# Appendix C

# Contaminant Screening and Summary Statistics Tables

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**Table C-1. Supplemental contaminant screening for OU 4-02, CFA-13: Dry Well (South of CFA-640)**

| | | | Step 1 | | | Step 2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Chemical | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the maximum concentration greater than RBC? | Site COPC? |
| 1,1,2-Trichloro-1,2,2-Trifluoroethan | mg/kg | 0.005 | -- | | -- | 1.00E+06 | [b] | NO | NO |
| 2,4,5-T | mg/kg | 0.1 | -- | | -- | 780 | [b] | NO | NO |
| Aluminum | mg/kg | 6,450 | 24,000 | [a] | NO | 78,000 | [b] | NO | NO |
| Antimony | mg/kg | 15.3 | 7.4 | [a] | YES | 31 | [b] | NO | NO |
| Aroclor-1254 | mg/kg | 10 | -- | | -- | 0.32 | [b] | YES | YES |
| Arsenic | mg/kg | 10.9 | 7.4 | [a] | YES | 0.43 | [b] | YES | NO [d] |
| Barium | mg/kg | 153 | 440 | [a] | NO | 5,500 | [b] | NO | NO |
| Benzo(a)anthracene | mg/kg | 9 | -- | | -- | 0.88 | [b] | YES | YES |
| Benzo(b)fluoranthene | mg/kg | 4.2 | -- | | -- | 0.88 | [b] | YES | YES |
| Benzo(g,h,i)perylene | mg/kg | 5.1 | -- | | -- | -- | | -- | YES |
| Benzo(k)fluoranthene | mg/kg | 3.2 | -- | | -- | 8,077 | [e] | NO | NO |
| Beryllium | mg/kg | 0.47 | 3.0 | [a] | NO | 0.15 | [b] | YES | NO |
| Cadmium | mg/kg | 7.37 | 3.7 | [a] | YES | 135 | [e] | NO | NO |
| Calcium | mg/kg | 67,700 | 39,000 | [a] | YES | -- | | -- | NO [f] |
| Chromium | mg/kg | 267 | 50 | [a] | YES | 390 | [b][1] | NO | NO |
| Chrysene | mg/kg | 7.9 | -- | | -- | 88 | [b] | NO | NO |
| Cobalt | mg/kg | 6.09 | 18 | [a] | NO | 4,700 | [b] | NO | NO |
| Copper | mg/kg | 1,900 | 32 | [a] | YES | 2.70E+05 | [b] | NO | NO |
| Indeno(1,2,3-cd)pyrene | mg/kg | 4.6 | -- | | -- | 8.77 | [e] | NO | NO |
| Iron | mg/kg | 14,200 | 35,000 | [a] | NO | 23,000 | [b] | NO | NO |
| Lead | mg/kg | 725 | 23 | [a] | YES | 400 | [g] | YES | YES |
| Magnesium | mg/kg | 12,700 | 19,000 | [a] | NO | -- | | -- | NO |
| Manganese | mg/kg | 284 | 700 | [a] | NO | 1,800 | [b] | NO | NO |
| Mercury | mg/kg | 1.97 | 0.074 | [a] | YES | 23 | [b] | NO | NO |
| Nickel | mg/kg | 85.1 | 55 | [a] | YES | 1,600 | [b] | NO | NO |
| Potassium | mg/kg | 1,190 | 6,300 | [a] | NO | -- | | -- | NO |
| Pyrene | mg/kg | 24 | -- | | -- | 2,300 | [b] | NO | NO |
| Selenium | mg/kg | 0.58 | 0.3 | [a] | YES | 1,300 | [e] | NO | NO |
| Silver | mg/kg | 19.4 | -- | | -- | 390 | [b] | NO | NO |
| Sodium | mg/kg | 422 | 520 | [a] | NO | -- | | -- | NO |
| Thallium | mg/kg | 0.26 | 0.68 | [a] | NO | -- | | -- | NO |
| Toluene | mg/kg | 0.004 | -- | | -- | 16,000 | [b] | NO | NO |
| Total HXCDD | mg/kg | 0.005 | -- | | -- | -- | | -- | NO [h] |
| Total HXCDF | mg/kg | 0.0093 | -- | | -- | -- | | -- | NO [h] |
| Total PECDF | mg/kg | 0.0004 | -- | | -- | -- | | -- | NO [h] |
| Trichloroethene | mg/kg | 0.21 | -- | | -- | 58 | [b] | NO | NO |
| Vanadium | mg/kg | 19.4 | 70 | [a] | NO | 550 | [b] | NO | NO |
| Xylene (total) | mg/kg | 0.002 | -- | 2 | -- | 1.60E+05 | [b] | NO | NO |
| Zinc | mg/kg | 302 | 220 | [a] | YES | 23,000 | [b] | NO | NO |
| Am-241 | pCi/g | 9.397 | 0.019 | [a] | YES | 2.9 | [i] | YES | YES |
| Co-60 | pCi/g | 0.0799 | -- | | -- | 7,400 | [i] | NO | NO |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Cs-137 | pCi/g | 0.988 | 1.28 | [a] | NO | 0.23 | [i] | YES | NO |
| Eu-155 | pCi/g | 0.167 | -- | | -- | 2.90E+06 | [i] | NO | NO |
| Pu-239 | pCi/g | 0.00454 | 0.19 | [a] | NO | 2.5 | [i] | NO | NO |
| Ra-226 | pCi/g | 3.37 | -- | | -- | 5.50E-03 | [i] | YES | YES |
| Sr-90 | pCi/g | 0.199 | 0.76 | [a] | NO | 230 | [i] | NO | NO |
| U-234 | pCi/g | 2.34 | 1.95 | [a] | YES | 18 | [i] | NO | NO |
| U-235 | pCi/g | 0.552 | -- | | -- | 0.13 | [i] | YES | YES |
| U-238 | pCi/g | 2.53 | 1.85 | [a] | YES | 0.67 | [i] | YES | YES |
| Zr-95 | pCi/g | 0.153 | -- | | -- | -- | | -- | YES |

**Notes:**

-- = Screening concentration is not available for this chemical.

[1] Value shown represents the RBC for Chromium VI

**Reference:**


[a] Rood, S.M., G.A. Harris, and G.J. White. 1995. Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide Concentration at the Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[b] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvania. October 22.

[c] Toxic Substance Control Act (TSCA). Cleanup of PCB Spills. Federal Register, 7 Feb. 1978, 43 FR 7150 and 31 May 1979, 44 FR 31514.

[d] Detected concentrations of arsenic are not source related and are assumed to be within the range of background concentrations for INEEL soils. Arsenic is therefore eliminated as a COPC.

[e] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment III, Idaho Falls, ID.

[f] Maximum detected concentrations of essential nutrient is less than ten time the background concentration. Therefore, the COPC is eliminated.

[g] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.

[h] Dioxin Toxicity Equivalency Factor (TEF) for this chemical is 0 according to U.S. Environmental Protection Agency's (USEPA) *1994 Estimating Exposure to Dioxin-Like Compounds, Volume I: Executive Summary,* Office of Research and Development, Washington, D.C. EPA/600/6-88/005Ca. June. Therefore, this chemical has a negligible toxicity value and is not considered a COPC.

[i] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.

