | UG/G | V | 0.44 | A | 11-OCT-89 |
| P314289 | PZ31890003 | LITHIUM | 9 9 | UG/G | A | 0.43 | A | 11-OCT-89 |
| P314289 | PZ31891318 | LITHIUM | 4.5 | UG/G | A | 0.45 | A | 11-OCT-89 |
| P314289 | PZ31890711 | LITHIUM | 7.2 | UG/G | A | 0.44 | A | 11-OCT-89 |
| P314289 | PZ31890307 | LITHIUM | 22.6 | UG/G | A | 0.46 | A | 11-OCT-89 |
| P314289 | PZ31890003 | MAGNESIUM | 2150 | UG/G | V | 43.0 | A | 11-OCT-89 |
| P314289 | PZ31890711 | MAGNESIUM | 1840 | UG/G | V | 43 7 | A | 11-OCT-89 |
| P314289 | PZ31891318 | MAGNESIUM | 1900 | UG/G | V | 44.5 | A | 11-OCT-89 |
| P314289 | PZ31890307 | MAGNESIUM | 4640 | UG/G | V | 45 6 | A | 11-OCT-89 |
| P314289 | PZ31890003 | MANGANESE | 197 | UG/G | A | 2.1 | A | 11-OCT-89 |
| P314289 | PZ31891318 | MANGANESE | 431 | UG/G | A | 2 2 | A | 11-OCT-89 |
| P314289 | PZ31890711 | MANGANESE | 187 | UG/G | A | 2.2 | A | 11-OCT-89 |
| P314289 | PZ31890307 | MANGANESE | 137 | UG/G | A | 2.3 | A | 11-OCT-89 |
| P314289 | PZ31890003 | MERCURY | 0.23 | UG/G | V | 0.090 | A | 11-OCT-89 |
| P314289 | PZ31890711 | MERCURY | 0.12 | UG/G | V | 0.095 | A | 11-OCT-89 |
| P314289 | PZ31890307 | MERCURY | 0 21 | UG/G | V | 0 095 | A | 11-OCT-89 |
| P314289 | PZ31890003 | NICKEL | 12 9 | UG/G | V | 4.3 | A | 11-OCT-89 |
| P314289 | PZ31890307 | NICKEL | 28.7 | UG/G | V | 4.6 | A | 11-OCT-89 |
| P314289 | PZ31891318 | NICKEL | 27.9 | UG/G | V | 4.5 | A | 11-OCT-89 |
| P314289 | PZ31890711 | NICKEL | 14.2 | UG/G | V | 4.4 | A | 11-OCT-89 |
| P314289 | PZ31890003 | PLUTONIUM-239 | 0.096 | PCI/G | | 0 | | 11-OCT-89 |
| P314289 | PZ31890307 | PLUTONIUM-239 | 0.023 | PCI/G | | 0 | | 11-OCT-89 |
| P314289 | PZ31891318 | PLUTONIUM-239 | 0.016 | PCI/G | | 0 | | 11-OCT-89 |
| P314289 | PZ31890003 | POTASSIUM | 1900 | UG/G | A | 43.0 | A | 11-OCT-89 |
| P314289 | PZ31890307 | POTASSIUM | 1480 | UG/G | A | 45.6 | A | 11-OCT-89 |
| P314289 | PZ31891318 | POTASSIUM | 873 | UG/G | A | 44 5 | A | 11-OCT-89 |
| P314289 | PZ31890711 | POTASSIUM | 1070 | UG/G | A | 43.7 | A | 11-OCT-89 |
| P314289 | PZ31890003 | SODIUM | 146 | UG/G | A | 10.7 | A | 11-OCT-89 |
| P314289 | PZ31890307 | SODIUM | 228 | UG/G | A | 11.4 | A | 11-OCT-89 |
| P314289 | PZ31891318 | SODIUM | 95.8 | UG/G | A | 11.1 | A | 11-OCT-89 |
| P314289 | PZ31890711 | SODIUM | 76.1 | UG/G | A | 10.9 | A | 11-OCT-89 |
| P314289 | PZ31890003 | STRONTIUM | 50.3 | UG/G | A | 2.1 | A | 11-OCT-89 |
| P314289 | PZ31891318 | STRONTIUM | 46.1 | UG/G | A | 2.2 | A | 11-OCT-89 |
| P314289 | PZ31890711 | STRONTIUM | 15.6 | UG/G | A | 2.2 | A | 11-OCT-89 |
| P314289 | PZ31890307 | STRONTIUM | 98 0 | UG/G | A | 2 3 | A | 11-OCT-89 |
| P314289 | PZ31890003 | STRONTIUM-90 | 1.68 | PCI/G | | 0. | | 11-OCT-89 |
| P314289 | PZ31890711 | URANIUM-233,-234 | 0.42 | PCI/G | | 0 | | 11-OCT-89 |
| P314289 | PZ31891318 | URANIUM-233,-234 | 0.55 | PCI/G | | 0 | | 11-OCT-89 |
| P314289 | PZ31891113 | URANIUM-233,-234 | 0.59 | PCI/G | | 0. | | 11-OCT-89 |
| P314289 | PZ31890003 | URANIUM-233,-234 | 1.66 | PCI/G | | 0 | | 11-OCT-89 |
| P314289 | PZ31890307 | URANIUM-233,-234 | 0.71 | PCI/G | | 0. | | 11-OCT-89 |
| P314289 | PZ31890003 | VANADIUM | 32.4 | UG/G | V | 2.1 | A | 11-OCT-89 |
| P314289 | PZ31890307 | VANADIUM | 64.6 | UG/G | V | 2.3 | A | 11-OCT-89 |
| P314289 | PZ31891318 | VANADIUM | 23.4 | UG/G | V | 2.2 | A | 11-OCT-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P314289 | PZ31890711 | VANADIUM | 23 5 | UG/G | V | 2.2 | A | 11-OCT-89 |
| P314289 | PZ31890003 | ZINC | 94 5 | UG/G | V | 2 1 | A | 11-OCT-89 |
| P314289 | PZ31890307 | ZINC | 35.5 | UG/G | V | 2.3 | A | 11-OCT-89 |
| P314289 | PZ31891318 | ZINC | 108 | UG/G | V | 2.2 | A | 11-OCT-89 |
| P314289 | PZ31890711 | ZINC | 19.6 | UG/G | V | 2 2 | A | 11-OCT-89 |
| P314289 | PZ31890003 | pH | 8 5 | PHUNIT | | | | 11-OCT-89 |
| P314289 | PZ31891113 | pH | 8 3 | PHUNIT | | | | 11-OCT-89 |
| P314289 | PZ31891318 | pH | 8.6 | PHUNIT | | | | 11-OCT-89 |
| P416289 | PZ57890306 | ALUMINUM | 5840 | UG/G | | 35.6 | | 19-SEP-89 |
| P416289 | PZ57890608 | ALUMINUM | 4800 | UG/G | | 27 5 | | 19-SEP-89 |
| P416289 | PZ57891014 | ALUMINUM | 4610 | UG/G | | 35.5 | | 19-SEP-89 |
| P416289 | PZ57891416 | ALUMINUM | 4270 | UG/G | | 39 1 | | 19-SEP-89 |
| P416289 | PZ57891618 | ALUMINUM | 4140 | UG/G | | 41.5 | | 19-SEP-89 |
| P416289 | PZ57891822D | ALUMINUM | 4820 | UG/G | | 35.8 | | 19-SEP-89 |
| P416289 | PZ57892223 | ALUMINUM | 3180 | UG/G | | 32.0 | | 19-SEP-89 |
| P416289 | PZ57891822 | ALUMINUM | 2780 | UG/G | | 36 9 | | 19-SEP-89 |
| P416289 | PZ57892327 | ALUMINUM | 3640 | UG/G | | 42.8 | | 19-SEP-89 |
| P416289 | PZ57892730 | ALUMINUM | 4840 | UG/G | | 40 9 | | 19-SEP-89 |
| P416289 | PZ57893034 | ALUMINUM | 2920 | UG/G | | 37 3 | | 19-SEP-89 |
| P416289 | PZ57893842 | ALUMINUM | 2040 | UG/G | | 37 0 | | 19-SEP-89 |
| P416289 | PZ57890306 | ARSENIC | 5.6 | UG/G | | 3.1 | | 19-SEP-89 |
| P416289 | PZ57890608 | ARSENIC | 2 3 | UG/G | | 1 9 | | 19-SEP-89 |
| P416289 | PZ57891014 | ARSENIC | 2 4 | UG/G | | 1.7 | | 19-SEP-89 |
| P416289 | PZ57891416 | ARSENIC | 4 0 | UG/G | | 2 0 | | 19-SEP-89 |
| P416289 | PZ57892223 | ARSENIC | 1.8 | UG/G | | 1 5 | | 19-SEP-89 |
| P416289 | PZ57892730 | ARSENIC | 4.0 | UG/G | | 1.6 | | 19-SEP-89 |
| P416289 | PZ57893842 | ARSENIC | 3.2 | UG/G | | 2 4 | | 19-SEP-89 |
| P416289 | PZ57893034 | ARSENIC | 3.2 | UG/G | | 1 8 | | 19-SEP-89 |
| P416289 | PZ57892327 | BARIUM | 66 1 | UG/G | | 42 8 | | 19-SEP-89 |
| P416289 | PZ57892730 | BARIUM | 63.1 | UG/G | | 40.9 | | 19-SEP-89 |
| P416289 | PZ57893034 | BARIUM | 61.9 | UG/G | | 37.3 | | 19-SEP-89 |
| P416289 | PZ57891822D | BARIUM | 47.0 | UG/G | | 35.8 | | 19-SEP-89 |
| P416289 | PZ57892223 | BARIUM | 65.6 | UG/G | | 32 0 | | 19-SEP-89 |
| P416289 | PZ57890306 | BARIUM | 40 7 | UG/G | | 35 6 | | 19-SEP-89 |
| P416289 | PZ57890608 | BARIUM | 29 2 | UG/G | | 27 5 | | 19-SEP-89 |
| P416289 | PZ57890306 | BERYLLIUM | 1.6 | UG/G | | 0 89 | | 19-SEP-89 |
| P416289 | PZ57890306 | CALCIUM | 1330 | UG/G | | 890 | | 19-SEP-89 |
| P416289 | PZ57891014 | CALCIUM | 5280 | UG/G | | 886 | | 19-SEP-89 |
| P416289 | PZ57890608 | CALCIUM | 1800 | UG/G | | 688 | | 19-SEP-89 |
| P416289 | PZ57891416 | CALCIUM | 1220 | UG/G | | 978 | | 19-SEP-89 |
| P416289 | PZ57892327 | CALCIUM | 2910 | UG/G | | 1070 | | 19-SEP-89 |
| P416289 | PZ57892223 | CALCIUM | 2530 | UG/G | | 800 | | 19-SEP-89 |
| P416289 | PZ57891618 | CALCIUM | 1740 | UG/G | | 1040 | | 19-SEP-89 |
| P416289 | PZ57891822D | CALCIUM | 1600 | UG/G | | 896 | | 19-SEP-89 |
| P416289 | PZ57891822 | CALCIUM | 1040 | UG/G | | 922 | | 19-SEP-89 |
| P416289 | PZ57892730 | CALCIUM | 3830 | UG/G | | 1020 | | 19-SEP-89 |
| P416289 | PZ57893034 | CALCIUM | 2720 | UG/G | | 932 | | 19-SEP-89 |
| P416289 | PZ57893842 | CALCIUM | 2190 | UG/G | | 926 | | 19-SEP-89 |
| P416289 | PZ57890306 | CHROMIUM | 8.3 | UG/G | | 1 8 | | 19-SEP-89 |
| P416289 | PZ57890608 | CHROMIUM | 4.9 | UG/G | | 1.4 | | 19-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416289 | PZ57891014 | CHROMIUM | 6.9 | UG/G | | 1.8 | | 19-SEP-89 |
| P416289 | PZ57891416 | CHROMIUM | 5.3 | UG/G | | 2.0 | | 19-SEP-89 |
| P416289 | PZ57891618 | CHROMIUM | 5 2 | UG/G | | 2.1 | | 19-SEP-89 |
| P416289 | PZ57892327 | CHROMIUM | 3 7 | UG/G | | 2.1 | | 19-SEP-89 |
| P416289 | PZ57892223 | CHROMIUM | 2.8 | UG/G | | 1.6 | | 19-SEP-89 |
| P416289 | PZ57891822D | CHROMIUM | 7.9 | UG/G | | 1.8 | | 19-SEP-89 |
| P416289 | PZ57891822 | CHROMIUM | 7.0 | UG/G | | 1.8 | | 19-SEP-89 |
| P416289 | PZ57892730 | CHROMIUM | 5.2 | UG/G | | 2 0 | | 19-SEP-89 |
| P416289 | PZ57893034 | CHROMIUM | 2.6 | UG/G | | 1 9 | | 19-SEP-89 |
| P416289 | PZ57890306 | COBALT | 13.6 | UG/G | | 8 9 | | 19-SEP-89 |
| P416289 | PZ57890306 | COPPER | 13.3 | UG/G | | 4.4 | | 19-SEP-89 |
| P416289 | PZ57891416 | COPPER | 7.6 | UG/G | | 4 9 | | 19-SEP-89 |
| P416289 | PZ57890608 | COPPER | 3 6 | UG/G | | 3 4 | | 19-SEP-89 |
| P416289 | PZ57891014 | COPPER | 7.2 | UG/G | | 4.4 | | 19-SEP-89 |
| P416289 | PZ57892327 | COPPER | 10.3 | UG/G | | 5 4 | | 19-SEP-89 |
| P416289 | PZ57892223 | COPPER | 7 5 | UG/G | | 4.0 | | 19-SEP-89 |
| P416289 | PZ57891822D | COPPER | 6.9 | UG/G | | 4.5 | | 19-SEP-89 |
| P416289 | PZ57892730 | COPPER | 14.6 | UG/G | | 5.1 | | 19-SEP-89 |
| P416289 | PZ57893034 | COPPER | 8.4 | UG/G | | 4 7 | | 19-SEP-89 |
| P416289 | PZ57893842 | COPPER | 8.6 | UG/G | | 4 6 | | 19-SEP-89 |
| P416289 | PZ57893034 | IRON | 7330 | UG/G | | 18 6 | | 19-SEP-89 |
| P416289 | PZ57893842 | IRON | 7420 | UG/G | | 18.5 | | 19-SEP-89 |
| P416289 | PZ57891822 | IRON | 4100 | UG/G | | 18.4 | | 19-SEP-89 |
| P416289 | PZ57891822D | IRON | 6980 | UG/G | | 17.9 | | 19-SEP-89 |
| P416289 | PZ57892327 | IRON | 6330 | UG/G | | 21 4 | | 19-SEP-89 |
| P416289 | PZ57892730 | IRON | 11200 | UG/G | | 20.4 | | 19-SEP-89 |
| P416289 | PZ57892223 | IRON | 4870 | UG/G | | 16.0 | | 19-SEP-89 |
| P416289 | PZ57890306 | IRON | 20000 | UG/G | | 17.8 | | 19-SEP-89 |
| P416289 | PZ57891618 | IRON | 5160 | UG/G | | 20 8 | | 19-SEP-89 |
| P416289 | PZ57891416 | IRON | 7880 | UG/G | | 19 6 | | 19-SEP-89 |
| P416289 | PZ57891014 | IRON | 8960 | UG/G | | 17 7 | | 19-SEP-89 |
| P416289 | PZ57890608 | IRON | 4860 | UG/G | | 13.8 | | 19-SEP-89 |
| P416289 | PZ57891822 | LEAD | 3 1 | UG/G | | 0.54 | | 19-SEP-89 |
| P416289 | PZ57892730 | LEAD | 10 9 | UG/G | | 2.4 | | 19-SEP-89 |
| P416289 | PZ57892327 | LEAD | 6.1 | UG/G | | 2.2 | | 19-SEP-89 |
| P416289 | PZ57893034 | LEAD | 7.4 | UG/G | | 1.1 | | 19-SEP-89 |
| P416289 | PZ57892223 | LEAD | 13.2 | UG/G | | 2.3 | | 19-SEP-89 |
| P416289 | PZ57891822D | LEAD | 1 4 | UG/G | | 0.50 | | 19-SEP-89 |
| P416289 | PZ57893842 | LEAD | 5.2 | UG/G | | 1.4 | | 19-SEP-89 |
| P416289 | PZ57891014 | MAGNESIUM | 986 | UG/G | | 886 | | 19-SEP-89 |
| P416289 | PZ57890608 | MAGNESIUM | 1030 | UG/G | | 688 | | 19-SEP-89 |
| P416289 | PZ57892730 | MAGNESIUM | 1450 | UG/G | | 1020 | | 19-SEP-89 |
| P416289 | PZ57891822D | MAGNESIUM | 1420 | UG/G | | 896 | | 19-SEP-89 |
| P416289 | PZ57892327 | MAGNESIUM | 1110 | UG/G | | 1070 | | 19-SEP-89 |
| P416289 | PZ57892223 | MAGNESIUM | 1050 | UG/G | | 800 | | 19-SEP-89 |
| P416289 | PZ57893842 | MANGANESE | 56.2 | UG/G | | 2.8 | | 19-SEP-89 |
| P416289 | PZ57891822 | MANGANESE | 69.7 | UG/G | | 2.8 | | 19-SEP-89 |
| P416289 | PZ57891822D | MANGANESE | 122 | UG/G | | 2 7 | | 19-SEP-89 |
| P416289 | PZ57892327 | MANGANESE | 161 | UG/G | | 3.2 | | 19-SEP-89 |
| P416289 | PZ57893034 | MANGANESE | 151 | UG/G | | 2.8 | | 19-SEP-89 |
| P416289 | PZ57892730 | MANGANESE | 97.8 | UG/G | | 3.1 | | 19-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416289 | PZ57892223 | MANGANESE | 168 | UG/G | | 2.4 | | 19-SEP-89 |
| P416289 | PZ57890306 | MANGANESE | 343 | UG/G | | 2.7 | | 19-SEP-89 |
| P416289 | PZ57891618 | MANGANESE | 47.0 | UG/G | | 3 1 | | 19-SEP-89 |
| P416289 | PZ57891416 | MANGANESE | 30.8 | UG/G | | 2.9 | | 19-SEP-89 |
| P416289 | PZ57891014 | MANGANESE | 52.7 | UG/G | | 2 7 | | 19-SEP-89 |
| P416289 | PZ57890608 | MANGANESE | 67.6 | UG/G | | 2.1 | | 19-SEP-89 |
| P416289 | PZ57890306 | NICKEL | 16.1 | UG/G | | 7.1 | | 19-SEP-89 |
| P416289 | PZ57890608 | NICKEL | 6.2 | UG/G | | 5 5 | | 19-SEP-89 |
| P416289 | PZ57891822D | NICKEL | 10.6 | UG/G | | 7.2 | | 19-SEP-89 |
| P416289 | PZ57893034 | NICKEL | 9.1 | UG/G | | 7.5 | | 19-SEP-89 |
| P416289 | PZ57892730 | NICKEL | 11.1 | UG/G | | 8.2 | | 19-SEP-89 |
| P416289 | PZ57892327 | NICKEL | 9.4 | UG/G | | 8.6 | | 19-SEP-89 |
| P416289 | PZ57891618 | PLUTONIUM-239 | 0.029 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57891822 | PLUTONIUM-239 | 0.021 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57893538 | PLUTONIUM-239 | 0.061 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57893842 | PLUTONIUM-239 | 0 019 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57890810 | PLUTONIUM-239 | 0.015 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57891416 | PLUTONIUM-239 | 0.039 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57891822D | POTASSIUM | 1390 | UG/G | | 896 | | 19-SEP-89 |
| P416289 | PZ57890608 | POTASSIUM | 695 | UG/G | | 688 | | 19-SEP-89 |
| P416289 | PZ57890306 | SILVER | 1.8 | UG/G | | 1.8 | | 19-SEP-89 |
| P416289 | PZ57892223 | STRONTIUM | 19 8 | UG/G | | 16.0 | | 19-SEP-89 |
| P416289 | PZ57893034 | STRONTIUM | 24.9 | UG/G | | 18 6 | | 19-SEP-89 |
| P416289 | PZ57892730 | STRONTIUM | 32.3 | UG/G | | 20.4 | | 19-SEP-89 |
| P416289 | PZ57892327 | STRONTIUM | 22.5 | UG/G | | 21.4 | | 19-SEP-89 |
| P416289 | PZ57892223 | TIN | 17.1 | UG/G | | 16.0 | | 19-SEP-89 |
| P416289 | PZ57893034 | TIN | 19.4 | UG/G | | 18.6 | | 19-SEP-89 |
| P416289 | PZ57892730 | TIN | 27.5 | UG/G | | 20 4 | | 19-SEP-89 |
| P416289 | PZ57892327 | TIN | 22.2 | UG/G | | 21.4 | | 19-SEP-89 |
| P416289 | PZ57890306 | TIN | 31.2 | UG/G | | 17.8 | | 19-SEP-89 |
| P416289 | PZ57891822D | TIN | 20 4 | UG/G | | 17 9 | | 19-SEP-89 |
| P416289 | PZ57891822 | TIN | 19.3 | UG/G | | 18.4 | | 19-SEP-89 |
| P416289 | PZ57891014 | TIN | 25.4 | UG/G | | 17 7 | | 19-SEP-89 |
| P416289 | PZ57890003 | URANIUM-233,-234 | 1.05 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57891618 | URANIUM-233,-234 | 0.53 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57891416 | URANIUM-233,-234 | 0.39 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57891014 | URANIUM-233,-234 | 0.63 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57890810 | URANIUM-233,-234 | 0.18 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57890306 | URANIUM-233,-234 | 0.77 | PCI/G | | 0. | | 19-SEP-89 |
| P416289 | PZ57890608 | URANIUM-233,-234 | 0.33 | PCI/G | | 0. | | 19-SEP-89 |
| P416289 | PZ57891822 | URANIUM-233,-234 | 0.39 | PCI/G | | 0. | | 19-SEP-89 |
| P416289 | PZ57892327 | URANIUM-233,-234 | 0.62 | PCI/G | | 0. | | 19-SEP-89 |
| P416289 | PZ57893842 | URANIUM-233,-234 | 0 55 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57893538 | URANIUM-233,-234 | 0.46 | PCI/G | | 0. | | 19-SEP-89 |
| P416289 | PZ57893034 | URANIUM-233,-234 | 0.42 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57892730 | URANIUM-233,-234 | 0.58 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57892223 | URANIUM-233,-234 | 0.62 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57891822D | URANIUM-233,-234 | 0.41 | PCI/G | | 0 | | 19-SEP-89 |
| P416289 | PZ57893842D | URANIUM-233,-234 | 1.01 | PCI/G | | 0 | | 20-SEP-89 |
| P416289 | PZ57890306 | VANADIUM | 60.6 | UG/G | | 8.9 | | 19-SEP-89 |
| P416289 | PZ57891014 | VANADIUM | 22.0 | UG/G | | 8.9 | | 19-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416289 | PZ57891822D | VANADIUM | 14.9 | UG/G | | 9.0 | | 19-SEP-89 |
| P416289 | PZ57891618 | VANADIUM | 15.3 | UG/G | | 10 4 | | 19-SEP-89 |
| P416289 | PZ57891416 | VANADIUM | 21.0 | UG/G | | 9.8 | | 19-SEP-89 |
| P416289 | PZ57890608 | VANADIUM | 10.4 | UG/G | | 6.9 | | 19-SEP-89 |
| P416289 | PZ57892223 | VANADIUM | 8.2 | UG/G | | 8.0 | | 19-SEP-89 |
| P416289 | PZ57892730 | VANADIUM | 13 3 | UG/G | | 10.2 | | 19-SEP-89 |
| P416289 | PZ57892223 | ZINC | 25.2 | UG/G | | 3.2 | | 19-SEP-89 |
| P416289 | PZ57893034 | ZINC | 38 8 | UG/G | | 3.7 | | 19-SEP-89 |
| P416289 | PZ57892730 | ZINC | 60 6 | UG/G | | 4 1 | | 19-SEP-89 |
| P416289 | PZ57893842 | ZINC | 25.6 | UG/G | | 3.7 | | 19-SEP-89 |
| P416289 | PZ57892327 | ZINC | 39.6 | UG/G | | 4.3 | | 19-SEP-89 |
| P416289 | PZ57890306 | ZINC | 14.4 | UG/G | | 3 6 | | 19-SEP-89 |
| P416289 | PZ57891014 | ZINC | 13.1 | UG/G | | 3.5 | | 19-SEP-89 |
| P416289 | PZ57891822D | ZINC | 13.5 | UG/G | | 3 6 | | 19-SEP-89 |
| P416289 | PZ57891822 | ZINC | 9.0 | UG/G | | 3.7 | | 19-SEP-89 |