**Table C-2.** Summary Statistics for CFA-13

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Log 95 U |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,1,1-Trichloroethane | mg/kg | 10 | 0 | 0.0% | | | | | | | |
| 1,1,2,2-Tetrachloroethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | mg/kg | 10 | 6 | 60.0% | 0.001 | | 0.005 | | 4.95E-03 | 2.42E-03 | 9.0 |
| 1,1,2-Trichloroethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,1-Dichloroethane | mg/kg | 10 | 0 | 0.0% | | | | | | | |
| 1,1-Dichloroethene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,2,3-Trichloropropane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,2-Dibromo-3-chloropropane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,2-Dibromoethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,2-Dichloroethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,2-Dichloropropane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,3,7,8-TCDD(dioxin) | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4'-DDD | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4'-DDT | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4,5-T | mg/kg | 2 | 1 | 50.0% | 0.1 | | 0.1 | | 5.28E-02 | 6.68E-02 | |
| 2,4,5-TP (Silvex) | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4-D | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2-4'-DDE | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2-Butanone | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2-Chloroethylvinyl ether | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4,4'-DDD | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 4,4'-DDE | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 4,4'-DDT | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 4-Methyl-2-Pentanone | mg/kg | 10 | 0 | 0.0% | | | | | | | |
| Acenaphthene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Acenaphthylene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Acetone | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Acetonitrile | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Acrolein | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Acrylamide | mg/kg | 1 | 0 | 0.0% | | | | | | | |
| Acrylonitrile | mg/kg | 10 | 0 | 0.0% | | | | | | | |
| Aldrin | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Allyl Chloride | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Alpha-BHC | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aluminum | mg/kg | 6 | 6 | 100.0% | 2,140 | | 6,450 | | 4.25E+03 | 1.62E+03 | 6.7 |
| Amenable Cyanide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Anthracene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Antimony | mg/kg | 6 | 1 | 16.7% | 15.3 | | 15.3 | | 6.15E+00 | 4.50E+00 | 1.1 |
| Aroclor-1016 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1221 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1232 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1242 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1248 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1254 | mg/kg | 2 | 1 | 50.0% | 10 | | 10 | | 5.01E+00 | 7.06E+00 | |

**Table C-2.** Summary Statistics for CFA-13

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Log 95 U |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Arsenic | mg/kg | 10 | 6 | 60.0% | 2.89 | | 10.9 | | 4.94E+00 | 2.45E+00 | 6.6 |
| Barium | mg/kg | 6 | 6 | 100.0% | 79.6 | | 153 | | 1.21E+02 | 2.44E+01 | 1.5 |
| Benzene | mg/kg | 10 | 0 | 0.0% | | | | | | | |
| Benzo(a)anthracene | mg/kg | 6 | 1 | 16.7% | 9 | | 9 | | 1.54E+00 | 3.66E+00 | 6.3 |
| Benzo(a)pyrene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Benzo(b)fluoranthene | mg/kg | 6 | 1 | 16.7% | 4.2 | | 4.2 | | 7.73E-01 | 1.68E+00 | 1.5 |
| Benzo(g,h,i)perylene | mg/kg | 6 | 1 | 16.7% | 5.1 | | 5.1 | | 9.26E-01 | 2.04E+00 | 1.7 |
| Benzo(k)fluoranthene | mg/kg | 6 | 1 | 16.7% | 3.2 | | 3.2 | | 5.70E-01 | 1.29E+00 | 7.9 |
| Beryllium | mg/kg | 6 | 3 | 50.0% | 0.43 | | 0.47 | | 3.13E-01 | 1.43E-01 | 5.0 |
| Beta-BHC | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Bromodichloromethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Bromoform | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Bromomethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Cadmium | mg/kg | 6 | 4 | 66.7% | 0.46 | | 7.37 | | 1.92E+00 | 2.84E+00 | 9.2 |
| Calcium | mg/kg | 6 | 6 | 100.0% | 2,860 | | 67,700 | | 2.60E+04 | 2.25E+04 | 2.4 |
| Carbon Disulfide | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Carbon Tetrachloride | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Chlorobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Chloroethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Chloroform | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Chloromethane | mg/kg | 10 | 0 | 0.0% | | | | | | | |
| Chloroprene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Chromium | mg/kg | 10 | 10 | 100.0% | 9.89 | | 267 | | 5.03E+01 | 8.71E+01 | 1.7 |
| Chrysene | mg/kg | 6 | 1 | 16.7% | 7.9 | | 7.9 | | 1.36E+00 | 3.20E+00 | 1.2 |
| Cobalt | mg/kg | 6 | 6 | 100.0% | 3.59 | | 6.09 | | 4.85E+00 | 1.05E+00 | 6.0 |
| Copper | mg/kg | 6 | 6 | 100.0% | 12.1 | | 1,900 | | 4.27E+02 | 7.59E+02 | 4.4 |
| Delta-BHC | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Dibenz(a,h)anthracene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Dibenzo[a,e]pyrene | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Dibromochloromethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Dibromomethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Dichlorodifluoromethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Dieldrin | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Diethyl ether | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Disulfoton | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endosulfan I | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endosulfan II | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endosulfan sulfate | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endrin | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endrin aldehyde | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endrin ketone | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Ethyl Acetate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Ethylbenzene | mg/kg | 10 | 0 | 0.0% | | | | | | | |
| Ethylcyanide | mg/kg | 6 | 0 | 0.0% | | | | | | | |

**Table C-2.** Summary Statistics for CFA-13

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Log 95 U |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene Oxide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Famphur | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Fluoranthene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Fluorene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Heptachlor | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Heptachlor epoxide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg | 6 | 1 | 16.7% | 4.6 | | 4.6 | | 8.05E-01 | 1.86E+00 | 5.4 |
| Iron | mg/kg | 6 | 6 | 100.0% | 8,240 | | 14,200 | | 1.18E+04 | 2.01E+03 | 1.4 |
| Isodrin | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Kepone | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Lead | mg/kg | 10 | 10 | 100.0% | 6.8 | | 725 | | 1.14E+02 | 2.39E+02 | 1.2 |
| Magnesium | mg/kg | 6 | 6 | 100.0% | 899 | | 12,700 | | 5.15E+03 | 4.06E+03 | 2.4 |
| Manganese | mg/kg | 6 | 6 | 100.0% | 47.4 | | 284 | | 1.81E+02 | 9.49E+01 | 5.0 |
| Mercury | mg/kg | 6 | 2 | 33.3% | 1.29 | | 1.97 | | 5.75E-01 | 8.45E-01 | 2.5 |
| Methacrylonitrile | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Methoxychlor | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Methyl parathion | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Methyl t-Butyl Ether | mg/kg | 4 | 0 | 0.0% | | | | | | | |
| Methylene Chloride | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Naphthalene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Nickel | mg/kg | 6 | 6 | 100.0% | 14.5 | | 85.1 | | 3.28E+01 | 2.70E+01 | 8.2 |
| Parathion | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Phenanthrene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Phorate | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Potassium | mg/kg | 6 | 6 | 100.0% | 484 | | 1,190 | | 7.91E+02 | 2.75E+02 | 1.1 |
| Propionitrile | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Pyrene | mg/kg | 6 | 1 | 16.7% | 24 | | 24 | | 4.05E+00 | 9.77E+00 | 9.7 |
| Selenium | mg/kg | 6 | 2 | 33.3% | 0.24 | | 0.58 | | 2.13E-01 | 1.87E-01 | 5.4 |
| Silver | mg/kg | 10 | 2 | 20.0% | 11 | | 19.4 | | 3.22E+00 | 6.62E+00 | 4.4 |
| Sodium | mg/kg | 6 | 6 | 100.0% | 96 | | 422 | | 2.94E+02 | 1.08E+02 | 5.7 |
| Tetrachloroethene | mg/kg | 10 | 0 | 0.0% | | | | | | | |
| Thallium | mg/kg | 6 | 1 | 16.7% | 0.26 | | 0.26 | | 1.39E-01 | 5.95E-02 | 1.9 |
| Toluene | mg/kg | 10 | 2 | 20.0% | 0.002 | | 0.004 | | 2.80E-03 | 5.37E-04 | 3.1 |
| Total Cyanide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Total HXCDD | mg/kg | 2 | 1 | 50.0% | 0.005 | | 0.005 | | 2.58E-03 | 3.42E-03 | |
| Total HXCDF | mg/kg | 2 | 1 | 50.0% | 0.0093 | | 0.0093 | | 4.73E-03 | 6.47E-03 | |
| Total PECDD | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Total PECDF | mg/kg | 2 | 1 | 50.0% | 0.0004 | | 0.0004 | | 2.48E-04 | 2.16E-04 | |
| Total TCDD | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Total TCDF | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Toxaphene | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Trichloroethene | mg/kg | 10 | 2 | 20.0% | 0.15 | | 0.21 | | 3.82E-02 | 7.61E-02 | 5.0 |
| Trichlorofluoromethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Vanadium | mg/kg | 6 | 6 | 100.0% | 9.64 | | 19.4 | | 1.58E+01 | 3.62E+00 | 2.0 |
| Vinyl Chloride | mg/kg | 6 | 0 | 0.0% | | | | | | | |

**Table C-2.** Summary Statistics for CFA-13

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Log 95 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Xylene (total) | mg/kg | 10 | 1 | 10.0% | 0.002 | | 0.002 | | 2.85E-03 | 6.69E-04 | 3.2 |
| Zinc | mg/kg | 6 | 6 | 100.0% | 40.7 | | 302 | | 1.10E+02 | 1.01E+02 | 3.6 |
| alpha-Chlordane | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| cis-1,3-Dichloropropene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| gamma-BHC (Lindane) | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| gamma-Chlordane | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| trans-1,2-Dichloroethene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| trans-1,3-Dichloropropene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Ag-108m | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Ag-110m | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Am-241 | pCi/g | 14 | 4 | 28.6% | 0.0207 | 0.01 | 9.397 | 0.01 | 6.62E-01 | 2.51E+00 | 2.9 |
| Ce-144 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Co-58 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Co-60 | pCi/g | 7 | 1 | 14.3% | 0.0799 | 0.03 | 0.0799 | 0.03 | 2.30E-02 | 3.25E-02 | 5.5 |
| Cs-134 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Cs-137 | pCi/g | 7 | 2 | 28.6% | 0.198 | 0.06 | 0.988 | 0.11 | 1.61E-01 | 3.73E-01 | 2.6 |
| Eu-152 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Eu-154 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Eu-155 | pCi/g | 7 | 1 | 14.3% | 0.167 | 0.07 | 0.167 | 0.07 | -3.01E-03 | 8.39E-02 | 2.7 |
| Mn-54 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Nb-95 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Pu-238 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Pu-239 | pCi/g | 7 | 1 | 14.3% | 0.00454 | 0 | 0.00454 | 0 | 1.18E-03 | 3.20E-03 | 4.8 |
| Ra-226 | pCi/g | 7 | 6 | 85.7% | 1.38 | 0.59 | 3.37 | 1.05 | 2.06E+00 | 8.20E-01 | 3.0 |
| Ru-103 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Ru-106 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Sb-125 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Sr-90 | pCi/g | 7 | 1 | 14.3% | 0.199 | 0.06 | 0.199 | 0.06 | 1.91E-02 | 8.30E-02 | 1.6 |
| U-234 | pCi/g | 7 | 7 | 100.0% | 0.746 | 0.06 | 2.34 | 0.15 | 1.08E+00 | 5.83E-01 | 1.6 |
| U-235 | pCi/g | 14 | 9 | 64.3% | 0.0356 | 0.01 | 0.552 | 0.18 | 7.17E-02 | 1.55E-01 | 1.5 |
| U-238 | pCi/g | 7 | 7 | 100.0% | 0.753 | 0.06 | 2.53 | 0.17 | 1.12E+00 | 6.55E-01 | 1.7 |
| Zn-65 | pCi/g | 7 | 0 | 0.0% | | | | | | | |
| Zr-95 | pCi/g | 7 | 1 | 14.3% | 0.153 | 0.07 | 0.153 | 0.07 | 1.31E-02 | 7.65E-02 | 5.1 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

-- – Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-3.** Summary Statistics for CFA-13 (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|
| Benzo(a)anthracene | mg/kg | 0-0.5 | NS | | | | | | |
| Benzo(b)fluoranthene | mg/kg | 0-0.5 | NS | | | | | | |
| Benzo(g,h,i)perylene | mg/kg | 0-0.5 | NS | | | | | | |
| Lead | mg/kg | 0-0.5 | NS | | | | | | |
| Am-241 | pCi/g | 0-0.5 | NS | | | | | | |
| Ra-226 | pCi/g | 0-0.5 | NS | | | | | | |
| U-235 | pCi/g | 0-0.5 | NS | | | | | | |
| U-238 | pCi/g | 0-0.5 | NS | | | | | | |
| Zr-95 | pCi/g | 0-0.5 | NS | | | | | | |
| Benzo(a)anthracene | mg/kg | 0.5-4 | 3 | 1 | 33.3% | 9 | 9 | 3.04E+00 | 5.16E+00 |
| Benzo(b)fluoranthene | mg/kg | 0.5-4 | 3 | 1 | 33.3% | 4.2 | 4.2 | 1.47E+00 | 2.36E+00 |
| Benzo(g,h,i)perylene | mg/kg | 0.5-4 | 3 | 1 | 33.3% | 5.1 | 5.1 | 1.77E+00 | 2.88E+00 |
| Lead | mg/kg | 0.5-4 | 5 | 5 | 100.0% | 8.43 | 725 | 2.19E+02 | 3.18E+02 |
| Am-241 | pCi/g | 0.5-4 | 6 | 2 | 33.3% | 0.0207 | 0.0578 | -4.08E-03 | 5.39E-02 |
| Ra-226 | pCi/g | 0.5-4 | 3 | 2 | 66.7% | 1.85 | 2.62 | 1.87E+00 | 7.35E-01 |
| U-235 | pCi/g | 0.5-4 | 6 | 4 | 66.7% | 0.0421 | 0.552 | 1.28E-01 | 2.17E-01 |
| U-238 | pCi/g | 0.5-4 | 3 | 3 | 100.0% | 0.78 | 2.53 | 1.54E+00 | 8.96E-01 |
| Zr-95 | pCi/g | 0.5-4 | 3 | 1 | 33.3% | 0.153 | 0.153 | 5.89E-02 | 8.60E-02 |
| Benzo(a)anthracene | mg/kg | 4-10 | 3 | 0 | 0.0% | | | | |
| Benzo(b)fluoranthene | mg/kg | 4-10 | 3 | 0 | 0.0% | | | | |
| Benzo(g,h,i)perylene | mg/kg | 4-10 | 3 | 0 | 0.0% | | | | |
| Lead | mg/kg | 4-10 | 4 | 4 | 100.0% | 6.8 | 11.5 | 9.38E+00 | 1.95E+00 |
| Am-241 | pCi/g | 4-10 | 6 | 1 | 16.7% | 0.0241 | 0.0241 | 6.54E-04 | 6.52E-02 |
| Ra-226 | pCi/g | 4-10 | 3 | 3 | 100.0% | 1.46 | 3.37 | 2.48E+00 | 9.62E-01 |
| U-235 | pCi/g | 4-10 | 6 | 4 | 66.7% | 0.0356 | 0.179 | 3.83E-02 | 7.99E-02 |
| U-238 | pCi/g | 4-10 | 3 | 3 | 100.0% | 0.753 | 0.871 | 8.08E-01 | 5.94E-02 |
| Zr-95 | pCi/g | 4-10 | 3 | 0 | 0.0% | | | | |
| Benzo(a)anthracene | mg/kg | >10 | NS | | | | | | |
| Benzo(b)fluoranthene | mg/kg | >10 | NS | | | | | | |
| Benzo(g,h,i)perylene | mg/kg | >10 | NS | | | | | | |
| Lead | mg/kg | >10 | 1 | 1 | 100.0% | 7.08 | 7.08 | 7.08E+00 | 0.00E+00 |
| Am-241 | pCi/g | >10 | 2 | 1 | 50.0% | 9.397 | 9.397 | 4.65E+00 | 6.72E+00 |
| Ra-226 | pCi/g | >10 | 1 | 1 | 100.0% | 1.38 | 1.38 | 1.38E+00 | 0.00E+00 |
| U-235 | pCi/g | >10 | 2 | 1 | 50.0% | 0.0688 | 0.0688 | 2.90E-03 | 9.32E-02 |
| U-238 | pCi/g | >10 | 1 | 1 | 100.0% | 0.753 | 0.753 | 7.53E-01 | 0.00E+00 |
| Zr-95 | pCi/g | >10 | 1 | 0 | 0.0% | | | | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