| P416289 | PZ57891618 | ZINC | 9.3 | UG/G | | 4 2 | | 19-SEP-89 |
| P416289 | PZ57891416 | ZINC | 10.5 | UG/G | | 3 9 | | 19-SEP-89 |
| P416289 | PZ57890608 | ZINC | 12.3 | UG/G | | 2.8 | | 19-SEP-89 |
| P416289 | PZ57891822 | pH | 8 3 | PHUNIT | | | | 19-SEP-89 |
| P416289 | PZ57891416 | pH | 8.4 | PHUNIT | | | | 19-SEP-89 |
| P416289 | PZ57891014 | pH | 8.7 | PHUNIT | | | | 19-SEP-89 |
| P416289 | PZ57890810 | pH | 8 4 | PHUNIT | | | | 19-SEP-89 |
| P416589 | PZ60890003 | ALUMINUM | 26800 | UG/G | | 50 4 | | 13-SEP-89 |
| P416589 | PZ60890307 | ALUMINUM | 10700 | UG/G | | 41.6 | | 13-SEP-89 |
| P416589 | PZ60890307D | ALUMINUM | 9280 | UG/G | | 44.4 | | 13-SEP-89 |
| P416589 | PZ60891620 | ALUMINUM | 8300 | UG/G | | 44.3 | | 14-SEP-89 |
| P416589 | PZ60892024 | ALUMINUM | 9400 | UG/G | | 37.6 | | 14-SEP-89 |
| P416589 | PZ60892428 | ALUMINUM | 12000 | UG/G | | 44.4 | | 14-SEP-89 |
| P416589 | PZ60892831 | ALUMINUM | 8000 | UG/G | | 43.5 | | 14-SEP-89 |
| P416589 | PZ60893135 | ALUMINUM | 8340 | UG/G | | 45.0 | | 14-SEP-89 |
| P416589 | PZ60890003 | ANTIMONY | 29.6 | UG/G | | 15 1 | | 13-SEP-89 |
| P416589 | PZ60890003 | ARSENIC | 8 9 | UG/G | | 2 5 | | 13-SEP-89 |
| P416589 | PZ60890307 | ARSENIC | 3.4 | UG/G | | 2.2 | | 13-SEP-89 |
| P416589 | PZ60890307D | ARSENIC | 3 7 | UG/G | | 1 9 | | 13-SEP-89 |
| P416589 | PZ60891620 | ARSENIC | 5.9 | UG/G | | 2.1 | | 14-SEP-89 |
| P416589 | PZ60892024 | ARSENIC | 2.9 | UG/G | | 2.0 | | 14-SEP-89 |
| P416589 | PZ60892428 | ARSENIC | 4.9 | UG/G | | 2.1 | | 14-SEP-89 |
| P416589 | PZ60892831 | ARSENIC | 2.7 | UG/G | | 2.2 | | 14-SEP-89 |
| P416589 | PZ60893135 | ARSENIC | 5.4 | UG/G | | 2.1 | | 14-SEP-89 |
| P416589 | PZ60890307D | BARIUM | 53.4 | UG/G | | 44 4 | | 13-SEP-89 |
| P416589 | PZ60890003 | BARIUM | 191 | UG/G | | 50.4 | | 13-SEP-89 |
| P416589 | PZ60890307 | BARIUM | 64.2 | UG/G | | 41.6 | | 13-SEP-89 |
| P416589 | PZ60893135 | BARIUM | 164 | UG/G | | 45 0 | | 14-SEP-89 |
| P416589 | PZ60891620 | BARIUM | 113 | UG/G | | 44 3 | | 14-SEP-89 |
| P416589 | PZ60892831 | BARIUM | 53.1 | UG/G | | 43.5 | | 14-SEP-89 |
| P416589 | PZ60892024 | BARIUM | 64.2 | UG/G | | 37.6 | | 14-SEP-89 |
| P416589 | PZ60892428 | BARIUM | 105 | UG/G | | 44.4 | | 14-SEP-89 |
| P416589 | PZ60890003 | BERYLLIUM | 1 8 | UG/G | | 1.3 | | 13-SEP-89 |
| P416589 | PZ60890307 | BERYLLIUM | 1.2 | UG/G | | 1 0 | | 13-SEP-89 |
| P416589 | PZ60891620 | BERYLLIUM | 1 2 | UG/G | | 1.1 | | 14-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416589 | PZ60890003 | CALCIUM | 4450 | UG/G | | 1260 | | 13-SEP-89 |
| P416589 | PZ60890307 | CALCIUM | 4140 | UG/G | | 1040 | | 13-SEP-89 |
| P416589 | PZ60890307D | CALCIUM | 3140 | UG/G | | 1110 | | 13-SEP-89 |
| P416589 | PZ60891620 | CALCIUM | 2930 | UG/G | | 1110 | | 14-SEP-89 |
| P416589 | PZ60892831 | CALCIUM | 1900 | UG/G | | 1090 | | 14-SEP-89 |
| P416589 | PZ60892024 | CALCIUM | 2650 | UG/G | | 939 | | 14-SEP-89 |
| P416589 | PZ60892428 | CALCIUM | 3020 | UG/G | | 1110 | | 14-SEP-89 |
| P416589 | PZ60893135 | CALCIUM | 5130 | UG/G | | 1130 | | 14-SEP-89 |
| P416589 | PZ60890003 | CHROMIUM | 28 4 | UG/G | | 2.5 | | 13-SEP-89 |
| P416589 | PZ60890307 | CHROMIUM | 16.5 | UG/G | | 2.1 | | 13-SEP-89 |
| P416589 | PZ60890307D | CHROMIUM | 15.9 | UG/G | | 2.2 | | 13-SEP-89 |
| P416589 | PZ60891620 | CHROMIUM | 13.5 | UG/G | | 2.2 | | 14-SEP-89 |
| P416589 | PZ60892831 | CHROMIUM | 8.7 | UG/G | | 2.2 | | 14-SEP-89 |
| P416589 | PZ60892428 | CHROMIUM | 12.5 | UG/G | | 2 2 | | 14-SEP-89 |
| P416589 | PZ60892024 | CHROMIUM | 11.9 | UG/G | | 1.9 | | 14-SEP-89 |
| P416589 | PZ60893135 | CHROMIUM | 8.2 | UG/G | | 2.3 | | 14-SEP-89 |
| P416589 | PZ60890003 | COPPER | 25.9 | UG/G | | 6.3 | | 13-SEP-89 |
| P416589 | PZ60890307 | COPPER | 5.8 | UG/G | | 5.2 | | 13-SEP-89 |
| P416589 | PZ60891620 | COPPER | 11.9 | UG/G | | 5.5 | | 14-SEP-89 |
| P416589 | PZ60893135 | COPPER | 15.6 | UG/G | | 5 6 | | 14-SEP-89 |
| P416589 | PZ60892024 | COPPER | 10.4 | UG/G | | 4.7 | | 14-SEP-89 |
| P416589 | PZ60892831 | COPPER | 10.7 | UG/G | | 5.4 | | 14-SEP-89 |
| P416589 | PZ60892428 | COPPER | 13.2 | UG/G | | 5.6 | | 14-SEP-89 |
| P416589 | PZ60890307D | IRON | 10400 | UG/G | | 22 2 | | 13-SEP-89 |
| P416589 | PZ60890003 | IRON | 33100 | UG/G | | 25.2 | | 13-SEP-89 |
| P416589 | PZ60890307 | IRON | 12500 | UG/G | | 20.8 | | 13-SEP-89 |
| P416589 | PZ60892024 | IRON | 13000 | UG/G | | 18.8 | | 14-SEP-89 |
| P416589 | PZ60892428 | IRON | 14900 | UG/G | | 22.2 | | 14-SEP-89 |
| P416589 | PZ60893135 | IRON | 13900 | UG/G | | 22.5 | | 14-SEP-89 |
| P416589 | PZ60892831 | IRON | 11900 | UG/G | | 21.7 | | 14-SEP-89 |
| P416589 | PZ60891620 | IRON | 16800 | UG/G | | 22.1 | | 14-SEP-89 |
| P416589 | PZ60890003 | LEAD | 12.9 | UG/G | | 2.5 | | 13-SEP-89 |
| P416589 | PZ60890307 | LEAD | 4 7 | UG/G | | 1.1 | | 13-SEP-89 |
| P416589 | PZ60890307D | LEAD | 5.1 | UG/G | | 0 97 | | 13-SEP-89 |
| P416589 | PZ60891620 | LEAD | 7.4 | UG/G | | 2.1 | | 14-SEP-89 |
| P416589 | PZ60892024 | LEAD | 7.5 | UG/G | | 2 0 | | 14-SEP-89 |
| P416589 | PZ60893135 | LEAD | 13.5 | UG/G | | 3.1 | | 14-SEP-89 |
| P416589 | PZ60892831 | LEAD | 5.6 | UG/G | | 1.1 | | 14-SEP-89 |
| P416589 | PZ60892428 | LEAD | 11.0 | UG/G | | 2.1 | | 14-SEP-89 |
| P416589 | PZ60890003 | MAGNESIUM | 7110 | UG/G | | 1260 | | 13-SEP-89 |
| P416589 | PZ60890307D | MAGNESIUM | 1760 | UG/G | | 1110 | | 13-SEP-89 |
| P416589 | PZ60890307 | MAGNESIUM | 2040 | UG/G | | 1040 | | 13-SEP-89 |
| P416589 | PZ60891620 | MAGNESIUM | 2250 | UG/G | | 1110 | | 14-SEP-89 |
| P416589 | PZ60892024 | MAGNESIUM | 2570 | UG/G | | 939 | | 14-SEP-89 |
| P416589 | PZ60892428 | MAGNESIUM | 3360 | UG/G | | 1110 | | 14-SEP-89 |
| P416589 | PZ60893135 | MAGNESIUM | 2380 | UG/G | | 1130 | | 14-SEP-89 |
| P416589 | PZ60892831 | MAGNESIUM | 2050 | UG/G | | 1090 | | 14-SEP-89 |
| P416589 | PZ60890003 | MANGANESE | 354 | UG/G | | 3.8 | | 13-SEP-89 |
| P416589 | PZ60890307D | MANGANESE | 255 | UG/G | | 3.3 | | 13-SEP-89 |
| P416589 | PZ60890307 | MANGANESE | 350 | UG/G | | 3.1 | | 13-SEP-89 |
| P416589 | PZ60892024 | MANGANESE | 146 | UG/G | | 2.8 | | 14-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416589 | PZ60892428 | MANGANESE | 254 | UG/G | | 3 3 | | 14-SEP-89 |
| P416589 | PZ60893135 | MANGANESE | 425 | UG/G | | 3.4 | | 14-SEP-89 |
| P416589 | PZ60892831 | MANGANESE | 169 | UG/G | | 3.3 | | 14-SEP-89 |
| P416589 | PZ60891620 | MANGANESE | 295 | UG/G | | 3 3 | | 14-SEP-89 |
| P416589 | PZ60890003 | MERCURY | 0 20 | UG/G | | 0.20 | | 13-SEP-89 |
| P416589 | PZ60890307 | MERCURY | 0.20 | UG/G | | 0 20 | | 13-SEP-89 |
| P416589 | PZ60890307D | MERCURY | 0.20 | UG/G | | 0.20 | | 13-SEP-89 |
| P416589 | PZ60890003 | NICKEL | 20 3 | UG/G | | 10.1 | | 13-SEP-89 |
| P416589 | PZ60890307D | NICKEL | 16.6 | UG/G | | 8.9 | | 13-SEP-89 |
| P416589 | PZ60890307 | NICKEL | 19.6 | UG/G | | 8.3 | | 13-SEP-89 |
| P416589 | PZ60891620 | NICKEL | 15.7 | UG/G | | 8.9 | | 14-SEP-89 |
| P416589 | PZ60892024 | NICKEL | 10.8 | UG/G | | 7.5 | | 14-SEP-89 |
| P416589 | PZ60892428 | NICKEL | 15.0 | UG/G | | 8.9 | | 14-SEP-89 |
| P416589 | PZ60893135 | NICKEL | 17.2 | UG/G | | 9.0 | | 14-SEP-89 |
| P416589 | PZ60892831 | NICKEL | 9.5 | UG/G | | 8 7 | | 14-SEP-89 |
| P416589 | PZ60891216 | PLUTONIUM-239 | 0.015 | PCI/G | | 0 | | 14-SEP-89 |
| P416589 | PZ60892428 | PLUTONIUM-239 | 0.015 | PCI/G | | 0 | | 14-SEP-89 |
| P416589 | PZ60891620 | PLUTONIUM-239 | 0.106 | PCI/G | | 0. | | 14-SEP-89 |
| P416589 | PZ60890003 | POTASSIUM | 6840 | UG/G | | 1260 | | 13-SEP-89 |
| P416589 | PZ60892024 | POTASSIUM | 1260 | UG/G | | 939 | | 14-SEP-89 |
| P416589 | PZ60892428 | POTASSIUM | 1800 | UG/G | | 1110 | | 14-SEP-89 |
| P416589 | PZ60890003 | TIN | 35.7 | UG/G | | 25.2 | | 13-SEP-89 |
| P416589 | PZ60891216 | URANIUM-233,-234 | 0.74 | PCI/G | | 0 | | 14-SEP-89 |
| P416589 | PZ60892831 | URANIUM-233,-234 | 0 56 | PCI/G | | 0. | | 14-SEP-89 |
| P416589 | PZ60892428 | URANIUM-233,-234 | 1.05 | PCI/G | | 0 | | 14-SEP-89 |
| P416589 | PZ60892024 | URANIUM-233,-234 | 0.87 | PCI/G | | 0 | | 14-SEP-89 |
| P416589 | PZ60891620 | URANIUM-233,-234 | 0 46 | PCI/G | | 0 | | 14-SEP-89 |
| P416589 | PZ60893135 | URANIUM-233,-234 | 0 93 | PCI/G | | 0 | | 14-SEP-89 |
| P416589 | PZ60890003 | VANADIUM | 71.3 | UG/G | | 12.6 | | 13-SEP-89 |
| P416589 | PZ60890307 | VANADIUM | 30.6 | UG/G | | 10.4 | | 13-SEP-89 |
| P416589 | PZ60890307D | VANADIUM | 24.0 | UG/G | | 11.1 | | 13-SEP-89 |
| P416589 | PZ60891620 | VANADIUM | 42.7 | UG/G | | 11.1 | | 14-SEP-89 |
| P416589 | PZ60892024 | VANADIUM | 26.5 | UG/G | | 9.4 | | 14-SEP-89 |
| P416589 | PZ60892428 | VANADIUM | 28.1 | UG/G | | 11 1 | | 14-SEP-89 |
| P416589 | PZ60893135 | VANADIUM | 20 1 | UG/G | | 11.3 | | 14-SEP-89 |
| P416589 | PZ60892831 | VANADIUM | 20.6 | UG/G | | 10.9 | | 14-SEP-89 |
| P416589 | PZ60890003 | ZINC | 62.6 | UG/G | | 5 0 | | 13-SEP-89 |
| P416589 | PZ60890307 | ZINC | 10 5 | UG/G | | 4.2 | | 13-SEP-89 |
| P416589 | PZ60890307D | ZINC | 8.5 | UG/G | | 4.4 | | 13-SEP-89 |
| P416589 | PZ60892024 | ZINC | 27.9 | UG/G | | 3.8 | | 14-SEP-89 |
| P416589 | PZ60893135 | ZINC | 62.7 | UG/G | | 4.5 | | 14-SEP-89 |
| P416589 | PZ60892831 | ZINC | 27.2 | UG/G | | 4.3 | | 14-SEP-89 |
| P416589 | PZ60892428 | ZINC | 37.4 | UG/G | | 4.4 | | 14-SEP-89 |
| P416589 | PZ60891620 | ZINC | 13.9 | UG/G | | 4.4 | | 14-SEP-89 |
| P416789 | PZ62890003 | ALUMINUM | 4630 | UG/G | | 42 1 | | 15-SEP-89 |
| P416789 | PZ62890306 | ALUMINUM | 46600 | UG/G | | 470 | | 15-SEP-89 |
| P416789 | PZ62890610 | ALUMINUM | 10600 | UG/G | | 40.3 | | 15-SEP-89 |
| P416789 | PZ62891012D | ALUMINUM | 9630 | UG/G | | 42.1 | | 15-SEP-89 |
| P416789 | PZ62891720 | ALUMINUM | 17100 | UG/G | | 46 9 | | 18-SEP-89 |
| P416789 | PZ62892226 | ALUMINUM | 8830 | UG/G | | 44 2 | | 18-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416789 | PZ62892022 | ALUMINUM | 18000 | UG/G | | 46 4 | | 18-SEP-89 |
| P416789 | PZ62892630 | ALUMINUM | 7550 | UG/G | | 36 3 | | 18-SEP-89 |
| P416789 | PZ62891217 | AMERICIUM-241 | .201 | PCI/G | | .035 | | 18-SEP-89 |
| P416789 | PZ62892022 | AMERICIUM-241 | .035 | PCI/G | | 0 | | 18-SEP-89 |
| P416789 | PZ62892226 | AMERICIUM-241 | .046 | PCI/G | | .025 | | 18-SEP-89 |
| P416789 | PZ62891720 | AMERICIUM-241 | .025 | PCI/G | | .029 | | 18-SEP-89 |
| P416789 | PZ62890306 | ANTIMONY | 22 9 | UG/G | | 14.1 | | 15-SEP-89 |
| P416789 | PZ62891720 | ANTIMONY | 14.6 | UG/G | | 14.1 | | 18-SEP-89 |
| P416789 | PZ62890003 | ARSENIC | 2.7 | UG/G | | 1.9 | | 15-SEP-89 |
| P416789 | PZ62890610 | ARSENIC | 2.5 | UG/G | | 1.8 | | 15-SEP-89 |
| P416789 | PZ62890306 | ARSENIC | 13.8 | UG/G | | 2.1 | | 15-SEP-89 |
| P416789 | PZ62891012D | ARSENIC | 4.3 | UG/G | | 1.9 | | 15-SEP-89 |
| P416789 | PZ62891720 | ARSENIC | 4.8 | UG/G | | 1.7 | | 18-SEP-89 |
| P416789 | PZ62892022 | ARSENIC | 4 7 | UG/G | | 2.3 | | 18-SEP-89 |
| P416789 | PZ62892226 | ARSENIC | 3.3 | UG/G | | 2.0 | | 18-SEP-89 |
| P416789 | PZ62891012D | BARIUM | 74.5 | UG/G | | 42 1 | | 15-SEP-89 |
| P416789 | PZ62890003 | BARIUM | 45.5 | UG/G | | 42.1 | | 15-SEP-89 |
| P416789 | PZ62890306 | BARIUM | 121 | UG/G | | 47.0 | | 15-SEP-89 |
| P416789 | PZ62890610 | BARIUM | 43.3 | UG/G | | 40 3 | | 15-SEP-89 |
| P416789 | PZ62892630 | BARIUM | 51.3 | UG/G | | 36 3 | | 18-SEP-89 |
| P416789 | PZ62891720 | BARIUM | 102 | UG/G | | 46.9 | | 18-SEP-89 |
| P416789 | PZ62892022 | BARIUM | 89.9 | UG/G | | 46.4 | | 18-SEP-89 |
| P416789 | PZ62890306 | BERYLLIUM | 2 7 | UG/G | | 1.2 | | 15-SEP-89 |
| P416789 | PZ62890003 | CALCIUM | 1190 | UG/G | | 1050 | | 15-SEP-89 |
| P416789 | PZ62890306 | CALCIUM | 4060 | UG/G | | 1170 | | 15-SEP-89 |
| P416789 | PZ62890610 | CALCIUM | 24400 | UG/G | | 1010 | | 15-SEP-89 |
| P416789 | PZ62891012D | CALCIUM | 3450 | UG/G | | 1050 | | 15-SEP-89 |
| P416789 | PZ62891720 | CALCIUM | 5130 | UG/G | | 1170 | | 18-SEP-89 |
| P416789 | PZ62892022 | CALCIUM | 3950 | UG/G | | 1160 | | 18-SEP-89 |
| P416789 | PZ62892226 | CALCIUM | 2530 | UG/G | | 1100 | | 18-SEP-89 |
| P416789 | PZ62892630 | CALCIUM | 3970 | UG/G | | 908 | | 18-SEP-89 |
| P416789 | PZ62890003 | CHROMIUM | 8.4 | UG/G | | 2.1 | | 15-SEP-89 |
| P416789 | PZ62890306 | CHROMIUM | 33.2 | UG/G | | 2.3 | | 15-SEP-89 |
| P416789 | PZ62890610 | CHROMIUM | 17.8 | UG/G | | 2.0 | | 15-SEP-89 |
| P416789 | PZ62891012D | CHROMIUM | 10.6 | UG/G | | 2.1 | | 15-SEP-89 |
| P416789 | PZ62891720 | CHROMIUM | 18.9 | UG/G | | 2.3 | | 18-SEP-89 |
| P416789 | PZ62892022 | CHROMIUM | 17.9 | UG/G | | 2.3 | | 18-SEP-89 |
| P416789 | PZ62892226 | CHROMIUM | 10.7 | UG/G | | 2.2 | | 18-SEP-89 |
| P416789 | PZ62892630 | CHROMIUM | 6.7 | UG/G | | 1.8 | | 18-SEP-89 |
| P416789 | PZ62890003 | COPPER | 8.9 | UG/G | | 5.3 | | 15-SEP-89 |
| P416789 | PZ62890306 | COPPER | 11.5 | UG/G | | 5.9 | | 15-SEP-89 |
| P416789 | PZ62890610 | COPPER | 5.2 | UG/G | | 5.0 | | 15-SEP-89 |
| P416789 | PZ62891012D | COPPER | 6.0 | UG/G | | 5.3 | | 15-SEP-89 |
| P416789 | PZ62891720 | COPPER | 15.7 | UG/G | | 5.9 | | 18-SEP-89 |
| P416789 | PZ62892022 | COPPER | 15.7 | UG/G | | 5.8 | | 18-SEP-89 |
| P416789 | PZ62892226 | COPPER | 10.7 | UG/G | | 5 5 | | 18-SEP-89 |
| P416789 | PZ62892630 | COPPER | 8.5 | UG/G | | 4.5 | | 18-SEP-89 |
| P416789 | PZ62890003 | IRON | 7140 | UG/G | | 21.0 | | 15-SEP-89 |
| P416789 | PZ62890306 | IRON | 27400 | UG/G | | 23 5 | | 15-SEP-89 |
| P416789 | PZ62891012D | IRON | 13200 | UG/G | | 21.1 | | 15-SEP-89 |
| P416789 | PZ62890610 | IRON | 9700 | UG/G | | 20.2 | | 15-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416789 | PZ62891720 | IRON | 20000 | UG/G | | 23.4 | | 18-SEP-89 |
| P416789 | PZ62892630 | IRON | 5340 | UG/G | | 18.2 | | 18-SEP-89 |
| P416789 | PZ62892226 | IRON | 13200 | UG/G | | 22 1 | | 18-SEP-89 |
| P416789 | PZ62892022 | IRON | 18700 | UG/G | | 23.2 | | 18-SEP-89 |
| P416789 | PZ62890003 | LEAD | 37.6 | UG/G | | 9.7 | | 15-SEP-89 |
| P416789 | PZ62890610 | LEAD | 4.4 | UG/G | | 0.91 | | 15-SEP-89 |
| P416789 | PZ62891012D | LEAD | 5.8 | UG/G | | 0.97 | | 15-SEP-89 |
| P416789 | PZ62890306 | LEAD | 24.9 | UG/G | | 5.2 | | 15-SEP-89 |
| P416789 | PZ62891720 | LEAD | 9.3 | UG/G | | 2 6 | | 18-SEP-89 |
| P416789 | PZ62892022 | LEAD | 8.8 | UG/G | | 2.3 | | 18-SEP-89 |
| P416789 | PZ62892226 | LEAD | 4.3 | UG/G | | 1.0 | | 18-SEP-89 |
| P416789 | PZ62892630 | LEAD | 13.9 | UG/G | | 3.6 | | 18-SEP-89 |
| P416789 | PZ62890306 | MAGNESIUM | 2800 | UG/G | | 1170 | | 15-SEP-89 |
| P416789 | PZ62890610 | MAGNESIUM | 1640 | UG/G | | 1010 | | 15-SEP-89 |
| P416789 | PZ62891012D | MAGNESIUM | 1840 | UG/G | | 1050 | | 15-SEP-89 |
| P416789 | PZ62891720 | MAGNESIUM | 4740 | UG/G | | 1170 | | 18-SEP-89 |
| P416789 | PZ62892022 | MAGNESIUM | 4430 | UG/G | | 1160 | | 18-SEP-89 |
| P416789 | PZ62892630 | MAGNESIUM | 1260 | UG/G | | 908 | | 18-SEP-89 |
| P416789 | PZ62892226 | MAGNESIUM | 1710 | UG/G | | 1100 | | 18-SEP-89 |
| P416789 | PZ62890003 | MANGANESE | 116 | UG/G | | 3.2 | | 15-SEP-89 |
| P416789 | PZ62890306 | MANGANESE | 56 9 | UG/G | | 3 5 | | 15-SEP-89 |
| P416789 | PZ62891012D | MANGANESE | 302 | UG/G | | 3.2 | | 15-SEP-89 |
| P416789 | PZ62890610 | MANGANESE | 107 | UG/G | | 3.0 | | 15-SEP-89 |
| P416789 | PZ62891720 | MANGANESE | 188 | UG/G | | 3.5 | | 18-SEP-89 |
| P416789 | PZ62892630 | MANGANESE | 37.2 | UG/G | | 2.7 | | 18-SEP-89 |
| P416789 | PZ62892226 | MANGANESE | 91.4 | UG/G | | 3.3 | | 18-SEP-89 |
| P416789 | PZ62892022 | MANGANESE | 147 | UG/G | | 3.5 | | 18-SEP-89 |
| P416789 | PZ62890306 | MERCURY | 0.31 | UG/G | | 0.12 | | 15-SEP-89 |
| P416789 | PZ62891012D | MERCURY | 0.13 | UG/G | | 0.11 | | 15-SEP-89 |
| P416789 | PZ62892630 | MERCURY | 0.28 | UG/G | | 0.12 | | 18-SEP-89 |