NS = Not sampled.

**Table C-4. Supplemental contaminant screening for OU 4-02, CFA-15: Dry Well (CFA-674)**

| | | | Step 1 | | | Step 2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Chemical | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the maximum concentration greater than RBC? | Site COPC? |
| Aluminum | mg/kg | 15,600 | 24000 | [a] | NO | 78,000 | [b] | NO | NO |
| Arsenic | mg/kg | 5.57 | 7.4 | [a] | NO | 0.43 | [b] | YES | NO |
| Barium | mg/kg | 269 | 440 | [a] | NO | 5,500 | [b] | NO | NO |
| Calcium | mg/kg | 59,600 | 39000 | [a] | YES | – | | – | NO[e] |
| Chromium | mg/kg | 22 | 50 | [a] | NO | 390 | [b] | NO | NO |
| Copper | mg/kg | 25 | 32 | [a] | NO | 270,000 | [b] | NO | NO |
| Fluoranthene | mg/kg | 0.038 | – | | – | 3,100 | [b] | NO | NO |
| Iron | mg/kg | 22,600 | 35000 | [a] | NO | 23,000 | [b] | NO | NO |
| Lead | mg/kg | 18.9 | 23 | [a] | NO | 400 | [c] | NO | NO |
| Magnesium | mg/kg | 10,400 | 19000 | [a] | NO | – | | – | NO |
| Manganese | mg/kg | 431 | 700 | [a] | NO | 1,800 | [b] | NO | NO |
| Mercury | mg/kg | 0.42 | 0.074 | [a] | YES | 23 | [b] | NO | NO |
| Nickel | mg/kg | 25.4 | 55 | [a] | NO | 1,600 | [b] | NO | NO |
| Potassium | mg/kg | 2,230 | 6300 | [a] | NO | – | | – | NO |
| Pyrene | mg/kg | 0.059 | – | | – | 2,300 | [b] | NO | NO |
| Silver | mg/kg | 0.42 | – | | – | 390 | [b] | NO | NO |
| Sodium | mg/kg | 554 | 520 | [a] | YES | – | | – | NO[e] |
| Thallium | mg/kg | 0.2 | 0.68 | [a] | NO | – | | – | NO |
| Vanadium | mg/kg | 30.3 | 70 | [a] | NO | 550 | [b] | NO | NO |
| Zinc | mg/kg | 79.6 | 220 | [a] | NO | 23,000 | [b] | NO | NO |
| Am-241 | pCi/g | 0.0138 | 0.019 | [a] | NO | 2.9 | [d] | NO | NO |
| Eu-155 | pCi/g | 0.168 | – | | – | 2,900,000 | [d] | NO | NO |
| Ra-226 | pCi/g | 2.54 | – | | – | 0.0055 | [d] | YES | YES |
| Ru-106 | pCi/g | 0.565 | – | | – | 6.9.E+29 | [d] | NO | NO |
| Sr-90 | pCi/g | 0.166 | 0.76 | [a] | NO | 230 | [d] | NO | NO |
| U-234 | pCi/g | 1.01 | 1.95 | [a] | NO | 18 | [d] | NO | NO |
| U-235 | pCi/g | 0.0631 | – | | – | 0.13 | [d] | NO | NO |
| U-238 | pCi/g | 0.967 | 1.85 | [a] | NO | 0.67 | [d] | YES | NO |
| Zn-65 | pCi/g | 0.14 | – | | – | 5.E+44 | [d] | NO | NO |

**Notes:**

– = Screening concentration is not available for this chemical.

**Reference:**


[a] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide Concentration at the* Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[b] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvania. October 22.

[c] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.

[d] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.


[e] Maximum detected concentration of essential nutrient is less than ten times the background concentration. Therefore, the COPC is not retained.

**Table C-5.** Summary Statistics for CFA-15

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lo 95% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,1,1-Trichloroethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,1,2,2-Tetrachloroethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,1,2-Trichloroethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,1-Dichloroethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,1-Dichloroethene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,2,3-Trichloropropane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,2,4,5-Tetrachlorobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,2-Dibromo-3-chloropropane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,2-Dibromoethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,2-Dichlorobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,2-Dichloroethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,2-Dichloropropane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 1,2-Diphenylhydrazine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,3-Dichlorobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,4-Dichlorobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,4-Dinitrobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 1,4-Dioxane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,3,4,6-Tetrachlorophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,3,7,8-TCDD(dioxin) | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4'-DDD | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4'-DDT | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4,5-T | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4,5-TP (Silvex) | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4,5-Trichlorophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,4,6-Trichlorophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,4-D | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2,4-Dichlorophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,4-Dimethylphenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,4-Dinitrophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,4-Dinitrotoluene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,6-Dichlorophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2,6-Dinitrotoluene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2-4'-DDE | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 2-Acetylaminofluorene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2-Butanone | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 2-Chloroethylvinyl ether | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 2-Chloronaphthalene | mg/kg | 6 | 0 | 0.0% | | | | | | | |

**Table C-5.** Summary Statistics for CFA-15

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lo 95% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Chlorophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2-Hexanone | mg/kg | 1 | 0 | 0.0% | | | | | | | |
| 2-Methylphenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2-Naphthylamine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2-Nitroaniline | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 2-Nitrophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 3-Methylcholanthrene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4,4'-DDD | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 4,4'-DDE | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 4,4'-DDT | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| 4,4-methylenabis(2-chloroaniline) | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4,6-Dinitro-2-methylphenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4-Aminobiphenyl | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4-Bromophenyl-phenylether | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4-Chloro-3-methylphenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4-Chloroaniline | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4-Methyl-2-Pentanone | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| 4-Methylphenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4-Nitroaniline | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 4-Nitrophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| 5-Nitro-o-toluidine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Acenaphthene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Acenaphthylene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Acetone | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Acetonitrile | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Acetophenone | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Acrolein | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Acrylamide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Acrylonitrile | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Aldrin | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Allyl Chloride | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Alpha-BHC | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aluminum | mg/kg | 6 | 6 | 100.0% | 4060 | | 15600 | | 1.01E+04 | 4.81E+03 | 2.( |
| Amenable Cyanide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aniline | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Anthracene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Antimony | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Aramite | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Aroclor-1016 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1221 | mg/kg | 2 | 0 | 0.0% | | | | | | | |