| P416789 | PZ62890306 | MOLYBDENUM | 27.4 | UG/G | | 23.5 | | 15-SEP-89 |
| P416789 | PZ62891012D | NICKEL | 11.0 | UG/G | | 8 4 | | 15-SEP-89 |
| P416789 | PZ62890306 | NICKEL | 34.6 | UG/G | | 9.4 | | 15-SEP-89 |
| P416789 | PZ62890610 | NICKEL | 11.4 | UG/G | | 8 1 | | 15-SEP-89 |
| P416789 | PZ62891720 | NICKEL | 16.2 | UG/G | | 9.4 | | 18-SEP-89 |
| P416789 | PZ62892022 | NICKEL | 16.1 | UG/G | | 9.3 | | 18-SEP-89 |
| P416789 | PZ62892022 | PLUTONIUM-239 | .084 | PCI/G | | 0 | | 18-SEP-89 |
| P416789 | PZ62890306 | POTASSIUM | 1980 | UG/G | | 1170 | | 15-SEP-89 |
| P416789 | PZ62891720 | POTASSIUM | 3530 | UG/G | | 1170 | | 18-SEP-89 |
| P416789 | PZ62892226 | POTASSIUM | 1140 | UG/G | | 1100 | | 18-SEP-89 |
| P416789 | PZ62892022 | POTASSIUM | 3280 | UG/G | | 1160 | | 18-SEP-89 |
| P416789 | PZ62890306 | TIN | 27.8 | UG/G | | 23.5 | | 15-SEP-89 |
| P416789 | PZ62891217 | URANIUM-233,-234 | .97 | PCI/G | | .07 | | 18-SEP-89 |
| P416789 | PZ62892630 | URANIUM-233,-234 | .68 | PCI/G | | .08 | | 18-SEP-89 |
| P416789 | PZ62892226 | URANIUM-233,-234 | 1.15 | PCI/G | | 0 | | 18-SEP-89 |
| P416789 | PZ62892022 | URANIUM-233,-234 | 1.41 | PCI/G | | 0 | | 18-SEP-89 |
| P416789 | PZ62891720 | URANIUM-233,-234 | .91 | PCI/G | | .07 | | 18-SEP-89 |
| P416789 | PZ62890003 | VANADIUM | 20.8 | UG/G | | 10.5 | | 15-SEP-89 |
| P416789 | PZ62891012D | VANADIUM | 32.0 | UG/G | | 10 5 | | 15-SEP-89 |
| P416789 | PZ62890610 | VANADIUM | 24.2 | UG/G | | 10.1 | | 15-SEP-89 |
| P416789 | PZ62890306 | VANADIUM | 81.4 | UG/G | | 11.7 | | 15-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416789 | PZ62891720 | VANADIUM | 42.3 | UG/G | | 11.7 | | 18-SEP-89 |
| P416789 | PZ62892022 | VANADIUM | 44.0 | UG/G | | 11.6 | | 18-SEP-89 |
| P416789 | PZ62892630 | VANADIUM | 13.2 | UG/G | | 9.1 | | 18-SEP-89 |
| P416789 | PZ62892226 | VANADIUM | 33.2 | UG/G | | 11.0 | | 18-SEP-89 |
| P416789 | PZ62890003 | ZINC | 96 1 | UG/G | | 4.2 | | 15-SEP-89 |
| P416789 | PZ62891012D | ZINC | 50.8 | UG/G | | 4.2 | | 15-SEP-89 |
| P416789 | PZ62890610 | ZINC | 15.2 | UG/G | | 4.0 | | 15-SEP-89 |
| P416789 | PZ62890306 | ZINC | 77.0 | UG/G | | 4.7 | | 15-SEP-89 |
| P416789 | PZ62891720 | ZINC | 103 | UG/G | | 4.7 | | 18-SEP-89 |
| P416789 | PZ62892630 | ZINC | 46.6 | UG/G | | 3.6 | | 18-SEP-89 |
| P416789 | PZ62892226 | ZINC | 37 7 | UG/G | | 4 4 | | 18-SEP-89 |
| P416789 | PZ62892022 | ZINC | 70.7 | UG/G | | 4.6 | | 18-SEP-89 |
| P416789 | PZ62891012D | pH | 9.0 | PHUNIT | | | | 15-SEP-89 |
| P416789 | PZ62891012 | pH | 8 7 | PHUNIT | | | | 15-SEP-89 |
| P416789 | PZ62890610 | pH | 8.8 | PHUNIT | | | | 15-SEP-89 |
| P416789 | PZ62891217 | pH | 8 6 | PHUNIT | | | | 18-SEP-89 |
| P416889 | PZ63890002 | ALUMINUM | 8460 | UG/G | | 40.5 | | 19-SEP-89 |
| P416889 | PZ63890305 | ALUMINUM | 12000 | UG/G | | 46.0 | | 19-SEP-89 |
| P416889 | PZ63891520 | ALUMINUM | 12100 | UG/G | | 38.0 | | 19-SEP-89 |
| P416889 | PZ63892023 | ALUMINUM | 10300 | UG/G | | 38 5 | | 19-SEP-89 |
| P416889 | PZ63892023D | ALUMINUM | 11500 | UG/G | | 40.7 | | 19-SEP-89 |
| P416889 | PZ63890507 | ALUMINUM | 9040 | UG/G | | 35 3 | | 19-SEP-89 |
| P416889 | PZ63891315 | ALUMINUM | 16400 | UG/G | | 37.6 | | 19-SEP-89 |
| P416889 | PZ63890709 | ALUMINUM | 9390 | UG/G | | 41 0 | | 19-SEP-89 |
| P416889 | PZ63890912 | ALUMINUM | 9460 | UG/G | | 37.5 | | 19-SEP-89 |
| P416889 | PZ63891315 | ANTIMONY | 13.0 | UG/G | | 11.3 | | 19-SEP-89 |
| P416889 | PZ63890912 | ANTIMONY | 12.3 | UG/G | | 11.3 | | 19-SEP-89 |
| P416889 | PZ63891520 | ANTIMONY | 14.2 | UG/G | | 11.4 | | 19-SEP-89 |
| P416889 | PZ63892023 | ANTIMONY | 19.6 | UG/G | | 11.5 | | 19-SEP-89 |
| P416889 | PZ63892023D | ANTIMONY | 18.0 | UG/G | | 12.2 | | 19-SEP-89 |
| P416889 | PZ63890002 | ARSENIC | 2.6 | UG/G | | 1.8 | | 19-SEP-89 |
| P416889 | PZ63890305 | ARSENIC | 4.4 | UG/G | | 2.3 | | 19-SEP-89 |
| P416889 | PZ63891520 | ARSENIC | 5.7 | UG/G | | 1.9 | | 19-SEP-89 |
| P416889 | PZ63892023 | ARSENIC | 3 2 | UG/G | | 2.1 | | 19-SEP-89 |
| P416889 | PZ63892023D | ARSENIC | 2.6 | UG/G | | 1.8 | | 19-SEP-89 |
| P416889 | PZ63891315 | ARSENIC | 4.5 | UG/G | | 1 7 | | 19-SEP-89 |
| P416889 | PZ63890912 | ARSENIC | 5.4 | UG/G | | 2.0 | | 19-SEP-89 |
| P416889 | PZ63890709 | ARSENIC | 8.0 | UG/G | | 2.1 | | 19-SEP-89 |
| P416889 | PZ63890507 | BARIUM | 49.4 | UG/G | | 35 3 | | 19-SEP-89 |
| P416889 | PZ63890912 | BARIUM | 56.2 | UG/G | | 37.5 | | 19-SEP-89 |
| P416889 | PZ63891315 | BARIUM | 110 | UG/G | | 37.6 | | 19-SEP-89 |
| P416889 | PZ63890709 | BARIUM | 95.3 | UG/G | | 41 0 | | 19-SEP-89 |
| P416889 | PZ63891520 | BARIUM | 89.7 | UG/G | | 38.0 | | 19-SEP-89 |
| P416889 | PZ63892023 | BARIUM | 164 | UG/G | | 38.5 | | 19-SEP-89 |
| P416889 | PZ63892023D | BARIUM | 174 | UG/G | | 40.7 | | 19-SEP-89 |
| P416889 | PZ63890002 | BARIUM | 71.2 | UG/G | | 40.5 | | 19-SEP-89 |
| P416889 | PZ63890305 | BARIUM | 62.6 | UG/G | | 46.0 | | 19-SEP-89 |
| P416889 | PZ63892023D | BERYLLIUM | 1.2 | UG/G | | 1.0 | | 19-SEP-89 |
| P416889 | PZ63892023 | BERYLLIUM | 1.2 | UG/G | | 0.96 | | 19-SEP-89 |
| P416889 | PZ63891315 | BERYLLIUM | 1 1 | UG/G | | 0 94 | | 19-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416889 | PZ63890912 | BERYLLIUM | 0.98 | UG/G | | 0.94 | | 19-SEP-89 |
| P416889 | PZ63890002 | CALCIUM | 1480 | UG/G | | 1010 | | 19-SEP-89 |
| P416889 | PZ63890305 | CALCIUM | 31100 | UG/G | | 1150 | | 19-SEP-89 |
| P416889 | PZ63891520 | CALCIUM | 2490 | UG/G | | 949 | | 19-SEP-89 |
| P416889 | PZ63892023D | CALCIUM | 5390 | UG/G | | 1020 | | 19-SEP-89 |
| P416889 | PZ63892023 | CALCIUM | 5440 | UG/G | | 962 | | 19-SEP-89 |
| P416889 | PZ63890507 | CALCIUM | 5960 | UG/G | | 882 | | 19-SEP-89 |
| P416889 | PZ63890709 | CALCIUM | 2820 | UG/G | | 1020 | | 19-SEP-89 |
| P416889 | PZ63891315 | CALCIUM | 4040 | UG/G | | 940 | | 19-SEP-89 |
| P416889 | PZ63890912 | CALCIUM | 2890 | UG/G | | 938 | | 19-SEP-89 |
| P416889 | PZ63890002 | CHROMIUM | 8.7 | UG/G | | 2.0 | | 19-SEP-89 |
| P416889 | PZ63890305 | CHROMIUM | 11.2 | UG/G | | 2.3 | | 19-SEP-89 |
| P416889 | PZ63892023 | CHROMIUM | 11.0 | UG/G | | 1.9 | | 19-SEP-89 |
| P416889 | PZ63892023D | CHROMIUM | 12.1 | UG/G | | 2.0 | | 19-SEP-89 |
| P416889 | PZ63890507 | CHROMIUM | 7 8 | UG/G | | 1 8 | | 19-SEP-89 |
| P416889 | PZ63891315 | CHROMIUM | 22.6 | UG/G | | 1.9 | | 19-SEP-89 |
| P416889 | PZ63890912 | CHROMIUM | 12 4 | UG/G | | 1.9 | | 19-SEP-89 |
| P416889 | PZ63891520 | CHROMIUM | 17.2 | UG/G | | 1.9 | | 19-SEP-89 |
| P416889 | PZ63890709 | CHROMIUM | 10 3 | UG/G | | 2.0 | | 19-SEP-89 |
| P416889 | PZ63891315 | COBALT | 10.4 | UG/G | | 9.4 | | 19-SEP-89 |
| P416889 | PZ63890709 | COBALT | 20 2 | UG/G | | 10 2 | | 19-SEP-89 |
| P416889 | PZ63890002 | COBALT | 17.6 | UG/G | | 10.1 | | 19-SEP-89 |
| P416889 | PZ63890002 | COPPER | 7.4 | UG/G | | 5.1 | | 19-SEP-89 |
| P416889 | PZ63892023 | COPPER | 18 8 | UG/G | | 4.8 | | 19-SEP-89 |
| P416889 | PZ63892023D | COPPER | 18 4 | UG/G | | 5.1 | | 19-SEP-89 |
| P416889 | PZ63890709 | COPPER | 11.0 | UG/G | | 5.1 | | 19-SEP-89 |
| P416889 | PZ63890912 | COPPER | 14.0 | UG/G | | 4 7 | | 19-SEP-89 |
| P416889 | PZ63891520 | COPPER | 15.9 | UG/G | | 4.7 | | 19-SEP-89 |
| P416889 | PZ63891315 | COPPER | 17.2 | UG/G | | 4.7 | | 19-SEP-89 |
| P416889 | PZ63890709 | IRON | 12400 | UG/G | | 20.5 | | 19-SEP-89 |
| P416889 | PZ63892023 | IRON | 20800 | UG/G | | 19.2 | | 19-SEP-89 |
| P416889 | PZ63890912 | IRON | 17500 | UG/G | | 18.8 | | 19-SEP-89 |
| P416889 | PZ63891520 | IRON | 18000 | UG/G | | 19.0 | | 19-SEP-89 |
| P416889 | PZ63891315 | IRON | 19400 | UG/G | | 18.8 | | 19-SEP-89 |
| P416889 | PZ63892023D | IRON | 20100 | UG/G | | 20.4 | | 19-SEP-89 |
| P416889 | PZ63890002 | IRON | 9810 | UG/G | | 20.3 | | 19-SEP-89 |
| P416889 | PZ63890507 | IRON | 6500 | UG/G | | 17.6 | | 19-SEP-89 |
| P416889 | PZ63890305 | IRON | 11700 | UG/G | | 23.0 | | 19-SEP-89 |
| P416889 | PZ63890002 | LEAD | 63.3 | UG/G | | 23.0 | | 19-SEP-89 |
| P416889 | PZ63890305 | LEAD | 7.9 | UG/G | | 2.3 | | 19-SEP-89 |
| P416889 | PZ63890507 | LEAD | 4 1 | UG/G | | 1.1 | | 19-SEP-89 |
| P416889 | PZ63892023D | LEAD | 15.4 | UG/G | | 3.5 | | 19-SEP-89 |
| P416889 | PZ63890709 | LEAD | 11.8 | UG/G | | 2.1 | | 19-SEP-89 |
| P416889 | PZ63890912 | LEAD | 4.1 | UG/G | | 0.99 | | 19-SEP-89 |
| P416889 | PZ63891520 | LEAD | 7.6 | UG/G | | 1.9 | | 19-SEP-89 |
| P416889 | PZ63892023 | LEAD | 18.9 | UG/G | | 3.2 | | 19-SEP-89 |
| P416889 | PZ63891315 | LEAD | 17.4 | UG/G | | 4.3 | | 19-SEP-89 |
| P416889 | PZ63890305 | MAGNESIUM | 2720 | UG/G | | 1150 | | 19-SEP-89 |
| P416889 | PZ63890507 | MAGNESIUM | 2150 | UG/G | | 882 | | 19-SEP-89 |
| P416889 | PZ63892023D | MAGNESIUM | 2250 | UG/G | | 1020 | | 19-SEP-89 |
| P416889 | PZ63890709 | MAGNESIUM | 1980 | UG/G | | 1020 | | 19-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416889 | PZ63890912 | MAGNESIUM | 2180 | UG/G | | 938 | | 19-SEP-89 |
| P416889 | PZ63891315 | MAGNESIUM | 3610 | UG/G | | 940 | | 19-SEP-89 |
| P416889 | PZ63892023 | MAGNESIUM | 2180 | UG/G | | 962 | | 19-SEP-89 |
| P416889 | PZ63891520 | MAGNESIUM | 2630 | UG/G | | 949 | | 19-SEP-89 |
| P416889 | PZ63890709 | MANGANESE | 418 | UG/G | | 3.1 | | 19-SEP-89 |
| P416889 | PZ63892023D | MANGANESE | 419 | UG/G | | 3 1 | | 19-SEP-89 |
| P416889 | PZ63892023 | MANGANESE | 371 | UG/G | | 2.9 | | 19-SEP-89 |
| P416889 | PZ63890912 | MANGANESE | 327 | UG/G | | 2.8 | | 19-SEP-89 |
| P416889 | PZ63891520 | MANGANESE | 196 | UG/G | | 2.8 | | 19-SEP-89 |
| P416889 | PZ63891315 | MANGANESE | 481 | UG/G | | 2.8 | | 19-SEP-89 |
| P416889 | PZ63890002 | MANGANESE | 751 | UG/G | | 3.0 | | 19-SEP-89 |
| P416889 | PZ63890507 | MANGANESE | 70.5 | UG/G | | 2.6 | | 19-SEP-89 |
| P416889 | PZ63890305 | MANGANESE | 214 | UG/G | | 3 4 | | 19-SEP-89 |
| P416889 | PZ63890002 | NICKEL | 14 5 | UG/G | | 8 1 | | 19-SEP-89 |
| P416889 | PZ63890709 | NICKEL | 11.7 | UG/G | | 8.2 | | 19-SEP-89 |
| P416889 | PZ63890305 | NICKEL | 12.5 | UG/G | | 9.2 | | 19-SEP-89 |
| P416889 | PZ63890912 | NICKEL | 10.5 | UG/G | | 7.5 | | 19-SEP-89 |
| P416889 | PZ63891315 | NICKEL | 20 5 | UG/G | | 7.5 | | 19-SEP-89 |
| P416889 | PZ63892023 | NICKEL | 13 2 | UG/G | | 7.7 | | 19-SEP-89 |
| P416889 | PZ63892023D | NICKEL | 12.3 | UG/G | | 8 1 | | 19-SEP-89 |
| P416889 | PZ63891520 | NICKEL | 16.0 | UG/G | | 7.6 | | 19-SEP-89 |
| P416889 | PZ63890002 | PLUTONIUM-239 | 0.137 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63890912 | PLUTONIUM-239 | 0.053 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63892023D | PLUTONIUM-239 | 0 018 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63891315 | PLUTONIUM-239 | 0.023 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63892023D | POTASSIUM | 1080 | UG/G | | 1020 | | 19-SEP-89 |
| P416889 | PZ63891315 | POTASSIUM | 1410 | UG/G | | 940 | | 19-SEP-89 |
| P416889 | PZ63892023 | POTASSIUM | 1020 | UG/G | | 962 | | 19-SEP-89 |
| P416889 | PZ63891520 | POTASSIUM | 1210 | UG/G | | 949 | | 19-SEP-89 |
| P416889 | PZ63892023 | STRONTIUM-90 | 1.33 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63890002 | STRONTIUM-90 | 1.18 | PCI/G | | 0. | | 19-SEP-89 |
| P416889 | PZ63892023 | TRITIUM | 380 | PCI/L | | 48 | | 19-SEP-89 |
| P416889 | PZ63890912 | URANIUM-233,-234 | 0.74 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63891315 | URANIUM-233,-234 | 1.08 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63892023D | URANIUM-233,-234 | 1.46 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63892023 | URANIUM-233,-234 | 1.13 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63891520 | URANIUM-233,-234 | 0.70 | PCI/G | | 0. | | 19-SEP-89 |
| P416889 | PZ63890002 | URANIUM-233,-234 | 0.95 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63890305 | URANIUM-233,-234 | 0.62 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63890507 | URANIUM-233,-234 | 0.44 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63890709 | URANIUM-233,-234 | 0.61 | PCI/G | | 0 | | 19-SEP-89 |
| P416889 | PZ63890002 | VANADIUM | 30.1 | UG/G | | 10 1 | | 19-SEP-89 |
| P416889 | PZ63890305 | VANADIUM | 29.8 | UG/G | | 11.5 | | 19-SEP-89 |
| P416889 | PZ63890709 | VANADIUM | 35.4 | UG/G | | 10.2 | | 19-SEP-89 |
| P416889 | PZ63890507 | VANADIUM | 11.9 | UG/G | | 8.8 | | 19-SEP-89 |
| P416889 | PZ63890912 | VANADIUM | 44 4 | UG/G | | 9.4 | | 19-SEP-89 |
| P416889 | PZ63892023D | VANADIUM | 42.2 | UG/G | | 10.2 | | 19-SEP-89 |
| P416889 | PZ63891315 | VANADIUM | 46.6 | UG/G | | 9.4 | | 19-SEP-89 |
| P416889 | PZ63892023 | VANADIUM | 38.4 | UG/G | | 9 6 | | 19-SEP-89 |
| P416889 | PZ63891520 | VANADIUM | 40.0 | UG/G | | 9.5 | | 19-SEP-89 |
| P416889 | PZ63890912 | ZINC | 32.6 | UG/G | | 3.8 | | 19-SEP-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P416889 | PZ63891315 | ZINC | 71.9 | UG/G | | 3.8 | | 19-SEP-89 |
| P416889 | PZ63892023 | ZINC | 87.3 | UG/G | | 3 8 | | 19-SEP-89 |
| P416889 | PZ63892023D | ZINC | 134 | UG/G | | 4 1 | | 19-SEP-89 |
| P416889 | PZ63891520 | ZINC | 48.5 | UG/G | | 3.8 | | 19-SEP-89 |
| P416889 | PZ63890002 | ZINC | 37.7 | UG/G | | 4.1 | | 19-SEP-89 |
| P416889 | PZ63890709 | ZINC | 43.8 | UG/G | | 4.1 | | 19-SEP-89 |
| P416889 | PZ63890507 | ZINC | 47.9 | UG/G | | 3.5 | | 19-SEP-89 |
| P416889 | PZ63890305 | ZINC | 18.3 | UG/G | | 4.6 | | 19-SEP-89 |
| P418289 | P4182890306 | ALUMINUM | 9520 | UG/G | | 34.3 | | 07-NOV-89 |
| P418289 | P4182890610 | ALUMINUM | 6000 | UG/G | | 40.7 | | 07-NOV-89 |
| P418289 | P4182891014 | ALUMINUM | 6210 | UG/G | | 37.8 | | 07-NOV-89 |
| P418289 | P4182891416 | ALUMINUM | 6860 | UG/G | | 32.7 | | 07-NOV-89 |
| P418289 | P4182891619 | ALUMINUM | 7060 | UG/G | | 32 0 | | 07-NOV-89 |
| P418289 | P4182892326 | ALUMINUM | 3760 | UG/G | | 47.2 | | 07-NOV-89 |
| P418289 | P4182891923 | ALUMINUM | 7630 | UG/G | | 38 5 | | 07-NOV-89 |
| P418289 | P4182890610 | ARSENIC | 1.7 | UG/G | | 1.5 | | 07-NOV-89 |
| P418289 | P4182891923 | ARSENIC | 2.5 | UG/G | | 1.7 | | 07-NOV-89 |
| P418289 | P4182891014 | BARIUM | 51.0 | UG/G | | 37.8 | | 07-NOV-89 |
| P418289 | P4182891923 | BARIUM | 52.8 | UG/G | | 38.5 | | 07-NOV-89 |
| P418289 | P4182891619 | BARIUM | 60.6 | UG/G | | 32 0 | | 07-NOV-89 |
| P418289 | P4182891416 | BARIUM | 57.9 | UG/G | | 32.7 | | 07-NOV-89 |
| P418289 | P4182892326 | BARIUM | 78.1 | UG/G | | 47 2 | | 07-NOV-89 |
| P418289 | P4182890306 | BARIUM | 43 1 | UG/G | | 34.3 | | 07-NOV-89 |
| P418289 | P4182890610 | BARIUM | 51.8 | UG/G | | 40 7 | | 07-NOV-89 |
| P418289 | P4182891289004 | BARIUM | 255 | MG/L | | 50 0 | | 14-DEC-89 |
| P418289 | P418289-0519-02-0 | BARIUM | 284 | UG/L | | 200 | | 19-MAY-90 |
| P418289 | GW00363IT | BARIUM | 236.00 | UG/L | | 200 | | 11-SEP-90 |
| P418289 | GW00683IT | BARIUM | 267 | UG/L | | 200 | | 19-NOV-90 |
| P418289 | GW01001IT | BARIUM | 255.00 | UG/L | | 200 | | 19-MAR-91 |
| P418289 | GW01430IT | BARIUM | 264.00 | UG/L | E | 200 | | 18-JUN-91 |
| P418289 | P4182890306 | BERYLLIUM | 1.4 | UG/G | | 0.86 | | 07-NOV-89 |
| P418289 | P4182891619 | BERYLLIUM | 0.86 | UG/G | | 0.80 | | 07-NOV-89 |
| P418289 | P4182891416 | BERYLLIUM | 0.88 | UG/G | | 0 82 | | 07-NOV-89 |
| P418289 | GOP01890390001 | BICARBONATE | 360 | MG/L | | | | 22-MAR-90 |
| P418289 | P418289-0519-02-0 | BICARBONATE AS CACO3 | 314 | MG/L | | 2 | | 19-MAY-90 |
| P418289 | GW00363IT | BICARBONATE AS CACO3 | 310 | MG/L | | 1.0 | | 11-SEP-90 |
| P418289 | GW00683IT | BICARBONATE AS CACO3 | 300 | MG/L | | 1 | | 19-NOV-90 |
| P418289 | GW01001IT | BICARBONATE AS CACO3 | 300 | MG/L | | 1 0 | | 19-MAR-91 |
| P418289 | GW01430IT | BICARBONATE AS CACO3 | 290 | MG/L | | 1.0 | | 18-JUN-91 |
| P418289 | P4182890306 | CALCIUM | 2410 | UG/G | | 858 | | 07-NOV-89 |
| P418289 | P4182890610 | CALCIUM | 30300 | UG/G | | 1020 | | 07-NOV-89 |
| P418289 | P4182891014 | CALCIUM | 4040 | UG/G | | 946 | | 07-NOV-89 |
| P418289 | P4182892326 | CALCIUM | 5070 | UG/G | | 1180 | | 07-NOV-89 |
| P418289 | P4182891416 | CALCIUM | 2880 | UG/G | | 816 | | 07-NOV-89 |
| P418289 | P4182891923 | CALCIUM | 3680 | UG/G | | 964 | | 07-NOV-89 |
| P418289 | P4182891619 | CALCIUM | 3320 | UG/G | | 800 | | 07-NOV-89 |
| P418289 | P4182891289004 | CALCIUM | 142 00 | MG/L | | 100 | | 14-DEC-89 |
| P418289 | P418289-0519-02-0 | CALCIUM | 159000 | UG/L | | 5000 | | 19-MAY-90 |
| P418289 | GW00363IT | CALCIUM | 132000.00 | UG/L | | 5000 | | 11-SEP-90 |
| P418289 | GW00683IT | CALCIUM | 155000 | UG/L | | 5000 | | 19-NOV-90 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P418289 | GW01001IT | CALCIUM | 142000.00 | UG/L | | 5000 | | 19-MAR-91 |
| P418289 | GW01430IT | CALCIUM | 145000 00 | UG/L | | 5000 | | 18-JUN-91 |
| P418289 | P4182890306 | CHROMIUM | 9.0 | UG/G | | 1.7 | | 07-NOV-89 |
| P418289 | P4182890610 | CHROMIUM | 5.6 | UG/G | | 2.0 | | 07-NOV-89 |
| P418289 | P4182891014 | CHROMIUM | 19.3 | UG/G | | 1.9 | | 07-NOV-89 |
| P418289 | P4182892326 | CHROMIUM | 4.3 | UG/G | | 2.4 | | 07-NOV-89 |
| P418289 | P4182891923 | CHROMIUM | 9 7 | UG/G | | 1.9 | | 07-NOV-89 |
| P418289 | P4182891619 | CHROMIUM | 9.9 | UG/G | | 1.6 | | 07-NOV-89 |
| P418289 | P4182891416 | CHROMIUM | 12 5 | UG/G | | 1.6 | | 07-NOV-89 |
| P418289 | GW00363IT | CHROMIUM | 20.30 | UG/L | | 10 | | 11-SEP-90 |
| P418289 | GW01430IT | CHROMIUM | 10.30 | UG/L | | 10 | | 18-JUN-91 |
| P418289 | P4182890306 | COBALT | 11.5 | UG/G | | 8.6 | | 07-NOV-89 |
| P418289 | P4182890306 | COPPER | 8.4 | UG/G | | 4.3 | | 07-NOV-89 |
| P418289 | P4182890610 | COPPER | 8.6 | UG/G | | 5.1 | | 07-NOV-89 |
| P418289 | P4182891014 | COPPER | 13.6 | UG/G | | 4.7 | | 07-NOV-89 |
| P418289 | P4182892326 | COPPER | 12.5 | UG/G | | 5.9 | | 07-NOV-89 |
| P418289 | P4182891416 | COPPER | 16 2 | UG/G | | 4.1 | | 07-NOV-89 |
| P418289 | P4182891923 | COPPER | 16.6 | UG/G | | 4.8 | | 07-NOV-89 |
| P418289 | P4182891619 | COPPER | 11.4 | UG/G | | 4.0 | | 07-NOV-89 |
| P418289 | P4182891416 | IRON | 11200 | UG/G | | 16 3 | | 07-NOV-89 |
| P418289 | P4182891619 | IRON | 8040 | UG/G | | 16.0 | | 07-NOV-89 |
| P418289 | P4182892326 | IRON | 5480 | UG/G | | 23.6 | | 07-NOV-89 |
| P418289 | P4182891923 | IRON | 11900 | UG/G | | 19.3 | | 07-NOV-89 |
| P418289 | P4182890306 | IRON | 12700 | UG/G | | 17.2 | | 07-NOV-89 |
| P418289 | P4182891014 | IRON | 9530 | UG/G | | 18 9 | | 07-NOV-89 |
| P418289 | P4182890610 | IRON | 6500 | UG/G | | 20.4 | | 07-NOV-89 |
| P418289 | P4182890306 | LEAD | 1.3 | UG/G | | 1.2 | | 07-NOV-89 |
| P418289 | P4182891014 | LEAD | 3.2 | UG/G | | 1.2 | | 07-NOV-89 |
| P418289 | P4182890610 | LEAD | 4.2 | UG/G | | 0 92 | | 07-NOV-89 |
| P418289 | P4182891416 | LEAD | 3 1 | UG/G | | 0.94 | | 07-NOV-89 |
| P418289 | P4182892326 | LEAD | 4.5 | UG/G | | 1.1 | | 07-NOV-89 |
| P418289 | P4182891923 | LEAD | 8.6 | UG/G | | 1.0 | | 07-NOV-89 |
| P418289 | P4182891014 | MAGNESIUM | 1950 | UG/G | | 946 | | 07-NOV-89 |
| P418289 | P4182890610 | MAGNESIUM | 1860 | UG/G | | 1020 | | 07-NOV-89 |
| P418289 | P4182891416 | MAGNESIUM | 2600 | UG/G | | 816 | | 07-NOV-89 |
| P418289 | P4182891619 | MAGNESIUM | 1920 | UG/G | | 800 | | 07-NOV-89 |
| P418289 | P4182892326 | MAGNESIUM | 1220 | UG/G | | 1180 | | 07-NOV-89 |
| P418289 | P4182891923 | MAGNESIUM | 2140 | UG/G | | 964 | | 07-NOV-89 |
| P418289 | P4182891289004 | MAGNESIUM | 22.30 | MG/L | | 200 | | 14-DEC-89 |
| P418289 | P418289-0519-02-0 | MAGNESIUM | 20900 | UG/L | | 5000 | | 19-MAY-90 |
| P418289 | GW00363IT | MAGNESIUM | 17400.00 | UG/L | | 5000 | | 11-SEP-90 |
| P418289 | GW00683IT | MAGNESIUM | 20000 | UG/L | | 5000 | | 19-NOV-90 |
| P418289 | GW01001IT | MAGNESIUM | 18400 00 | UG/L | | 5000 | | 19-MAR-91 |
| P418289 | GW01430IT | MAGNESIUM | 18400.00 | UG/L | | 5000 | | 18-JUN-91 |
| P418289 | P4182891416 | MANGANESE | 129 | UG/G | | 2 4 | | 07-NOV-89 |
| P418289 | P4182891619 | MANGANESE | 209 | UG/G | | 2.4 | | 07-NOV-89 |
| P418289 | P4182892326 | MANGANESE | 148 | UG/G | | 3.5 | | 07-NOV-89 |
| P418289 | P4182891923 | MANGANESE | 99.9 | UG/G | | 2.9 | | 07-NOV-89 |
| P418289 | P4182890306 | MANGANESE | 71.3 | UG/G | | 2.6 | | 07-NOV-89 |
| P418289 | P4182890610 | MANGANESE | 285 | UG/G | | 3.1 | | 07-NOV-89 |
| P418289 | P4182891014 | MANGANESE | 145 | UG/G | | 2.8 | | 07-NOV-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P418289 | P418289-0519-02-0 | MANGANESE | 16 2 | UG/L | | 15 | | 19-MAY-90 |
| P418289 | GW00363IT | MANGANESE | 62.40 | UG/L | | 15 | | 11-SEP-90 |
| P418289 | GW00683IT | MANGANESE | 36 2 | UG/L | | 15 | | 19-NOV-90 |
| P418289 | GW01001IT | MANGANESE | 25 30 | UG/L | | 15 | | 19-MAR-91 |
| P418289 | GW01430IT | MANGANESE | 33.80 | UG/L | | 15 | | 18-JUN-91 |
| P418289 | P4182891289004 | MERCURY | .0017 | MG/L | | 0 20 | | 14-DEC-89 |
| P418289 | P418289-0519-02-0 | MERCURY | 1.7 | UG/L | | 0.2 | | 19-MAY-90 |
| P418289 | GW00363IT | MERCURY | 1.20 | UG/L | | 0 | | 11-SEP-90 |
| P418289 | GW00683IT | MERCURY | 1.4 | UG/L | | 0.2 | | 19-NOV-90 |
| P418289 | GW01001IT | MERCURY | 0.58 | UG/L | | 0 | | 19-MAR-91 |
| P418289 | GW01430IT | MERCURY | 1.40 | UG/L | | 0 | | 18-JUN-91 |
| P418289 | P4182890306 | NICKEL | 12.1 | UG/G | | 6.9 | | 07-NOV-89 |
| P418289 | P4182891416 | NICKEL | 10.7 | UG/G | | 6.5 | | 07-NOV-89 |
| P418289 | P4182891014 | NICKEL | 10 0 | UG/G | | 7.6 | | 07-NOV-89 |
| P418289 | P4182890610 | NICKEL | 15 1 | UG/G | | 8 1 | | 07-NOV-89 |
| P418289 | P4182891619 | NICKEL | 11.2 | UG/G | | 6 4 | | 07-NOV-89 |
| P418289 | P4182891923 | NICKEL | 10.7 | UG/G | | 7 7 | | 07-NOV-89 |
| P418289 | P4182891289004 | PLUTONIUM-239 | 0.022 | PCI/L | | 0 | | 14-DEC-89 |
| P418289 | P4182891619 | POTASSIUM | 1400 | UG/G | | 800 | | 07-NOV-89 |
| P418289 | P4182891923 | POTASSIUM | 1590 | UG/G | | 964 | | 07-NOV-89 |
| P418289 | P4182890610 | POTASSIUM | 1120 | UG/G | | 1020 | | 07-NOV-89 |
| P418289 | P4182891416 | POTASSIUM | 1390 | UG/G | | 816 | | 07-NOV-89 |
| P418289 | P4182891014 | POTASSIUM | 1400 | UG/G | | 946 | | 07-NOV-89 |
| P418289 | P418289-0519-02-0 | SODIUM | 29800 | UG/L | | 5000 | | 19-MAY-90 |
| P418289 | GW00363IT | SODIUM | 31400 00 | UG/L | | 5000 | | 11-SEP-90 |
| P418289 | GW00683IT | SODIUM | 33000 | UG/L | | 5000 | | 19-NOV-90 |
| P418289 | GW01001IT | SODIUM | 29100.00 | UG/L | | 5000 | | 19-MAR-91 |
| P418289 | GW01430IT | SODIUM | 30600.00 | UG/L | | 5000 | | 18-JUN-91 |
| P418289 | P4182892326 | STRONTIUM | 28 6 | UG/G | | 23.6 | | 07-NOV-89 |
| P418289 | P4182890610 | STRONTIUM | 27 1 | UG/G | | 20.4 | | 07-NOV-89 |
| P418289 | P418289-0519-02-0 | STRONTIUM | 653 | UG/L | | 100 | | 19-MAY-90 |
| P418289 | GW00363IT | STRONTIUM | 516.00 | UG/L | | 200 | | 11-SEP-90 |
| P418289 | GW00683IT | STRONTIUM | 543 | UG/L | | 200 | | 19-NOV-90 |
| P418289 | GW01001IT | STRONTIUM | 582.00 | UG/L | | 200 | | 19-MAR-91 |
| P418289 | GW01430IT | STRONTIUM | 590.00 | UG/L | | 200 | | 18-JUN-91 |
| P418289 | GW00683IT | SULFATE | 600 | MG/L | | 10 | | 19-NOV-90 |
| P418289 | P4182891923 | TIN | 31.6 | UG/G | | 19.3 | | 07-NOV-89 |
| P418289 | P4182890306 | TIN | 31.6 | UG/G | | 17.2 | | 07-NOV-89 |
| P418289 | P4182891416 | TIN | 25 3 | UG/G | | 16.3 | | 07-NOV-89 |
| P418289 | P4182890610 | TIN | 24.0 | UG/G | | 20.4 | | 07-NOV-89 |
| P418289 | P4182891619 | TIN | 24 7 | UG/G | | 16.0 | | 07-NOV-89 |
| P418289 | P4182891014 | TIN | 23.0 | UG/G | | 18 9 | | 07-NOV-89 |
| P418289 | P4182891289004 | URANIUM-233,-234 | 2.82 | PCI/L | | 0 | | 14-DEC-89 |
| P418289 | GOP01890390001 | URANIUM-233,-234 | 2.727 | PC/L | | 0.424 | | 22-MAR-90 |
| P418289 | GW00683IT | URANIUM-233,-234 | 1.552 | PCI/L | | .6 | | 19-NOV-90 |
| P418289 | P4182890306 | VANADIUM | 40.5 | UG/G | | 8.6 | | 07-NOV-89 |
| P418289 | P4182890610 | VANADIUM | 18.3 | UG/G | | 10.2 | | 07-NOV-89 |
| P418289 | P4182891416 | VANADIUM | 23.5 | UG/G | | 8.2 | | 07-NOV-89 |
| P418289 | P4182891014 | VANADIUM | 22 4 | UG/G | | 9.5 | | 07-NOV-89 |
| P418289 | P4182891619 | VANADIUM | 13.5 | UG/G | | 8.0 | | 07-NOV-89 |
| P418289 | P4182892326 | VANADIUM | 13 1 | UG/G | | 11 8 | | 07-NOV-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P418289 | P4182891923 | VANADIUM | 27.3 | UG/G | | 9.6 | | 07-NOV-89 |
| P418289 | P4182891923 | ZINC | 37.0 | UG/G | | 3.9 | | 07-NOV-89 |
| P418289 | P4182892326 | ZINC | 33.7 | UG/G | | 4.7 | | 07-NOV-89 |
| P418289 | P4182890306 | ZINC | 11.6 | UG/G | | 3.4 | | 07-NOV-89 |
| P418289 | P4182890610 | ZINC | 14 6 | UG/G | | 4.1 | | 07-NOV-89 |
| P418289 | P4182891416 | ZINC | 29.7 | UG/G | | 3.3 | | 07-NOV-89 |
| P418289 | P4182891014 | ZINC | 21.1 | UG/G | | 3.8 | | 07-NOV-89 |
| P418289 | P4182891619 | ZINC | 21.9 | UG/G | | 3.2 | | 07-NOV-89 |
| P418289 | P4182892326 | pH | 8.3 | PHUNIT | | | | 07-NOV-89 |
| P418289 | P4182891619 | pH | 8.5 | PHUNIT | | | | 07-NOV-89 |
| P418289 | P4182891416 | pH | 8.6 | PHUNIT | | | | 07-NOV-89 |
| P418289 | P4182891014 | pH | 8.7 | PHUNIT | | | | 07-NOV-89 |
| P418289 | P4182890610 | pH | 8.4 | PHUNIT | | | | 07-NOV-89 |
| P419689 | P4196890711 | ALUMINUM | 3440 | UG/G | | 37.5 | | 08-DEC-89 |
| P419689 | P4196891822 | ALUMINUM | 4260 | UG/G | | 39.2 | | 08-DEC-89 |
| P419689 | P4196892223 | ALUMINUM | 5510 | UG/G | | 34.2 | | 08-DEC-89 |
| P419689 | P4196891518 | ALUMINUM | 4980 | UG/G | | 38.6 | | 08-DEC-89 |
| P419689 | P4196891115 | ALUMINUM | 4080 | UG/G | | 36.3 | | 08-DEC-89 |
| P419689 | P4196892326 | ALUMINUM | 5940 | UG/G | | 47.1 | | 08-DEC-89 |
| P419689 | P4196890003 | ALUMINUM | 7080 | UG/G | | 44 1 | | 08-DEC-89 |
| P419689 | P4196890307D | ALUMINUM | 5660 | UG/G | | 35 7 | | 08-DEC-89 |
| P419689 | P4196890307 | ALUMINUM | 5430 | UG/G | | 31.6 | | 08-DEC-89 |
| P419689 | P4196892223 | ARSENIC | 2.9 | UG/G | | 1.8 | | 08-DEC-89 |
| P419689 | P4196891518 | ARSENIC | 2.3 | UG/G | | 1.8 | | 08-DEC-89 |
| P419689 | P4196890003 | ARSENIC | 4.0 | UG/G | | 3.2 | | 08-DEC-89 |
| P419689 | P4196890307D | ARSENIC | 4.2 | UG/G | | 3.6 | | 08-DEC-89 |
| P419689 | P4196890003 | BARIUM | 48.7 | UG/G | | 44.1 | | 08-DEC-89 |
| P419689 | P4196890307D | BARIUM | 41.3 | UG/G | | 35.7 | | 08-DEC-89 |
| P419689 | P4196890711 | BARIUM | 39.6 | UG/G | | 37.5 | | 08-DEC-89 |
| P419689 | P4196891822 | BARIUM | 42 3 | UG/G | | 39 2 | | 08-DEC-89 |
| P419689 | P4196891518 | BARIUM | 80 6 | UG/G | | 38.6 | | 08-DEC-89 |
| P419689 | P4196891115 | BARIUM | 49.0 | UG/G | | 36.3 | | 08-DEC-89 |
| P419689 | P4196892326 | BARIUM | 72.8 | UG/G | | 47.1 | | 08-DEC-89 |
| P419689 | P4196890307D | BERYLLIUM | 0.89 | UG/G | | 0 89 | | 08-DEC-89 |
| P419689 | P4196890711 | CALCIUM | 3580 | UG/G | | 938 | | 08-DEC-89 |
| P419689 | P4196891115 | CALCIUM | 3120 | UG/G | | 908 | | 08-DEC-89 |
| P419689 | P4196892326 | CALCIUM | 5170 | UG/G | | 1180 | | 08-DEC-89 |
| P419689 | P4196891822 | CALCIUM | 1960 | UG/G | | 980 | | 08-DEC-89 |
| P419689 | P4196892223 | CALCIUM | 1710 | UG/G | | 855 | | 08-DEC-89 |
| P419689 | P4196891518 | CALCIUM | 2220 | UG/G | | 966 | | 08-DEC-89 |
| P419689 | P4196890003 | CALCIUM | 5510 | UG/G | | 1100 | | 08-DEC-89 |
| P419689 | P4196890307D | CALCIUM | 24000 | UG/G | | 892 | | 08-DEC-89 |
| P419689 | P4196890307 | CALCIUM | 16500 | UG/G | | 790 | | 08-DEC-89 |
| P419689 | P4196891115 | CHROMIUM | 16.8 | UG/G | | 1 8 | | 08-DEC-89 |
| P419689 | P4196891518 | CHROMIUM | 6.9 | UG/G | | 1.9 | | 08-DEC-89 |
| P419689 | P4196891822 | CHROMIUM | 4.9 | UG/G | | 2.0 | | 08-DEC-89 |
| P419689 | P4196892326 | CHROMIUM | 7.0 | UG/G | | 2.4 | | 08-DEC-89 |
| P419689 | P4196892223 | CHROMIUM | 8.4 | UG/G | | 1.7 | | 08-DEC-89 |
| P419689 | P4196890003 | CHROMIUM | 12.6 | UG/G | | 2.2 | | 08-DEC-89 |
| P419689 | P4196890307D | CHROMIUM | 43.7 | UG/G | | 1.8 | | 08-DEC-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P419689 | P4196890711 | CHROMIUM | 15.0 | UG/G | | 1.9 | | 08-DEC-89 |
| P419689 | P4196890307 | CHROMIUM | 34.2 | UG/G | | 1.6 | | 08-DEC-89 |
| P419689 | P4196890307D | COBALT | 15.4 | UG/G | | 8.9 | | 08-DEC-89 |
| P419689 | P4196891115 | COPPER | 6 9 | UG/G | | 4.5 | | 08-DEC-89 |
| P419689 | P4196891518 | COPPER | 9.5 | UG/G | | 4.8 | | 08-DEC-89 |
| P419689 | P4196892223 | COPPER | 13.0 | UG/G | | 4.3 | | 08-DEC-89 |
| P419689 | P4196892326 | COPPER | 16.7 | UG/G | | 5.9 | | 08-DEC-89 |
| P419689 | P4196891822 | COPPER | 6.8 | UG/G | | 4.9 | | 08-DEC-89 |
| P419689 | P4196890003 | COPPER | 9.5 | UG/G | | 5.5 | | 08-DEC-89 |
| P419689 | P4196890307D | COPPER | 10.7 | UG/G | | 4.5 | | 08-DEC-89 |
| P419689 | P4196890307 | COPPER | 8 1 | UG/G | | 3 9 | | 08-DEC-89 |
| P419689 | P4196890711 | COPPER | 6.0 | UG/G | | 4.7 | | 08-DEC-89 |
| P419689 | P4196890003 | IRON | 12600 | UG/G | | 22.0 | | 08-DEC-89 |
| P419689 | P4196890711 | IRON | 7530 | UG/G | | 18.8 | | 08-DEC-89 |
| P419689 | P4196890307D | IRON | 10100 | UG/G | | 17.8 | | 08-DEC-89 |
| P419689 | P4196891115 | IRON | 6640 | UG/G | | 18.2 | | 08-DEC-89 |
| P419689 | P4196890307 | IRON | 7880 | UG/G | | 15.8 | | 08-DEC-89 |
| P419689 | P4196891518 | IRON | 9450 | UG/G | | 19.3 | | 08-DEC-89 |
| P419689 | P4196892326 | IRON | 10500 | UG/G | | 23.5 | | 08-DEC-89 |
| P419689 | P4196892223 | IRON | 12300 | UG/G | | 17.1 | | 08-DEC-89 |
| P419689 | P4196891822 | IRON | 5940 | UG/G | | 19.6 | | 08-DEC-89 |
| P419689 | P4196891518 | LEAD | 4.0 | UG/G | | 1.1 | | 08-DEC-89 |
| P419689 | P4196891822 | LEAD | 14.9 | UG/G | | 6.0 | | 08-DEC-89 |
| P419689 | P4196892326 | LEAD | 10 9 | UG/G | | 6 6 | | 08-DEC-89 |
| P419689 | P4196892223 | LEAD | 6.5 | UG/G | | 5.3 | | 08-DEC-89 |
| P419689 | P4196890003 | LEAD | 11.1 | UG/G | | 4 7 | | 08-DEC-89 |
| P419689 | P4196891115 | LEAD | 2.5 | UG/G | | 1.2 | | 08-DEC-89 |
| P419689 | P4196890711 | LEAD | 3.3 | UG/G | | 1.3 | | 08-DEC-89 |
| P419689 | P4196890307D | LEAD | 4.3 | UG/G | | 1.1 | | 08-DEC-89 |
| P419689 | P4196890307 | LEAD | 2.9 | UG/G | | 1.1 | | 08-DEC-89 |
| P419689 | P4196891518 | MAGNESIUM | 1970 | UG/G | | 966 | | 08-DEC-89 |
| P419689 | P4196891822 | MAGNESIUM | 1120 | UG/G | | 980 | | 08-DEC-89 |
| P419689 | P4196892326 | MAGNESIUM | 1590 | UG/G | | 1180 | | 08-DEC-89 |
| P419689 | P4196892223 | MAGNESIUM | 1340 | UG/G | | 855 | | 08-DEC-89 |
| P419689 | P4196890003 | MAGNESIUM | 1170 | UG/G | | 1100 | | 08-DEC-89 |
| P419689 | P4196891115 | MAGNESIUM | 1110 | UG/G | | 908 | | 08-DEC-89 |
| P419689 | P4196890307D | MAGNESIUM | 1310 | UG/G | | 892 | | 08-DEC-89 |
| P419689 | P4196890307 | MAGNESIUM | 972 | UG/G | | 790 | | 08-DEC-89 |
| P419689 | P4196890003 | MANGANESE | 219 | UG/G | | 3 3 | | 08-DEC-89 |
| P419689 | P4196891115 | MANGANESE | 69.3 | UG/G | | 2.7 | | 08-DEC-89 |
| P419689 | P4196890711 | MANGANESE | 104 | UG/G | | 2.8 | | 08-DEC-89 |
| P419689 | P4196890307D | MANGANESE | 153 | UG/G | | 2.7 | | 08-DEC-89 |
| P419689 | P4196890307 | MANGANESE | 43.3 | UG/G | | 2.4 | | 08-DEC-89 |
| P419689 | P4196891518 | MANGANESE | 176 | UG/G | | 2.9 | | 08-DEC-89 |
| P419689 | P4196892223 | MANGANESE | 53.1 | UG/G | | 2.6 | | 08-DEC-89 |
| P419689 | P4196892326 | MANGANESE | 119 | UG/G | | 3.5 | | 08-DEC-89 |
| P419689 | P4196891822 | MANGANESE | 91.6 | UG/G | | 2.9 | | 08-DEC-89 |
| P419689 | P4196890003 | NICKEL | 9.6 | UG/G | | 8 8 | | 08-DEC-89 |
| P419689 | P4196891518 | NICKEL | 9.4 | UG/G | | 7.7 | | 08-DEC-89 |
| P419689 | P4196890307 | NICKEL | 8 1 | UG/G | | 6.3 | | 08-DEC-89 |
| P419689 | P4196890307D | NICKEL | 12.2 | UG/G | | 7.1 | | 08-DEC-89 |