**Table C-5.** Summary Statistics for CFA-15

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lo 95% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1232 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1242 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1248 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1254 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Aroclor-1260 | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Arsenic | mg/kg | 6 | 6 | 100.0% | 2.7 | | 5.57 | | 3.73E+00 | 1.13E+00 | 4. |
| Barium | mg/kg | 6 | 6 | 100.0% | 80 | | 269 | | 1.78E+02 | 6.82E+01 | 2. |
| Benzene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Benzo(a)anthracene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Benzo(a)pyrene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Benzo(b)fluoranthene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Benzo(g,h,i)perylene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Benzo(k)fluoranthene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Benzyl Dichloride | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Beryllium | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Beta-BHC | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Bromodichloromethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Bromoform | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Bromomethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Butylbenzylphthalate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Cadmium | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Calcium | mg/kg | 6 | 6 | 100.0% | 5740 | | 59600 | | 2.97E+04 | 2.28E+04 | 1. |
| Carbon Disulfide | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Carbon Tetrachloride | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Chlorobenzene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Chlorobenzilate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Chloroethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Chloroform | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Chloromethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Chloroprene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Chromium | mg/kg | 6 | 6 | 100.0% | 13 | | 22.2 | | 1.78E+01 | 3.49E+00 | 2. |
| Chrysene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Cobalt | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Copper | mg/kg | 6 | 6 | 100.0% | 12.2 | | 25.4 | | 1.61E+01 | 4.94E+00 | 2. |
| Delta-BHC | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Di-n-butylphthalate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Di-n-octylphthalate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Dibenz(a,h)anthracene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Dibenzo[a,e]pyrene | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Dibromochloromethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |

**Table C-5.** Summary Statistics for CFA-15

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lo 95% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dibromomethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Dichlorodifluoromethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Dieldrin | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Diethyl ether | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Diethylphthalate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Dimethylphthalate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Dinoseb | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Diphenylamine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Disulfoton | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endosulfan I | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endosulfan II | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endosulfan sulfate | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endrin | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endrin aldehyde | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Endrin ketone | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Ethyl Acetate | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Ethyl methacrylate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Ethylbenzene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Ethylcyanide | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Ethylene Oxide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Famphur | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Fluoranthene | mg/kg | 8 | 1 | 12.5% | 0.038 | | 0.038 | | 1.47E-01 | 6.83E-02 | 2.! |
| Fluorene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Heptachlor | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Heptachlor epoxide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Hexachlorobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Hexachlorobutadiene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Hexachlorocyclopentadiene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Hexachloroethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Hexachloropropene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Indeno(1,2,3-cd)pyrene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Iodomethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Iron | mg/kg | 6 | 6 | 100.0% | 9270 | | 22600 | | 1.62E+04 | 4.48E+03 | 2.2 |
| Isobutyl alcohol | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Isodrin | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Isosafrole | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Kepone | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Lead | mg/kg | 6 | 6 | 100.0% | 10.2 | | 18.9 | | 1.26E+01 | 3.27E+00 | 1.! |
| Magnesium | mg/kg | 6 | 6 | 100.0% | 3170 | | 10400 | | 7.49E+03 | 2.53E+03 | 1.2 |
| Manganese | mg/kg | 6 | 6 | 100.0% | 121 | | 431 | | 2.89E+02 | 1.12E+02 | 4.! |

**Table C-5.** Summary Statistics for CFA-15

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Log 95% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | mg/kg | 6 | 1 | 16.7% | 0.42 | | 0.42 | | 1.14E-01 | 1.51E-01 | 5.( |
| Methacrylonitrile | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Methapyrilene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Methoxychlor | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Methyl methacrylate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Methyl parathion | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Methylene Chloride | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Methylmethanesulfonate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Butanol | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| N-Nirtosopiperidine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Nitroso-di-n-butylamine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Nitroso-di-n-propylamine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Nitrosodiethylamine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Nitrosodimethylamine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Nitrosodiphenylamine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Nitrosomethylethylamine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Nitrosomorpholine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| N-Nitrosopyrrolidine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Naphthalene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Nickel | mg/kg | 6 | 4 | 66.7% | 20.6 | | 25.4 | | 1.72E+01 | 7.92E+00 | 3.8 |
| Nitrobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Parathion | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Pentachlorobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Pentachloroethane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Pentachloronitrobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Pentachlorophenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Phenacetin | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Phenanthrene | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Phenol | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Phorate | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Phthalic anhydride | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Potassium | mg/kg | 6 | 6 | 100.0% | 701 | | 2230 | | 1.43E+03 | 5.98E+02 | 2.4 |
| Pronamide | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Propionitrile | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Pyrene | mg/kg | 8 | 1 | 12.5% | 0.059 | | 0.059 | | 1.56E-01 | 5.67E-02 | 2.3 |
| Pyridine | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Safrole | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Selenium | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Silver | mg/kg | 6 | 1 | 16.7% | 0.42 | | 0.42 | | 2.57E-01 | 8.08E-02 | 3.3 |
| Sodium | mg/kg | 6 | 6 | 100.0% | 264 | | 554 | | 3.90E+02 | 1.15E+02 | 5.2 |

**Table C-5.** Summary Statistics for CFA-15

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lo 95% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachloroethene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Thallium | mg/kg | 6 | 1 | 16.7% | 0.2 | | 0.2 | | 1.27E-01 | 3.70E-02 | 1. |
| Toluene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Total Cyanide | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Toxaphene | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| Trichloroethene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Trichlorofluoromethane | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Tris2,3-dibromopropylphosphate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| Vanadium | mg/kg | 6 | 6 | 100.0% | 20.5 | | 30.3 | | 2.48E+01 | 3.48E+00 | 2. |
| Vinyl Acetate | mg/kg | 1 | 0 | 0.0% | | | | | | | |
| Vinyl Chloride | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Xylene (total) | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Zinc | mg/kg | 6 | 6 | 100.0% | 46.8 | | 79.6 | | 6.03E+01 | 1.13E+01 | 7. |
| alpha-Chlordane | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| bis(2-Chloroethoxy)methane | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| bis(2-Chloroethyl)ether | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| bis(2-Chloroisopropyl)ether | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| bis(2-Ethylhexyl)phthalate | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| cis-1,3-Dichloropropene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| gamma-BHC (Lindane) | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| gamma-Chlordane | mg/kg | 2 | 0 | 0.0% | | | | | | | |
| p-(Dimethylamino)azobenzene | mg/kg | 6 | 0 | 0.0% | | | | | | | |
| trans-1,2-Dichloroethene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| trans-1,3-Dichloropropene | mg/kg | 5 | 0 | 0.0% | | | | | | | |
| Ag-108m | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Ag-110m | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Am-241 | pCi/g | 12 | 1 | 8.3% | 0.0138 | 0.01 | 0.0138 | 0.01 | 9.29E-03 | 2.49E-02 | 8. |
| Ce-144 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Co-58 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Co-60 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Cs-134 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Cs-137 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Eu-152 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Eu-154 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Eu-155 | pCi/g | 6 | 1 | 16.7% | 0.168 | 0.07 | 0.168 | 0.07 | 3.38E-02 | 7.22E-02 | 4.. |
| Mn-54 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Nb-95 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Pu-238 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Pu-239 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Ra-226 | pCi/g | 6 | 6 | 100.0% | 1.54 | 0.77 | 2.54 | 0.79 | 2.00E+00 | 3.46E-01 | 2.. |