| Location | Sample Number | Chemical | Result | Unit | Qualifier | Detection Limit | VA | Sample Date |
|---|---|---|---|---|---|---|---|---|
| P419689 | P4196892223 | POTASSIUM | 915 | UG/G | | 855 | | 08-DEC-89 |
| P419689 | P4196891518 | POTASSIUM | 1230 | UG/G | | 966 | | 08-DEC-89 |
| P419689 | P4196892326 | STRONTIUM | 32.7 | UG/G | | 23.5 | | 08-DEC-89 |
| P419689 | P4196890307D | STRONTIUM | 23.3 | UG/G | | 17.8 | | 08-DEC-89 |
| P419689 | P4196890307 | STRONTIUM | 18.3 | UG/G | | 15.8 | | 08-DEC-89 |
| P419689 | P4196890003 | VANADIUM | 41.6 | UG/G | | 11.0 | | 08-DEC-89 |
| P419689 | P4196891822 | VANADIUM | 14.8 | UG/G | | 9.8 | | 08-DEC-89 |
| P419689 | P4196891518 | VANADIUM | 22 9 | UG/G | | 9.7 | | 08-DEC-89 |
| P419689 | P4196891115 | VANADIUM | 17.4 | UG/G | | 9.1 | | 08-DEC-89 |
| P419689 | P4196890307 | VANADIUM | 23.6 | UG/G | | 7.9 | | 08-DEC-89 |
| P419689 | P4196890711 | VANADIUM | 23.7 | UG/G | | 9.4 | | 08-DEC-89 |
| P419689 | P4196890307D | VANADIUM | 35.0 | UG/G | | 8.9 | | 08-DEC-89 |
| P419689 | P4196892223 | VANADIUM | 25.6 | UG/G | | 8 6 | | 08-DEC-89 |
| P419689 | P4196892326 | VANADIUM | 23.5 | UG/G | | 11.8 | | 08-DEC-89 |
| P419689 | P4196892223 | ZINC | 30.0 | UG/G | | 3.4 | | 08-DEC-89 |
| P419689 | P4196892326 | ZINC | 55.3 | UG/G | | 4.7 | | 08-DEC-89 |
| P419689 | P4196890003 | ZINC | 19 1 | UG/G | | 4.4 | | 08-DEC-89 |
| P419689 | P4196890307 | ZINC | 6 7 | UG/G | | 3.2 | | 08-DEC-89 |
| P419689 | P4196890711 | ZINC | 8.3 | UG/G | | 3.8 | | 08-DEC-89 |
| P419689 | P4196891518 | ZINC | 20 9 | UG/G | | 3 9 | | 08-DEC-89 |
| P419689 | P4196891822 | ZINC | 20.7 | UG/G | | 3.9 | | 08-DEC-89 |
| P419689 | P4196891115 | ZINC | 7.2 | UG/G | | 3.6 | | 08-DEC-89 |
| P419689 | P4196890307D | ZINC | 15.1 | UG/G | | 3.6 | | 08-DEC-89 |

# APPENDIX B

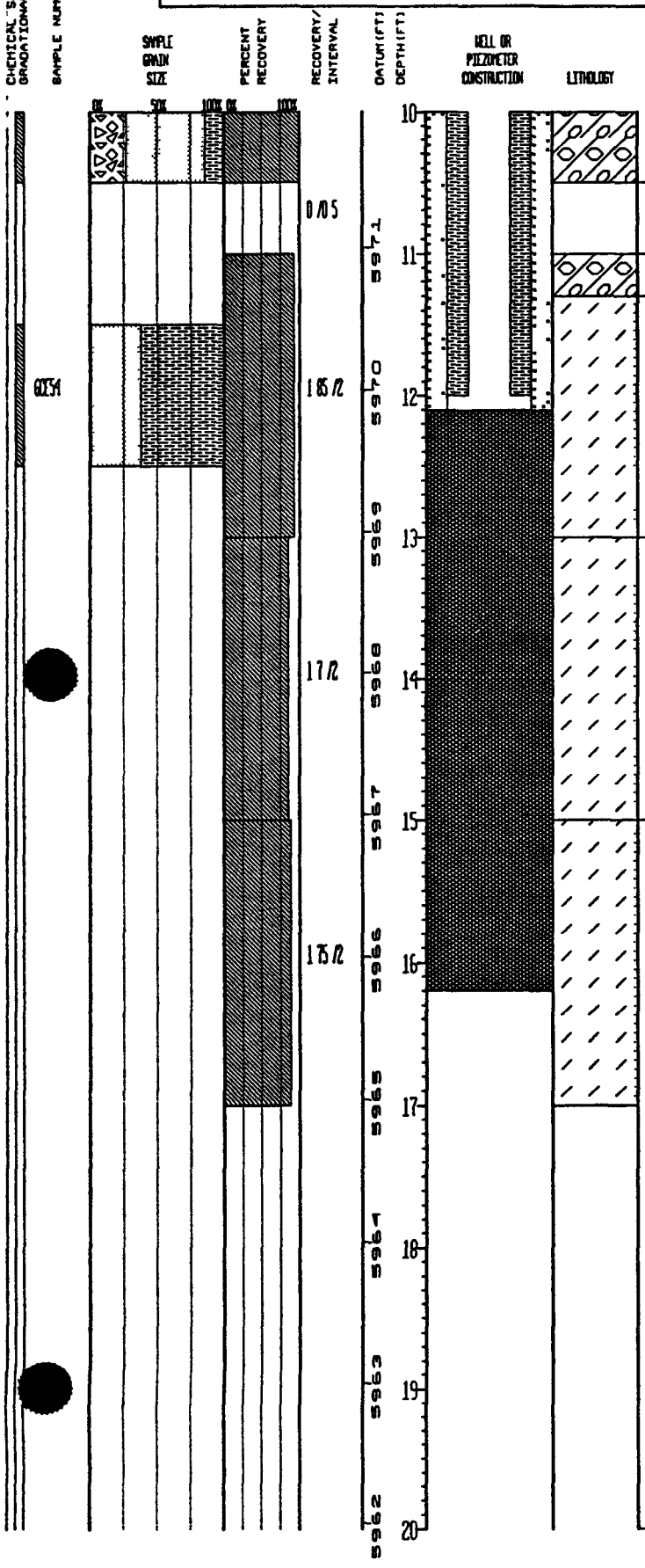
| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 17 | GROUND ELEVATION (FT) | 5981 96 | PROJECT NUMBER | 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|---|---|
| NORTH | 749917 | AREA 903 PAD | CASING DIAMETER (IN) | 2 ID | GEOLOGIST | TSD/DCB | 10-87 |
| EAST | 2085289 | LOCATOR NUMBER 118 | BOREHOLE DIAMETER (IN) | 7 5 | DATE DRILLED | 06/15/87 | |

REMARKS Hollow Stem Auger

| ORIGINAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0 93 /1 | 5985 | 0 | | | GC | GRAVEL - light gray (N7) and grayish orange pink (10R 8/2), angular to sub-rounded, low to high sphericity, poorly graded, some clay, grayish brown (5YR 3/2), trace of roots |
| | | | | 0 /1 | 5980 | 1 | | | NO SAMPLE | |
| | | | | 0 63 /0 6 | 5975 | 2 | | | GC | GRAVEL - grayish pink (5R 8/2) to light brownish gray (5YR 6/1), angular to sub-angular, sphericity is low to high, well graded, some clay, silt and sand |
| | | | | 0 /2 4 | 5970 | 3 | | | NO SAMPLE | |
| | | | | 1 82 /2 | 5965 | 4 | | | GP | SANDY GRAVEL - light gray (N7), angular to sub-rounded, low to high sphericity, moderately graded, some calcareous mineralization |
| | | | | 1 85 /2 | 5960 | 5 | | | GC | Same as above with some clay occurring from approximately 8 4 ft to 9 0 ft |
| | | | | 1 53 /1 5 | 5955 | 6 | | | GC | Same as above including clay fraction |
| | | | | | 5950 | 7 | | | | |
| | | | | | 5945 | 8 | | | | |
| | | | | | 5940 | 9 | | | | |
| | | | | | 5935 | 10 | | | | |

GC13

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 17 | GROUND ELEVATION (FT) | 5981 96 | PROJECT NUMBER | 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|---|---|
| NORTH | 749947 | AREA 903 PAD | CASING DIAMETER (IN) | 2 ID | GEOLOGIST | TSD/DCB | 10-87 |
| EAST | 2085289 | LOCATOR NUMBER M8 | BOREHOLE DIAMETER (IN) | 7 5 | DATE DRILLED | 06/15/87 | |
| REMARKS | Hollow Stem Auger | | | | | | |

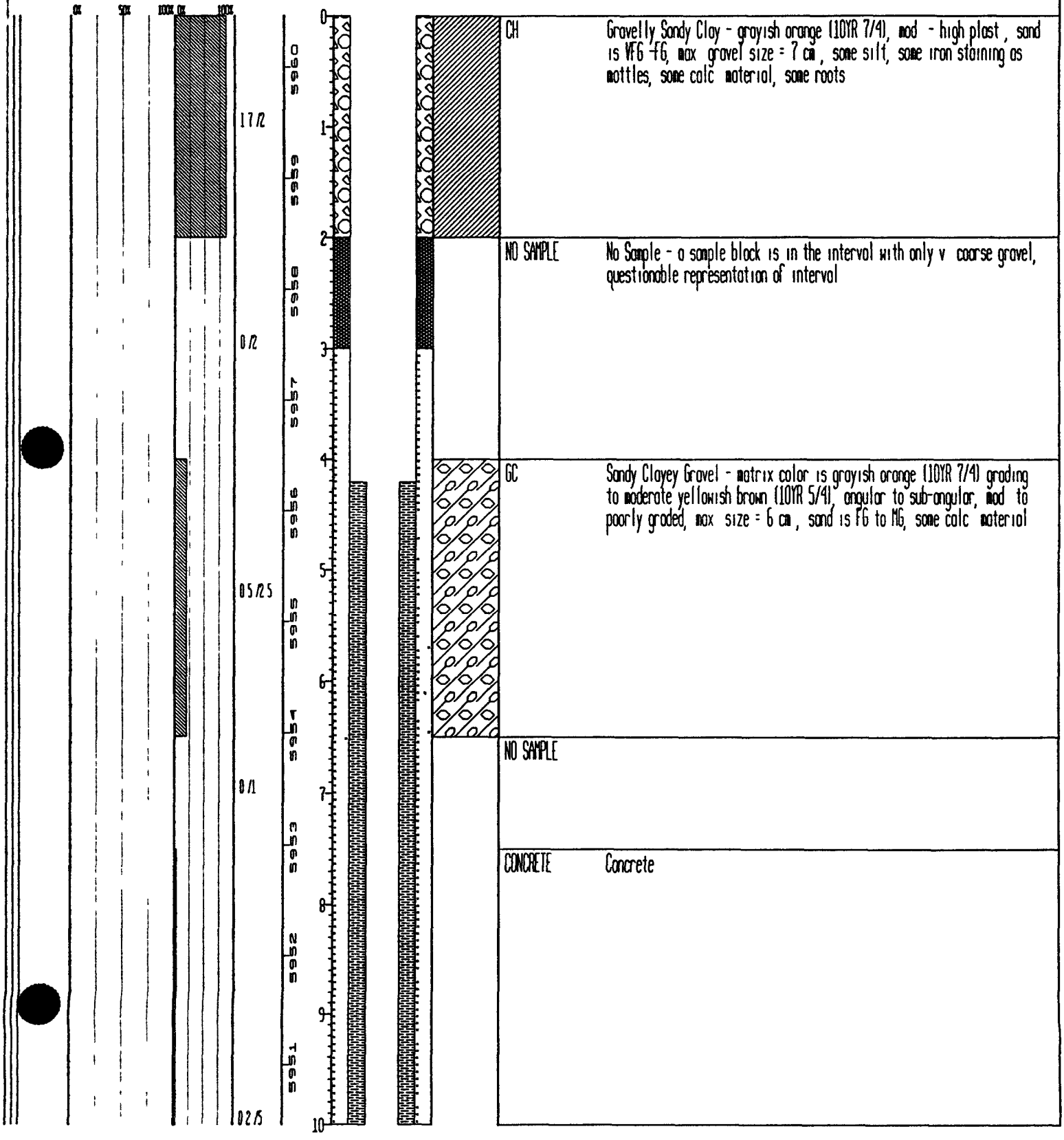



| UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|
| NO SAMPLE | |
| GC | Same as above |
| SILTY SANDSTONE | Top of Bedrock<br>Very weathered, fine to very fine, white (N9) and dark yellowish orange (10YR 6/6), some calcareous mineralization and black (carbonaceous?) mineralization, some horizontal bedding 3 - <1 mm thick |
| SILTY SANDSTONE | Same as above |
| SILTY SANDSTONE | Same as above with decreasing amounts of staining and calcareous mineralization with depth NOTE Interval blocks from 15' to 17' appear to be reversed based on color gradation between 15' - 17' int and 13' to 15' interval<br><br>NOTE No water encountered while drilling |

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 22 | GROUND ELEVATION (FT) 5960 47 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|
| NORTH | 751112 | AREA SOLAR POND | CASING DIAMETER (IN) 2 ID | GEOLOGIST DAT | 20-86 |
| EAST | 2084358 | LOCATOR NUMBER L11 | BOREHOLE DIAMETER (IN) 7 25 | DATE DRILLED 09/04/86 | |

REMARKS Hollow Stem Auger

CHEMICAL SAMPLE DEPTH | GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE (0% 50% 100%) | PERCENT RECOVERY (0% 100%) | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION




| UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|
| CH | Gravelly Sandy Clay - grayish orange (10YR 7/4), mod - high plast , sand is VFG -FG, max gravel size = 7 cm , some silt, some iron staining as mottles, some calc material, some roots |
| NO SAMPLE | No Sample - a sample block is in the interval with only v coarse gravel, questionable representation of interval |
| GC | Sandy Clayey Gravel - matrix color is grayish orange (10YR 7/4) grading to moderate yellowish brown (10YR 5/4), angular to sub-angular, mod to poorly graded, max size = 6 cm , sand is FG to MG, some calc material |
| NO SAMPLE | |
| CONCRETE | Concrete |

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 22 | GROUND ELEVATION (FT) 5960 97 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|
| NORTH | 751112 | AREA SOLAR POND | CASING DIAMETER (IN) 2 ID | GEOLOGIST DAT | 20-86 |
| EAST | 2084358 | LOCATOR NUMBER L11 | BOREHOLE DIAMETER (IN) 7 25 | DATE DRILLED 09/04/86 | |
| REMARKS Hollow Stem Auger | | | | | |

| CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/ INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 0% 50% 100% | 0% 100% | 0.2/5 | 5950 | 10 | | | | |
| | | | | | 5949 | 11 | | | | |
| | | | | | 5948 | 12 | | | | |
| | | | | 0.85/0.5 | | 13 | | | CLAYEY SANDSTONE | Top of Bedrock<br>Dark yellowish orange, sub-angular to sub-rounded, poorly graded, sand is VFG - FG, abundant iron staining as mottles |
| | | | | 0/17 | 5947 | 14 | | | NO SAMPLE | |
| | | | | | 5946 | | | | | |
| | | | | 15/14 | 5945 | 15 | | | SILTY CLAYSTONE | Yellowish gray (5Y 8/1) at top grading to pale yellowish brown (10YR 6/2), apparent massive bedding, highly weathered, mod - poorly friable, abundant carb material at base of interval (trace of carb material at top), some iron staining as mottles, top of interval shows sharp contact with sand (FG - MG), trace of sand at top of interval |
| | | | | | | 16 | | | | |
| | | | | 12/14 | 5944 | 17 | | | SILTY CLAYSTONE | Same as above (base of interval) fracture at approx 80 degrees filled with calc material |
| | | | | | 5943 | | | | | |
| | | | | 14/15 | 5942 | 18 | | | SILTY CLAYSTONE | Same as above no apparent fractures |
| | | | | | | 19 | | | | |
| | | | | 14/14 | 5941 | | | | SILTY CLAYSTONE | Same as above light olive gray (5Y 6/1), some carb material |
| | | | | | | 20 | | | | |

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 22 | GROUND ELEVATION (FT) 5960 47 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|
| NORTH | 751112 | AREA SOLAR POND | CASING DIAMETER (IN) 2 ID | GEOLOGIST DAT | 20-86 |
| EAST | 2084358 | LOCATOR NUMBER L11 | BOREHOLE DIAMETER (IN) 7 25 | DATE DRILLED 09/04/86 | |
| REMARKS Hollow Stem Auger | | | | | |

| CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE (0% 50% 100%) | PERCENT RECOVERY (0% 100%) | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0/21 | 5940 | 20 | | | | NO SAMPLE |
| | | | | | 5939 | 21 | | | | |
| | | | | | 5938 | 22 | | | | |
| | | | | | 5937 | 23 | | | | |
| | | | | | 5936 | 24 | | | | |
| | | | | | 5935 | 25 | | | | |
| | | | | | 5934 | 26 | | | | |
| | | | | | 5933 | 27 | | | | |
| | | | | | 5932 | 28 | | | | |
| | | | | | 5931 | 29 | | | | |
| | | | | | | 30 | | | | |

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 15 5 | GROUND ELEVATION (FT) 5961 23 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|
| NORTH | 750818 | AREA SOLAR POND | CASING DIAMETER (IN) 2 ID | GEOLOGIST DCB | 28-86 |
| EAST | 2085241 | LOCATOR NUMBER M10 | BOREHOLE DIAMETER (IN) 7 25 | DATE DRILLED 08/28/86 | |
| REMARKS | Hollow Stem Auger | | | | |

| GRADATIONAL SAMPLE DEPTH / SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| | | | 07/1 | 5961 | 0 | | | CL | GRAVELLY CLAY, moderate brown (5 YR 3/4), low to moderate plasticity, some silt and sand, abundant caliche precipitate dispersed throughout clay |
| | | | 0/1 | 5960 | 1 | | | NO SAMPLE | |
| | | | 05/1 | 5959 | 2 | | | GC | Clayey Gravel, light gray (N7) matrix is moderate brown (5 YR 3/4), angular to sub-angular, poorly graded, max size 5 5 cm, some sand and silt |
| | | | 1/1 | 5958 | 3 | | | GC | Same as above, interval contains abundant caliche disseminated in clay matrix and as a rind on the gravel |
| | | | 04/04 | 5957 | 4 | | | GC | Same as above |
| | | | 13/21 | 5956 | 5 | | | GC | Same as above |
| | | | 0/15 | 5955 | 6 | | | NO SAMPLE | |
| | | | 01/01 | 5954 | 7 | | | GP | Two small cobbles, med gray (N5), sub-rounded, max size 7 cm |
| | | | 15/12 | 5953 | 8 | | | CL | Clay, light gray (N7), bedding not apparent, highly weathered, slightly friable, localized iron staining |
| | | | | 5952 | 9 | | | CLAYSTONE | Top of Bedrock<br>Light gray (N7), bedding not apparent, highly weathered, slightly friable, localized iron staining, body of caliche at approx 8 8 ft |
| | | | | | 10 | | | CLAYSTONE | Light gray (N7), bedding not apparent, highly weathered, slightly friable, localized iron staining, color varies to yellowish gray (5 Y 7/2) |