**Table C-5.** Summary Statistics for CFA-15

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lo 95% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ru-103 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Ru-106 | pCi/g | 6 | 1 | 16.7% | 0.565 | 0.26 | 0.565 | 0.26 | 8.13E-02 | 2.67E-01 | 4. |
| Sb-125 | pCi/g | 6 | 0 | 0.0% | | | | | | | |
| Sr-90 | pCi/g | 6 | 1 | 16.7% | 0.166 | 0.06 | 0.166 | 0.06 | 5.64E-02 | 6.83E-02 | 1. |
| U-234 | pCi/g | 6 | 6 | 100.0% | 0.762 | 0.06 | 1.01 | 0.07 | 8.90E-01 | 9.53E-02 | 9. |
| U-235 | pCi/g | 12 | 6 | 50.0% | 0.0385 | 0.01 | 0.0631 | 0.01 | 5.01E-02 | 2.37E-02 | 1. |
| U-238 | pCi/g | 6 | 6 | 100.0% | 0.837 | 0.07 | 0.967 | 0.07 | 9.09E-01 | 5.56E-02 | 9. |
| Zn-65 | pCi/g | 6 | 1 | 16.7% | 0.14 | 0.06 | 0.14 | 0.06 | 4.01E-02 | 5.35E-02 | 5. |
| Zr-95 | pCi/g | 6 | 0 | 0.0% | | | | | | | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum sample requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-6.** Summary Statistics for CFA-15 (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|
| Ra-226 | pCi/g | 0-0.5 | NS | | | | | | |
| Ra-226 | pCi/g | 0.5-4 | 2 | 2 | 100.0% | 2.16 | 2.54 | 2.35E+00 | 2.69E-01 |
| Ra-226 | pCi/g | 4-10 | 1 | 1 | 100.0% | 1.88 | 1.88 | 1.88E+00 | 0.00E+00 |
| Ra-226 | pCi/g | >10 | 3 | 3 | 100.0% | 1.54 | 2.11 | 1.81E+00 | 2.86E-01 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum samples requirements are met.

NS = Not Sampled.

Table C-7. Supplemental contaminant screening for OU 4-05, CFA-04: Pond (CFA-674)

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the maximum concentration greater than RBC? |
| Aroclor-1254 | mg/kg | 2.8 | -- | | -- | 0.32 | [d | YES |
| Arsenic | mg/kg | 22.4 | 7.4 | [b | YES | 0.43 | [d | YES |
| Carbazole | mg/kg | 0.036 | -- | | -- | 32 | [d | NO |
| Chromium | mg/kg | 237 | 50 | [b | YES | 390 | [d | NO |
| Lead | mg/kg | 49.3 | 23 | [b | YES | 400 | [e | NO |
| Mercury | mg/kg | 439 | 0.074 | [b | YES | 23 | [d | YES |
| Silver | mg/kg | 121 | 6 | | -- | 390 | [d | NO |
| Cs-137 | pCi/g | 2 | 1.28 | [b | YES | 0.23 | [f] | YES |
| U-234 | pCi/g | 22.6 | 1.95 | [b | YES | 18 | [f] | YES |
| U-235 | pCi/g | 1.6 | -- | | -- | 0.13 | [f] | YES |
| U-238 | pCi/g | 35 | 1.85 | [b | YES | 0.67 | [f] | YES |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide* Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] Toxic Substance Control Act (TSCA). Cleanup of PCB Spills. Federal Register, 7 Feb. 1978, 43 FR 7150 and 31 May 1979, 44

[d] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvani

[e] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Cor Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.

[f] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.

**Table C-8.** Summary Statistics for CFA-04

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Logno UC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1254 | mg/kg | 9 | 7 | 77.8% | 0.1 | | 2.8 | | 5.89E-01 | 8.95E-01 | 1.6 |
| Arsenic | mg/kg | 144 | 143 | 99.3% | 3.1 | | 22.4 | | 8.35E+00 | 2.80E-01 | 9.0 |
| Carbazole | mg/kg | 14 | 1 | 7.1% | 0.036 | | 0.036 | | 1.80E-01 | 4.34E-02 | 2.4 |
| Lead | mg/kg | 78 | 78 | 100.0% | 7.5 | | 49.3 | | 1.61E+01 | 3.50E-01 | 1.8 |
| Mercury | mg/kg | 276 | 107 | 78.7% | 0.12 | | 439 | | 4.27E+01 | 7.67E+01 | 8.4 |
| Cs-137 | pCi/g | 57 | 39 | 68.4% | 0.007 | 0.03 | 2 | 0.3 | 1.50E-01 | 2.04E+00 | 2.6 |
| U-234 | pCi/g | 46 | 46 | 100.0% | 0.651 | 0.05 | 22.6 | 1.4 | 2.53E+00 | 4.34E+00 | 2.7 |
| U-235 | pCi/g | 132 | 104 | 78.8% | 0.0225 | 0.01 | 1.6 | 0.2 | 8.00E-02 | 8.00E-01 | 1.5 |
| U-238 | pCi/g | 78 | 78 | 100.0% | 0.707 | 0.347 | 35 | 2 | 1.25E+00 | 7.90E-01 | 1.9 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-9.** Summary Statistics for CFA-04 (By Depth Zone)

| Compound | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | S D |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 0-0.5 | 71 | 70 | 98.6% | 3.1 | 12.4 | 7.43E+00 | 2 |
| Mercury | mg/kg | 0-0.5 | 112 | 102 | 91.1% | 0.12 | 439 | 4.84E+01 | 8 |
| Cs-137 | pCi/g | 0-0.5 | 6 | 6 | 100.0% | 0.16 | 2 | 1.10E+00 | 7 |
| U-234 | pCi/g | 0-0.5 | 22 | 22 | 100.0% | 0.657 | 22.6 | 1.58E+00 | 1 |
| U-235 | pCi/g | 0-0.5 | 27 | 27 | 100.0% | 0.0286 | 1.6 | 1.30E-01 | 1 |
| U-238 | pCi/g | 0-0.5 | 22 | 22 | 100.0% | 0.805 | 35 | 1.91E+00 | 1 |
| Arsenic | mg/kg | 0.5-4 | 60 | 60 | 100.0% | 4.7 | 22.4 | 8.03E+00 | 2 |
| Mercury | mg/kg | 0.5-4 | 9 | 2 | 22.2% | 138 | 147 | 3.17E+01 | 6 |
| Cs-137 | pCi/g | 0.5-4 | 9 | 3 | 33.3% | 0.0776 | 1.45 | 1.35E-01 | 1 |
| U-234 | pCi/g | 0.5-4 | 10 | 10 | 100.0% | 0.745 | 3.1 | 1.52E+00 | 1 |
| U-235 | pCi/g | 0.5-4 | 18 | 11 | 61.1% | 0.0276 | 0.43 | 6.79E-02 | 7 |
| U-238 | pCi/g | 0.5-4 | 10 | 10 | 100.0% | 0.71 | 4.6 | 9.90E-01 | 3 |
| Arsenic | mg/kg | 4-10 | 15 | 15 | 100.0% | 6.5 | 14.9 | 9.60E+01 | 2 |
| Mercury | mg/kg | 4-10 | 15 | 3 | 20.0% | 0.39 | 73 | 6.36E+00 | 1 |
| Cs-137 | pCi/g | 4-10 | 11 | 5 | 45.5% | 0.0742 | 0.157 | 6.70E-02 | 6 |
| U-234 | pCi/g | 4-10 | 14 | 14 | 100.0% | 0.651 | 2.45 | 1.26E+00 | 4 |
| U-235 | pCi/g | 4-10 | 24 | 14 | 58.3% | 0.0225 | 0.139 | 7.25E-02 | 6 |
| U-238 | pCi/g | 4-10 | 14 | 14 | 100.0% | 0.732 | 2.98 | 1.26E+00 | 4 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL. UCL values are shown only if these minimum sample requirements are met.