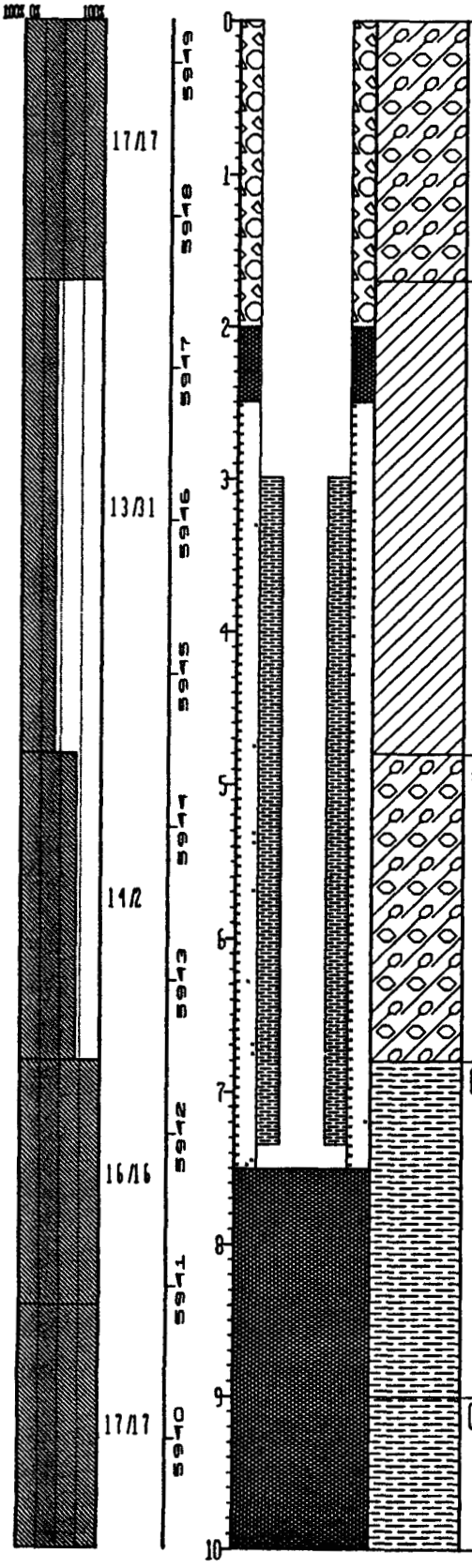
| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 15 5 | GROUND ELEVATION (FT) 5961 23 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|
| NORTH | 750818 | AREA SOLAR POND | CASING DIAMETER (IN) 2 ID | GEOLOGIST DCB | 28-86 |
| EAST | 2085241 | LOCATOR NUMBER N10 | BOREHOLE DIAMETER (IN) 7 25 | DATE DRILLED 08/28/86 | |
| REMARKS Hollow Stem Auger | | | | | |

| GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 0% 50% | 100% 0% 100% | 17/17 | 5951 | 10 | | | | |
| | | | | 15/15 | 5950 | 11 | | | CLAYSTONE | Same as above |
| | | | | | 5949 | 12 | | | CLAYSTONE | Same as above |
| | | | | 15/15 | 5948 | 13 | | | | |
| | | | | 08/08 | 5947 | 14 | | | CLAYSTONE | Same as above |
| | | | | 07/07 | 5946 | 15 | | | CLAYSTONE | Same as above |
| | | | | | 5945 | 16 | | | | |
| | | | | | 5944 | 17 | | | | |
| | | | | | 5943 | 18 | | | | |
| | | | | | 5942 | 19 | | | | |
| | | | | | | 20 | | | | |

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 16 8 | GROUND ELEVATION (FT) 5949 28 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|
| NORTH | 749963 | AREA MOUND AREA | CASING DIAMETER (IN) 0 | GEOLOGIST DCB | 33-86 |
| EAST | 2085000 | LOCATOR NUMBER M9 | BOREHOLE DIAMETER (IN) 0 | DATE DRILLED 09/10/86 | |

REMARKS Hollow Stem Auger

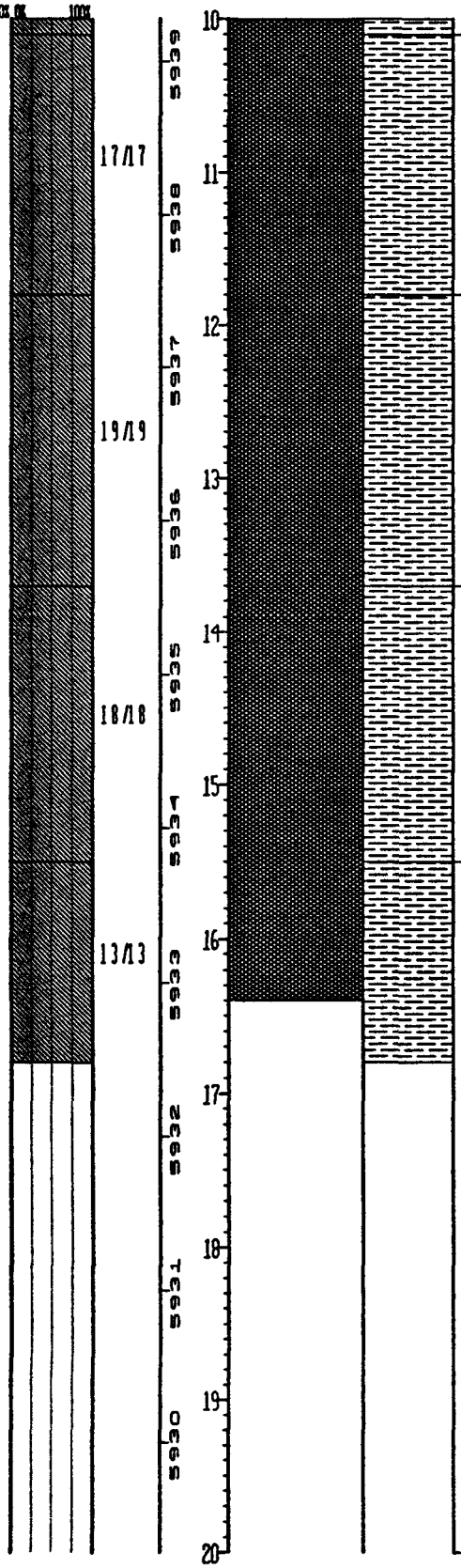
CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY




| UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|
| GC | Clayey Gravel, dominantly light gray (N7), clay matrix is light brownish gray (5YR 6/1), sub-angular to sub-rounded, poorly graded, max size 6 cm, some roots, matrix is calcareous |
| CL | GRAVELLY CLAY, pale yellowish brown (10YR 6/2), low to moderate plasticity, some silt, calcareous, color grades to dusky brown (5YR 2/2), from approx 4 6 ft to approx 6 0 ft |
| GC | Clayey Gravel, dominantly light gray (N7), clay matrix is pale brown (5YR 5/2), sub-angular, poorly graded, max size approx 2 5 cm |
| CLAYSTONE | Top of Bedrock<br>Moderate yellowish brown (10YR 5/4), moderately low plasticity, trace of silt |
| CLAYSTONE | Mottled yellowish brown (10YR 5/4) to light gray (N7), bedding not apparent, highly weathered, slightly friable, local iron staining |

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 16 8 | GROUND ELEVATION (FT) 5999 28 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|
| NORTH | 749963 | AREA MOUND AREA | CASING DIAMETER (IN) 0 | GEOLOGIST DCB | 33-86 |
| EAST | 2085000 | LOCATOR NUMBER M9 | BOREHOLE DIAMETER (IN) 0 | DATE DRILLED 09/10/86 | |
| REMARKS Hollow Stem Auger | | | | | |

CHEMICAL SAMPLE DEPTH
GRADATIONAL SAMPLE DEPTH
SAMPLE NUMBER
SAMPLE GRAIN SIZE (0% 50% 100%)
PERCENT RECOVERY (0% 100%)
RECOVERY/INTERVAL
DATUM (FT)
DEPTH (FT)
WELL OR PIEZOMETER CONSTRUCTION
LITHOLOGY




| UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|
| CLAYSTONE | Same as above |
| CLAYSTONE | As above with abundant iron staining from approx 11 8 ft to 13 6 ft |
| CLAYSTONE | As above with slickensides at approx 14 8 ft, attitude 45 degrees |
| CLAYSTONE | As above with some carbonaceous mineralization at approx 16 6 ft |

| STATE PLANE COORDINATE | TOTAL DEPTH (FT) 15 2 | GROUND ELEVATION (FT) 5971 79 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|
| NORTH 750357 | AREA SOLAR POND | CASING DIAMETER (IN) 2 ID | GEOLOGIST TSD | 38-87 |
| EAST 2085125 | LOCATOR NUMBER N10 | BOREHOLE DIAMETER (IN) 7 5 | DATE DRILLED 10/27/87 | |
| REMARKS Hollow Stem Auger | | | | |

| GRADATIONAL SAMPLE DEPTH / SAMPLE NUMBER | SAMPLE GRAIN SIZE (0% 50% 100%) | PERCENT RECOVERY (0% 100%) | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1 05 /2 | 5971<br>5970 | 0<br>1 | | | CALICHE | Very pale orange (10YR 8/2), some sand and gravel (max size approx 6 cm) trace clay and roots |
| | | | 0 8 /2 | 5969<br>5968 | 2<br>3 | | | GC | GRAVEL - matrix is grayish brown (5YR 3/2), angular to sub-angular, mod - well graded, max size = 6 cm some clay and sand, becoming calcareous at bottom of interval |
| | | | 0 95 /3 | 5967<br>5966 | 4<br>5 | 11/12/87 | | CALICHE | Very pale orange (10YR 8/2), some sand and gravel (max size approx 5 cm) trace clay |
| | | | | 5965 | 6<br>7 | | | CALICHE | Same as above, less sand and gravel, (top 10" of interval) Next 1 75 ft consists of caliche - white (N9), some clay in pockets |
| | | | 3 /3 | 5964<br>5963 | 8<br>9 | | | SILTY CLAYSTONE | Top of Bedrock<br>Lt gray and caliche - white (N9), trace FG sand, med plast becoming more clay at bottom of interval |
| | | | | 5962 | 10 | | | SILTY CLAYSTONE | Lt gray and caliche - white (N9), trace FG sand, med plast becoming more clay at bottom of interval |

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 15 2 | GROUND ELEVATION (FT) | 5971 79 | PROJECT NUMBER | 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|---|---|
| NORTH | 750357 | AREA SOLAR POND | CASING DIAMETER (IN) | 2 ID | GEOLOGIST | TSD | 38-87 |
| EAST | 2085125 | LOCATOR NUMBER M10 | BOREHOLE DIAMETER (IN) | 7 5 | DATE DRILLED | 10/27/87 | |

REMARKS Hollow Stem Auger

GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE (0% 50% 100%) | PERCENT RECOVERY (0% 100%) | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION

| Recovery/Interval | Datum (FT) | Depth (FT) | Unified Soils Classification or Rock Type | Description |
|---|---|---|---|---|
| 24/24 | 5961, 5960 | 10, 11, 12 | SILTY CLAYSTONE | Mottled lt gray (N7) and dark yellowish orange (10YR 6/6) (becomes more dk yellowish orange below top 8" of sample), mod - high plasticity, calcareous in top 8" of sample becoming slightly calcareous, trace of VFG sand and carb staining |
| 16/16 | 5959, 5958 | 13 | SILTY CLAYSTONE | Same as above (description below top 8") |
| 12/12 | 5957 | 14, 15 | SILTY CLAYSTONE | Same as above, no CaCO3 or carb staining<br>Note No water encountered during drilling |

Depth scale: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Elevation scale: 5956, 5955, 5954, 5953, 5952

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 18 | GROUND ELEVATION (FT) 5963 3 | PROJECT NUMBER 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|
| NORTH | 748102 | AREA 881 HILLSIDE | CASING DIAMETER (IN) 2 ID | GEOLOGIST TSD | 51-87 |
| EAST | 2083850 | LOCATOR NUMBER K8 | BOREHOLE DIAMETER (IN) 7 5 | DATE DRILLED 10/21/87 | |
| REMARKS Hollow Stem Auger | | | | | |

| CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 0% 50% 100% | 0% 100% | 0 15 ft | 5963 5962 | 0 1 | | | Asphalt | Asphalt |
| | | | | 0 8 ft | 5961 5960 | 2 3 | | | CL | SANDY GRAVELLY CLAY - grayish orange (10YR 7/4), mod plasticity, some calcareous material, max gravel size = 5 5 cm, trace of iron staining |
| | | | | 1 2 ft | 5959 5958 | 4 5 | | | CL | Same as above |
| | | | | 1 2 ft | 5957 5956 | 6 7 | | | CL | Same as above |
| | | | | 0 ft | 5955 5954 | 8 9 10 | | | NO SAMPLE | |

| STATE PLANE COORDINATE | | TOTAL DEPTH (FT) 18 | GROUND ELEVATION (FT) | 5963 3 | PROJECT NUMBER | 667 11 | LOG OF BORING NUMBER |
|---|---|---|---|---|---|---|---|
| NORTH | 748102 | AREA 881 HILLSIDE | CASING DIAMETER (IN) | 2 ID | GEOLOGIST | TSD | 51-87 |
| EAST | 2083850 | LOCATOR NUMBER K8 | BOREHOLE DIAMETER (IN) | 7 5 | DATE DRILLED | 10/21/87 | |
| REMARKS | Hollow Stem Auger | | | | | | |

| CHEMICAL SAMPLE DEPTH / GRADATIONAL SAMPLE DEPTH | SAMPLE NUMBER | SAMPLE GRAIN SIZE | PERCENT RECOVERY | RECOVERY/INTERVAL | DATUM (FT) | DEPTH (FT) | WELL OR PIEZOMETER CONSTRUCTION | LITHOLOGY | UNIFIED SOILS CLASSIFICATION OR ROCK TYPE | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 0/2 | 5953 | 10 | | | NO SAMPLE | |
| | | | | 0/0.5 | 5952 | 11 | 10/21/87 | | NO SAMPLE | |
| | BH62871ZC1 | | | 0.9/1.5 | 5951 | 12 | 01/11/88 | | SILTY CLAYSTONE | Top of Bedrock<br>Light brownish gray (5YR 6/1) to medium gray (N5), massive bedding? highly weathered, moderately friable, trace of iron staining |
| | BH62871ZGR | | | 2.8/2 | 5950 | 13 | 02/04/88 | | SILTY CLAYSTONE | Same as above |
| | | | | 1.7/2 | 5949 | 14 | | | SILTY CLAYSTONE | Same as above with some organic material |
| | | | | | 5948 | 15 | | | | |
| | | | | | 5947 | 16 | | | | |
| | | | | | 5946 | 17 | | | | |
| | | | | | 5945 | 18 | | | | |
| | | | | | 5944 | 19 | | | | |
| | | | | | | 20 | | | | |

# LOG OF BOREHOLE

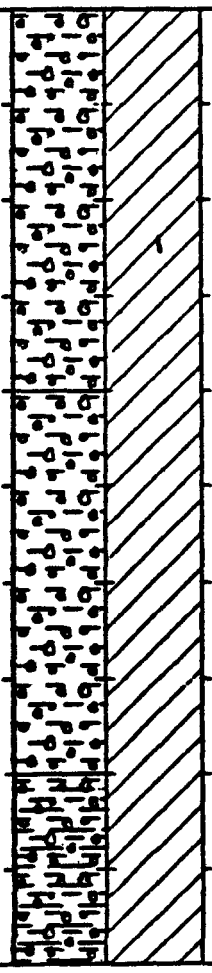
QA BY/DATE J B Burman 11-28-89
LOCATION Rocky Flats Plant, Solar Ponds Area
COORDINATES N37,212.89 E21,376.11 (RFP)
TOTAL DEPTH 10.0'

DRILLING COMPANY Boyles Brothers
DATE DRILLED June 6, 1989
DRILLING METHOD Hollow Stem Auger
LOGGED BY R A Chapuis
GEOLOGIST

BOREHOLE/WELL NO. P207489
GROUND SURFACE ELEVATION 5980.71'
WATER LEVEL ENCOUNTERED None
STATIC 5.20' (09/20/89)
DRILLER R Sharp HELPER P Mesa
DRILLING FLUID None
CHECKED BY J.B. Burman
SITE MANAGER

CEARP MANAGER

COMMENTS

| DEPTH (FT) | GRAPHIC LOG | SAMPLE TYPE | LITHOLOGIC DESCRIPTION | SAMPLES COLLECTED OR OTHER TESTS PERFORMED |
|---|---|---|---|---|
| 0<br>1<br>2<br>3<br>4<br>5 |  | | **ARTIFICIAL FILL**<br><br>0.0-2.0' SAMPLE.<br>Recovered 2.0/2.0' = 100%.<br>CLAYEY SAND AND GRAVEL: grayish orange (10 YR 7/4); lower 1.5' moderate brown (5 YR 4/4); (60%) fine to coarse-grained sand; poorly sorted; quartzose; subangular to subrounded; (25%) non to medium plastic fines; (15%) gravel; maximum size 5cm; poorly sorted; quartzose; weakly consolidated; soft; (sp-gp); damp.<br><br>**ROCKY FLATS ALLUVIUM**<br><br>2.0-4.0' SAMPLE.<br>Recovered 2.0/2.0' = 100%<br>GRAVELLY CLAY: moderate brown (5 YR 4/4); (50%) medium to highly plastic fines; (36%) gravel; subangular; quartzose; (15%) fine to coarse-grained sand; poorly sorted; subangular to subrounded; quartzose; weakly consolidated; soft to firm; (cl); dry. | HNU background = 0.0<br>OVA background = 0.0<br><br>All readings on cuttings, in breathing zone, on core, and in augers: 0.0; unless otherwise noted below.<br><br>TRIP BLANK SAMPLE<br>T8060789A<br><br>0.0-3.0' SAMPLE<br>SEP02890003<br><br>0.0-2.0' SAMPLE<br>(VOA's only)<br>SEP02890002 |

SEP02890A

WELL NO P207489

# LOG OF BOREHOLE



| DEPTH (FT) | GRAPHIC LOG | SAMPLE TYPE | LITHOLOGIC DESCRIPTION | SAMPLES COLLECTED OR OTHER TESTS PERFORMED |
|---|---|---|---|---|
| 5 | | | 4.0-6.0' SAMPLE.<br>Recovered 1.0/2.0' = 50%.<br>SILTY CLAYEY SAND AND GRAVEL: moderate brown (5 YR 4/4); (35%) gravel; poorly sorted; subangular; quartzose; maximum size 5cm; (35%) fine to coarse-grained sand; poorly sorted; subangular to subrounded; quartzose; (30%) non to medium plastic fines; soft; crumbly; (sm-gc); dry. | 5.20'<br><br>4.0-5.0' SAMPLE<br>(VOA's only)<br>SEP02890406 |
| 6 | | | 6.0-8.0' SAMPLE.<br>Recovered 2.0/2.0' = 100%.<br>6.0-6.5': SILTY CLAYEY SAND AND GRAVEL: same as above. | 5.0-6.5' SAMPLE<br>SEP02890306 |
| 7 | | | ARAPAHOE/LARAMIE FORMATION<br><br>6.5-8.0': CLAYSTONE: pale olive (10 Y 6/2); (100%) medium to highly plastic fines; soft; caliche zones to 2 cm; moldable; iron staining; damp. | 6.5-10.0' SAMPLE<br>SEP02890610 |
| 8 | | | 8.0-10.0' SAMPLE.<br>Recovered 2.0/2.0' = 100%.<br>CLAYSTONE: pale olive (10 Y 6/2); (95%) non to medium plastic fines; trace (5%) very fine-grained sand; subangular to subrounded; soft to firm; crumbly in part; caliche; iron stainings; sandier towards bottom; weakly consolidated; dry. | 8.0-10.0' SAMPLE<br>(VOA's only)<br>SEP02890810 |
| 9 | | | TOTAL DEPTH = 10.0' | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |

SEP02890

# WELL COMPLETION INFORMATION

QA By/Date Janell Bergman 16-8-89

Location Rocky Flats Plant, Solar Ponds Area

Well No. P207489

Coordinates N 37212.89 E 21376.11 (RFP)

Elevation: Ground Surface 5980.71'

Total Depth: Well 8.23'

Top of Casing 5982.64'

Borehole 10.0'

Formation of Completion Rocky Flats Alluvium

Casing Material Schedule 40 PVC

Casing Diameter 4 1/2" O.D.

Screen Material Schedule 40 10-slotted PVC

Surface Casing Diameter 8 5/8" O.D.