**Table C-10. Supplemental contaminant screening for OU 4-05, CFA-17 (Fire Department Training Area, Bermed) and CFA-47 (Fi**

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the maxir concentrat greater th RBC? |
| Aroclor-1260 | mg/kg | NS | | | | | | |
| Arsenic | mg/kg | NS | 7.4 | [c | NO | 0.43 | [b | NO |
| Benzo(b)fluoranthen | mg/kg | 0.2 | -- | | -- | 0.88 | [b | NO |
| Benzo(g,h,i)perylene | mg/kg | 0.16 | -- | | -- | -- | | -- |
| Chrysene | mg/kg | 0.16 | -- | | -- | 88 | [b | NO |
| Lead | mg/kg | NS | 23 | [c | NO | 400 | [d | NO |
| Phenanthrene | mg/kg | 0.14 | -- | | -- | -- | | -- |

**Notes:**

NS = Not sampled.

ND = Not detected.

-- = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment III. Ic

[b] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvania. O

[c] Rood, S. M., G. A. Morris, and G. J. White, 1995, Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide Cor Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0, February.

[d] EPA, 1994, Revised Interim Soil Lead Guidance for CERCLA sites and RCRA Corrective Action Facilities, Office of Solid Waste and Washington DC, OSWER Directive 9355.4-12, July.

**Table C-11.** Summary Statistics for CFA-17/47

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | INEEI Co |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | mg/kg | NS | | | | | | | | |
| Arsenic | mg/kg | NS | | | | | | | | |
| Benzo(b)fluoranthene | mg/kg | 43 | 3 | 7.0% | 0.0176 | 0.2 | 2.37E-02 | 6.25E-02 | 1.09E-01 | |
| Benzo(g,h,i)perylene | mg/kg | 43 | 1 | 2.3% | 0.16 | 0.16 | 1.98E-02 | 5.69E-02 | 9.74E-02 | |
| Chrysene | mg/kg | 43 | 2 | 4.7% | 0.0264 | 0.16 | 1.23E-02 | 3.51E-02 | 3.57E-01 | |
| Lead | mg/kg | NS | | | | | | | | |
| Phenanthrene | mg/kg | 43 | 2 | 4.7% | 0.0252 | 0.14 | 1.18E-02 | 3.31E-02 | 4.71E-01 | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum samples requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

NS = Not Sampled.

**Table C-12.** Summary Statistics for CFA-17/47 (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standa Deviati |
|---|---|---|---|---|---|---|---|---|---|
| Benzo(g,h,i)perylene | mg/kg | 0-0.5 | 2 | 0 | 0.0% | | | | |
| Phenanthrene | mg/kg | 0-0.5 | 2 | 0 | 0.0% | | | | |
| Benzo(g,h,i)perylene | mg/kg | 0.5-4 | 18 | 1 | 5.6% | 0.16 | 0.16 | 1.79E-02 | 3.66E- |
| Phenanthrene | mg/kg | 0.5-4 | 18 | 2 | 11.1% | 0.0252 | 0.14 | 1.36E-02 | 3.22E- |
| Benzo(g,h,i)perylene | mg/kg | 4-10 | 14 | 0 | 0.0% | | | | |
| Phenanthrene | mg/kg | 4-10 | 14 | 0 | 0.0% | | | | |
| Benzo(g,h,i)perylene | mg/kg | >10 | 9 | 0 | 0.0% | | | | |
| Phenanthrene | mg/kg | >10 | 9 | 0 | 0.0% | | | | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum samples requirements are met.

**Table C-13. Supplemental contaminant screening for OU 4-07, CFA-06: Lead Shop (outside areas)**

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the maximu concentratio greater than RBC? |
| Arsenic | mg/kg | 14.5 | 7.4 | [b] | YES | 0.43 | [c] | YES |
| Lead | mg/kg | 153 | 23 | [b] | YES | 400 | [d] | NO |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment III. I

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide Con*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvania. O

[d] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Correcti

Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.


[e] Detected concentrations of arsenic are not source related and are assumed to be within the range of background concentrations for I

Arsenic is therefore eliminated as a COPC.

**Table C-14.** Summary Statistics for CFA-06

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | Backgroun Concentratic |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 29 | 7 | 24.1% | 10.4 | 14.5 | 6.83E+00 | 3.12E+00 | 7.74E+00 | 7.4 |
| Lead | mg/kg | 35 | 26 | 74.3% | 10.4 | 153 | 3.14E+01 | 4.15E+01 | 4.56E+01 | 23 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum sample requirements are met.

**Table C-15. Supplemental contaminant screening for OU 4-06, CFA-43: Lead Storage Area**

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the maximu concentratio greater than RBC? |
| Lead | mg/kg | 180 | 23 | [b] | YES | 400 | [c] | NO |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment III. I

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide Con*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Correcti

Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.

**Table C-16.** Summary Statistics for CFA-43

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | Backgrou Concentrat |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | mg/kg | 69 | 67 | 97.10% | 6.1 | 180 | 3.09E+01 | 3.58E+01 | 3.73E+01 | 23 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

**Table C-17. Supplemental contaminant screening for OU 4-06, CFA-44: Spray Paint Booth Drain**

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the r conce great R |
| Lead | mg/kg | 51.1 | 23 | [b] | YES | 400 | [c] | I |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachm

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionucl*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA (

Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.

**Table C-18.** Summary Statistics for CFA-44

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | Backgrou Concentrat |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | mg/kg | 6 | 5 | 83.3% | 5.8 | 51.1 | 2.09E+01 | 1.83E+01 | 2.51E+02 | 23 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

Table C-19. Supplemental contaminant screening for OU 4-07, CFA-07: French Drain E/S (CFA-633)

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the conc gre f |
| Arsenic | mg/kg | 9 | 7.4 | [b] | YES | 0.43 | [c] | |
| Lead | mg/kg | 4580 | 23 | [b] | YES | 400 | [d] | |
| Ag-108m | pCi/g | 0.43 | -- | | -- | 0.012 | [e] | |
| Co-60 | pCi/g | 3.6 | -- | | -- | 7400 | [e] | |
| Cs-137 | pCi/g | 104 | 1.28 | [b] | YES | 0.23 | [e] | |
| Pu-238 | pCi/g | 9.3 | 0.0091 | [b] | YES | 6.7 | [e] | |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**

[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachme

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionucli*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylva

[d] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA C

Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.

[e] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and

Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.

[f] Detected concentrations of arsenic are not source related and are assumed to be within the range of background concentration

Arsenic is therefore eliminated as a COPC.