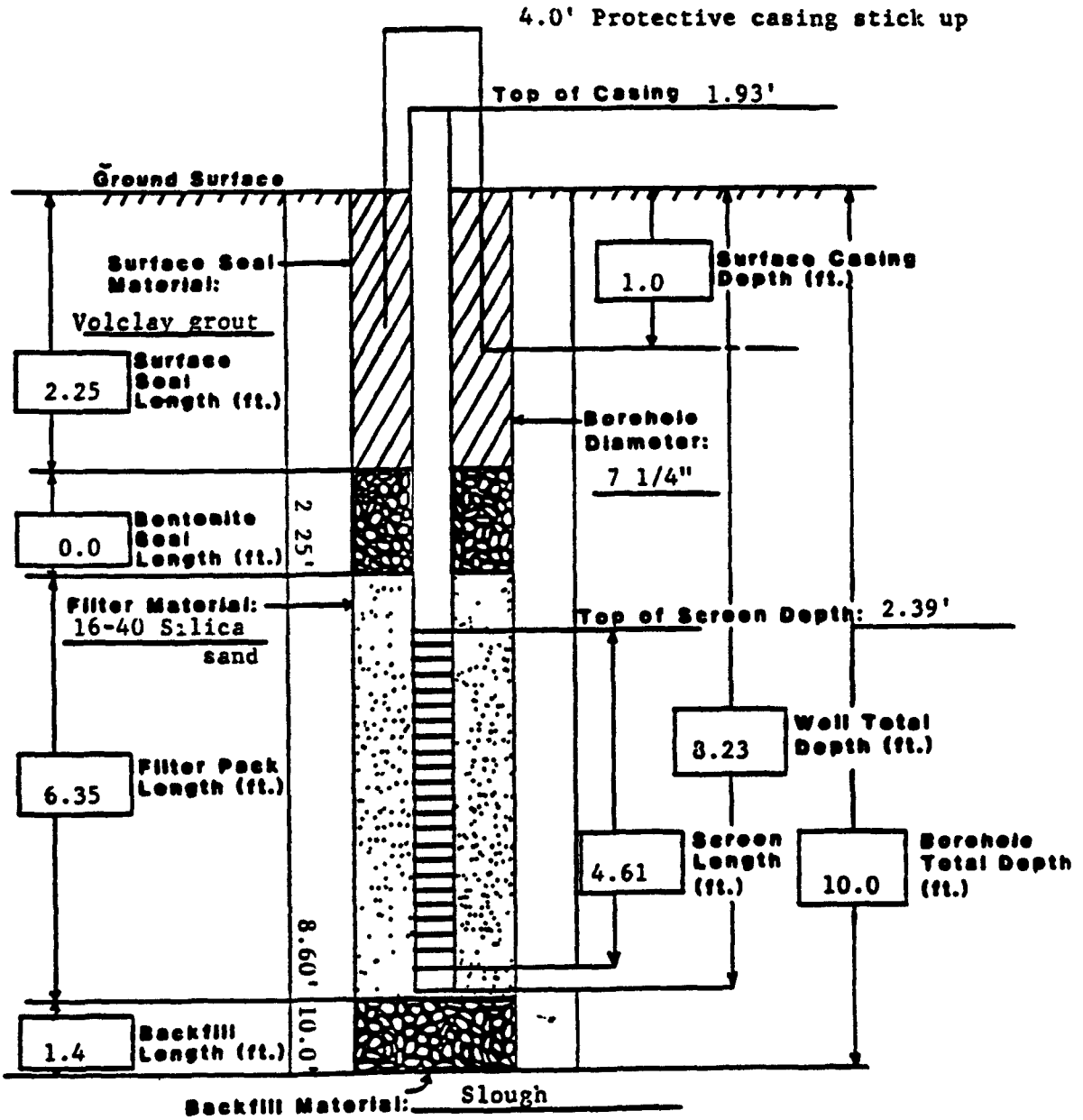
Date Installed 06/06/1989

Approved By Janell Bergman
Site Manager

Installed By R.A. Chapuis
Geologist

CEARP Manager

Comments No centralizer used.



# LOG OF BOREHOLE

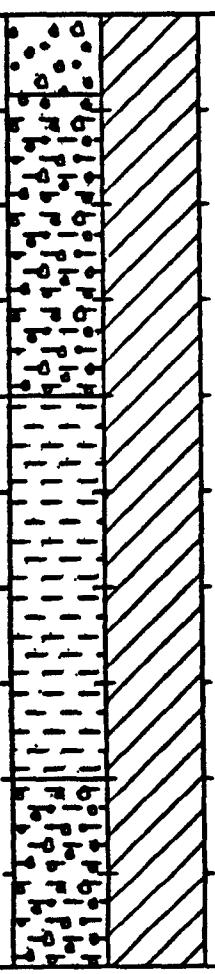
QA BY/DATE J.B. Burgman 13-12-90
LOCATION Rocky Flats Plant; Original Process Waste Lines
COORDINATES N35,543.73 E19,401.98 (RFP)
TOTAL DEPTH 33.0'

DRILLING COMPANY Boyles Brothers
DATE DRILLED December 8, 1989
DRILLING METHOD Hollow Stem Auger
LOGGED BY S.P. Carpenter
GEOLOGIST

BOREHOLE/WELL NO P419689
GROUND SURFACE ELEVATION 6022.4'
WATER LEVEL ENCOUNTERED 22.0'
STATIC 19.31' (01/18/90)
DRILLER K. Parker HELPER T. Merritt
DRILLING FLUID None
CHECKED BY J.B. Burgman
SITE MANAGER

CEARP MANAGER

COMMENTS

| DEPTH (FT) | GRAPHIC LOG | SAMPLE TYPE | LITHOLOGIC DESCRIPTION | SAMPLES COLLECTED OR OTHER TESTS PERFORMED |
|---|---|---|---|---|
| 0<br>1<br>2<br>3<br>4<br>5 |  | | **ARTIFICIAL FILL**<br><br>0.0-2.0' SAMPLE.<br>Recovered 2.0/2.0' = 100%.<br>0.0-0.4': GRAVELLY SAND: dark yellowish brown (10 YR 4/2), dusky yellowish brown (10 YR 2/2); nonstratified; fine- to very coarse-grained sand quartzose; 1 to 6 cm gravels; some clay; poor sorting; subangular; non plastic; medium dense; moist.<br><br>**ROCKY FLATS ALLUVIUM**<br><br>0.4-2.0': GRAVELLY SANDY CLAY: moderate brown (5 YR 4/4), moderate reddish brown (5 YR 4/4); fine- to very coarse-grained quartzose sand; 1 to 4 cm gravels; poor sorting; subangular, low plasticity; stiff; moist.<br><br>2.0-4.0' SAMPLE.<br>Recovered 1.4/2.0' = 70%.<br>CLAYEY SAND AND CLAY: same as above; light brown (5 YR 5/6) moderate reddish brown (10 R 4/6).<br><br>4.0-5.5' SAMPLE.<br>Recovered 1.5/1.5' = 100%.<br>GRAVELLY CLAYEY SAND: grayish orange (10 YR 7/4), yellowish gray (5 Y 7/2), pale red (5 R 6/2); fine- to very coarse-grained quartzose sand; 1 to 5 cm gravels; some silt; poorly sorted; subangular; low to no plasticity; dense; dry to damp.<br><br>Note: 5.5-6.0': Drilled with center bit. No sample taken. | NNu Background: 0.0<br><br>All NNu readings in augers, on core, and in breathing zone: 0.0.<br><br>TRIP BLANK SAMPLE<br>TB120889B<br><br>0.0-2.0' SAMPLE<br>(VOAs only)<br>P419689002<br><br>0.0-3.0' SAMPLE<br>P4196890003<br><br>2.0-3.4' SAMPLE<br>(VOAs only)<br>P4196890204<br><br>3.0-6.8' SAMPLE<br>P4196890307<br>P4196890307D<br><br>4.0-5.5' SAMPLE<br>(VOAs only)<br>P4196890406<br>P4196890406D |

10000APJ

WELL NO P419689

# LOG OF BOREHOLE



| DEPTH (FT) | GRAPHIC LOG | SAMPLE TYPE | LITHOLOGIC DESCRIPTION | SAMPLES COLLECTED OR OTHER TESTS PERFORMED |
|---|---|---|---|---|
| 5 | | | **6.0-8.0' SAMPLE.**<br>Recovered 0.8/2.0' = 40%.<br>GRAVELLY CLAYEY SAND: same as above; light brown (5 YR 5/6), dark yellowish orange (10 YR 6/6); 1 to 7 mm gravels. | **6.0-6.8'** SAMPLE<br>(VOAs only)<br>P4196890608 |
| 6 | | | **8.0-10.0' SAMPLE.**<br>Recovered 1.1/2.0' = 55%.<br>GRAVELLY CLAYEY SAND: same as above. | **8.0-9.1'** SAMPLE<br>(VOAs only)<br>P4196890810 |
| | | | **10.0-12.0' SAMPLE.**<br>Recovered 1.8/2.0' = 90%.<br>GRAVELLY CLAYEY SAND: same as above; light brown (5 YR 5/6); grayish orange (10 YR 7/4); grayish orange pink (5 YR 7/2). | **8.0-11.0'** SAMPLE<br>P4196891012 |
| 7 | | | **12.0-14.0' SAMPLE.**<br>Recovered 0.8/2.0' = 40%.<br>GRAVELLY SILTY SAND: same as above; light brown (5 YR 5/6 to 5 YR 6/4); some clay; more silt. | **10.0-11.8'** SAMPLE<br>(VOAs only)<br>P4196891012 |
| 8 | | | | **11.0-15.0'** SAMPLE<br>P4196891115 |
| | | | | **12.0-12.8** SAMPLE<br>(VOAs only)<br>P4196891214 |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |

WELL NO P419689

# LOG OF BOREHOLE



| DEPTH (FT) | GRAPHIC LOG | SAMPLE TYPE | LITHOLOGIC DESCRIPTION | SAMPLES COLLECTED OR OTHER TESTS PERFORMED |
|---|---|---|---|---|
| 13 | | | <u>14.0-16.0' SAMPLE.</u><br>Recovered 1.4/2.0' = 70%.<br>14.0-14.3': CLAYEY SAND: light brown (5 YR 5/6); nonstratified; fine- to coarse-grained quartzose sand; moderate sorting; rounded to subrounded; low plasticity; medium dense; moist.<br>14.3-15.4': GRAVELLY SILTY SAND: same as 12.0-12.8'; light brown (5 YR 5/6 to 5 YR 6/4), grayish red (10 R 4/2). | <u>14.0-15.4'</u> SAMPLE<br>(VOAs only)<br>P4196891416<br><br><u>15.0-18.4'</u> SAMPLE<br>P4196891518 |
| 14 | | | <u>16.0-18.0' SAMPLE.</u><br>Recovered 1.3/2.0' = 65%.<br>GRAVELLY SILTY SAND: same as above. | <u>16.0-17.3'</u> SAMPLE<br>(VOAs only)<br>P4196891618 |
| 15 | | | <u>18.0-20.0' SAMPLE.</u><br>Recovered 2.0/2.0' = 100%.<br>18.0-18.4': SILTY SANDY CLAY: light brown (5 YR 5/6), pale red (10 R 6/2), yellowish gray (5 Y 7/2); nonstratified; mottled; fine- to medium-grained sand; trace gravel; claystone inclusions; medium to low plasticity; manganese staining; very stiff to stiff; damp.<br>18.4-20.0': CLAY: light olive gray (5 Y 6/1), yellowish gray (5 Y 7/2), stained light brown (5 YR 5/6), grayish red (10 R 4/2); nonstratified; trace fine-grained sand; trace silt; high to medium plasticity; reworked claystone; iron staining; trace manganese; trace gypsum; hard; damp to moist. | <u>18.0-20.0'</u> SAMPLE<br>(VOAs only)<br>P4196891820<br><br><u>18.4-22.0'</u> SAMPLE<br>P4196891822<br><br><u>20.0-22.0'</u> SAMPLE<br>(VOAs only)<br>P4196892022 |
| 16 | | | | |
| 17 | | | <u>20.0-22.0' SAMPLE.</u><br>Recovered 2.0/2.0' = 100%.<br>20.0-21.0': CLAY: same as above.<br>21.0-22.0': GRAVELLY SANDY CLAY: pale red (10 R 6/2), light brown (5 YR 5/6), dark yellowish orange (10 YR 6/6); nonstratified; fine- to very coarse-grained sand; 1 to 5 cm gravels; poor sorting; subround; quartzose; low to medium plasticity; very stiff; damp. | |
| 18 | | | | |
| 19 | | | | ▼ 19.31' |
| 20 | | | | |
| 21 | | | | |

WELL NO. P419689

# LOG OF BOREHOLE



| DEPTH (FT) | GRAPHIC LOG | SAMPLE TYPE | LITHOLOGIC DESCRIPTION | SAMPLES COLLECTED OR OTHER TESTS PERFORMED |
|---|---|---|---|---|
| 21<br>22<br>23<br>24<br>25<br>26<br>27<br>28<br>29 | | | **22.0-24.0' SAMPLE.**<br>Recovered 2.9/2.0' = 100%.<br>22.0-23.0': SILTY SAND: light brown (5 YR 5/6), dark yellowish orange (10 YR 6/6); medium- to coarse-grained quartzose sand; trace very fine gravels; moderate sorting; rounded to subrounded; low to non plastic; wet.<br><br>**ARAPAHOE/LARAMIE FORMATION**<br><br>23.0-24.0': SILTY CLAYSTONE: dusky yellow (5 Y 6/4), yellowish gray (5 Y 7/2), blocky to platy; nonstratified, low to medium plasticity; weathered; scattered iron staining; firm; damp.<br><br>**24.0-26.0' SAMPLE.**<br>Recovered 0.4/2.0' = 20%.<br>SILTY CLAYSTONE: same as above; yellowish gray (5 Y 7/2).<br><br>**26.0-28.0' SAMPLE.**<br>Recovered 2.0/2.0' = 100%.<br>SILTY CLAYSTONE: same as above; light olive gray (5 Y 5/2), yellowish gray (5 Y 7/2); medium plasticity; medium to hard.<br><br>**28.0-30.0' SAMPLE.**<br>Recovered 2.0/2.0' = 100%.<br>28.0-29.4': SILTY CLAYSTONE: same as above; light olive gray (5 Y 5/2), dusky yellow (5 Y 6/4); decreasing silt with depth.<br>29.4-30.0': CLAYSTONE: olive gray (5 Y 4/1); blocky; nonstratified; trace to some silt; medium to high plasticity; weathered; iron and manganese staining; hard. | **22.0-23.0' SAMPLE**<br>P4196892223<br><br>▽ 22.0'<br><br>**22.0-24.0' SAMPLE**<br>(VOAs only)<br>P4196892224<br><br>**23.0-24.4' SAMPLE**<br>P4196892326<br><br>**24.0-24.4' SAMPLE**<br>(VOAs only)<br>P4196892426<br><br>**FIELD BLANK SAMPLE**<br>P4196890026FB |

WELL NO. P419689

# LOG OF BOREHOLE



| DEPTH (FT) | GRAPHIC LOG | SAMPLE TYPE | LITHOLOGIC DESCRIPTION | SAMPLES COLLECTED OR OTHER TESTS PERFORMED |
|---|---|---|---|---|
| 29 | | | **30.0-32.0' SAMPLE.**<br>Recovered 2.0/2.0 = 100%.<br>CLAYSTONE: same as above; medium grey (N 5/0), banded dusky yellow (5 Y 6/4); some silt to silty; decreasing silt with depth; scattered iron staining. | |
| 30 | | | **32.0-33.0' SAMPLE.**<br>Recovered 1.0/1.0' = 100%.<br>CLAYSTONE: same as above; light olive grey (5 Y 6/1 to 5 Y 5/2); some silt to silty; increasing silt with depth. | |
| 31 | | | **TOTAL DEPTH 33.0'** | |
| 32 | | | | |
| 33 | | | | |
| 34 | | | | |
| 35 | | | | |
| 36 | | | | |
| 37 | | | | |

# WELL COMPLETION INFORMATION

QA By/Date J.B. Burman 12-29-89

Location Rocky Flats Plant: Original Process Waste Lines

Well No. P419689

Coordinates N 35543.73 E 19401.98 (RFP)

Elevation: Ground Surface 6022.4'

Total Depth: Well 24.77'

Top of Casing 6023.42'

Borehole 33.0'

Formation of Completion Rocky Flats Alluvium

Casing Material Schedule 40 PVC

Casing Diameter 2 3/8" O.D.

Screen Material Schedule 40 10-slotted PVC

Surface Casing Diameter 5 5/8" O.D

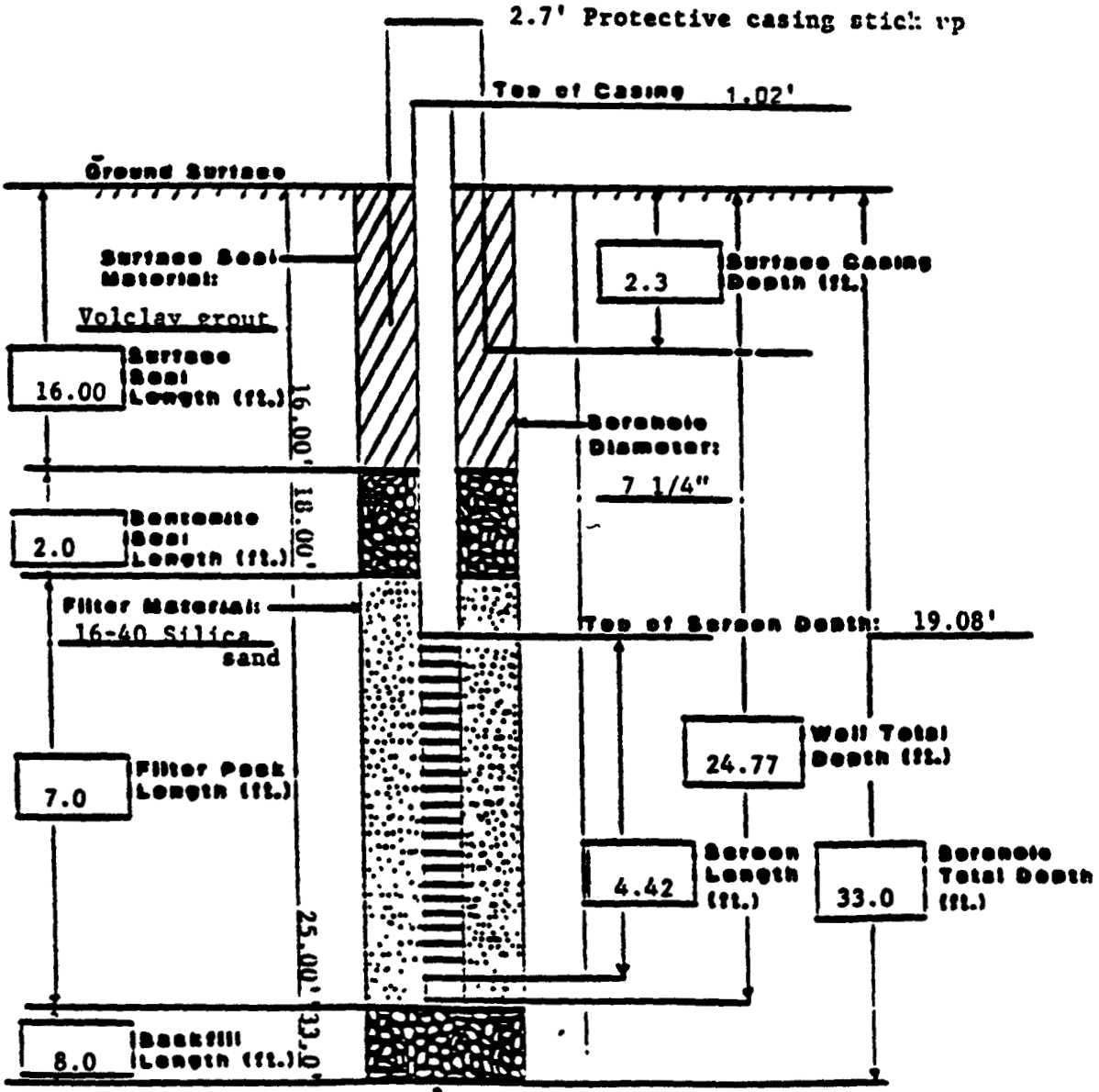
Date Installed 12/08/1989

Approved By J.B. Burman
Site Manager

Installed By S.P. Carpenter
Geologist

CERP Manager

Comments Set stainless steel centralizer from 24.77' to 23.55' below ground surface




Backfill Material: 1/4" Volclay bentonite pellets and slough