**Table C-20.** Summary Statistics for CFA-07

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | B Co |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 7 | 7 | 100.0% | 1.5 | | 9 | | 4.24E+00 | 2.70E+00 | 9.33E+00 | |
| Lead | mg/kg | 7 | 7 | 100.0% | 74 | | 4580 | | 2.17E+03 | 2.20E+03 | 6.57E+05 | |
| Ag-108m | pCi/g | 3 | 3 | 100.0% | 0.29 | 0.03 | 0.43 | 0.04 | 3.63E-01 | 7.02E-02 | 5.81E-01 | |
| Co-60 | pCi/g | 5 | 5 | 100.0% | 0.13 | 0.02 | 3.6 | 0.3 | 1.03E+00 | 1.49E+00 | 2.27E+02 | |
| Cs-137 | pCi/g | 6 | 6 | 100.0% | 26.3 | 1.9 | 104 | 8 | 5.39E+01 | 3.26E+01 | 1.10E+02 | |
| Pu-238 | pCi/g | 6 | 4 | 66.7% | 0.08 | 0.02 | 9.3 | 0.3 | 3.65E+00 | 4.21E+00 | 1.16E+08 | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum sample requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-21.** Summary Statistics for CFA-07 (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standar Deviatic |
|---|---|---|---|---|---|---|---|---|---|
| Lead | mg/kg | 0-0.5 | NS | | | | | | |
| Ag-108m | pCi/g | 0-0.5 | NS | | | | | | |
| Cs-137 | pCi/g | 0-0.5 | NS | | | | | | |
| Pu-238 | pCi/g | 0-0.5 | NS | | | | | | |
| Lead | mg/kg | 0.5-4 | NS | | | | | | |
| Ag-108m | pCi/g | 0.5-4 | NS | | | | | | |
| Cs-137 | pCi/g | 0.5-4 | NS | | | | | | |
| Pu-238 | pCi/g | 0.5-4 | NS | | | | | | |
| Lead | mg/kg | 4-10 | NS | | | | | | |
| Ag-108m | pCi/g | 4-10 | NS | | | | | | |
| Cs-137 | pCi/g | 4-10 | NS | | | | | | |
| Pu-238 | pCi/g | 4-10 | NS | | | | | | |
| Lead | mg/kg | >10 | 7 | 7 | 100.0% | 74 | 4580 | 2.17E+03 | 2.20E+( |
| Ag-108m | pCi/g | >10 | 3 | 3 | 100.0% | 0.29 | 0.43 | 3.63E-01 | 7.02E-( |
| Cs-137 | pCi/g | >10 | 6 | 6 | 100.0% | 26.3 | 104 | 5.39E+01 | 3.26E+( |
| Pu-238 | pCi/g | >10 | 6 | 4 | 66.7% | 0.08 | 9.3 | 3.65E+00 | 4.21E+( |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum sample requirements are met.

NS = Not Sampled.

**Table C-22. Supplemental contaminant screening for OU 4-07, CFA-12: French Drain (2) (CFA-690)**

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the conc grea R |
| Ag-108m | pCi/g | 2.46 | – | | – | 0.012 | [c] | Y |
| Am-241 | pCi/g | 23.7 | 0.019 | [b] | YES | 2.9 | [c] | Y |
| Ba-133 | pCi/g | 0.77 | – | | – | 0.197 | [a] | Y |
| Co-60 | pCi/g | 2.9 | – | | – | 7400 | [c] | |
| Cs-134 | pCi/g | 0.94 | – | | – | 2.4E+13 | [c] | |
| Cs-137 | pCi/g | 1070 | 1.28 | [b] | YES | 0.23 | [c] | Y |
| Eu-152 | pCi/g | 10.6 | – | | – | 2.7 | [c] | Y |
| Eu-154 | pCi/g | 0.73 | – | | – | 52 | [c] | |
| U-235 | pCi/g | 2.4 | – | | – | 0.13 | [c] | Y |
| U-238 | pCi/g | 18.3 | 1.85 | [b] | YES | 0.67 | [c] | Y |
| Zn-65 | pCi/g | 0.08 | – | | – | 5E+44 | [c] | |

**Notes:**

– = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachme

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionucl*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.

**Table C-23.** Summary Statistics for CFA-12

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ag-108m | pCi/g | 1 | 1 | 100.0% | 2.46 | 0.19 | 2.46 | 0.19 | 2.46E+00 | 0.00E+00 | | |
| Am-241 | pCi/g | 4 | 4 | 100.0% | 0.09 | 0.02 | 23.7 | 0.3 | 9.74E+00 | 1.17E+01 | 2.16E+16 | |
| Ba-133 | pCi/g | 1 | 1 | 100.0% | 0.77 | 0.18 | 0.77 | 0.18 | 7.70E-01 | 0.00E+00 | | |
| Co-60 | pCi/g | 2 | 2 | 100.0% | 0.063 | 0.02 | 2.9 | 0.2 | 1.48E+00 | 2.01E+00 | | |
| Cs-134 | pCi/g | 1 | 1 | 100.0% | 0.94 | 0.09 | 0.94 | 0.09 | 9.40E-01 | 0.00E+00 | | |
| Cs-137 | pCi/g | 3 | 3 | 100.0% | 10.2 | 0.8 | 1070 | 80 | 3.65E+02 | 6.11E+02 | 1.18E+30 | |
| Eu-152 | pCi/g | 1 | 1 | 100.0% | 10.6 | 0.8 | 10.6 | 0.8 | 1.06E+01 | 0.00E+00 | | |
| Eu-154 | pCi/g | 1 | 1 | 100.0% | 0.73 | 0.11 | 0.73 | 0.11 | 7.30E-01 | 0.00E+00 | | |
| U-235 | pCi/g | 4 | 2 | 50.0% | 1.2 | 0.2 | 2.4 | 0.1 | 9.00E-01 | 1.15E+00 | 5.92E+00 | |
| U-238 | pCi/g | 3 | 3 | 100.0% | 0.8 | 0.1 | 18.3 | 0.2 | 6.63E+00 | 1.01E+01 | 1.49E+14 | |
| Zn-65 | pCi/g | 1 | 1 | 100.0% | 0.08 | 0.04 | 0.08 | 0.04 | 8.00E-02 | 0.00E+00 | | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum sample requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-24.** Summary Statistics for CFA-12 (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|
| Ag-108m | pCi/g | 0-0.5 | NS | | | | | | |
| Am-241 | pCi/g | 0-0.5 | NS | | | | | | |
| Ba-133 | pCi/g | 0-0.5 | NS | | | | | | |
| Cs-137 | pCi/g | 0-0.5 | NS | | | | | | |
| Eu-152 | pCi/g | 0-0.5 | NS | | | | | | |
| U-235 | pCi/g | 0-0.5 | NS | | | | | | |
| U-238 | pCi/g | 0-0.5 | NS | | | | | | |
| Ag-108m | pCi/g | 0.5-4 | NS | | | | | | |
| Am-241 | pCi/g | 0.5-4 | NS | | | | | | |
| Ba-133 | pCi/g | 0.5-4 | NS | | | | | | |
| Cs-137 | pCi/g | 0.5-4 | NS | | | | | | |
| Eu-152 | pCi/g | 0.5-4 | NS | | | | | | |
| U-235 | pCi/g | 0.5-4 | NS | | | | | | |
| U-238 | pCi/g | 0.5-4 | NS | | | | | | |
| Ag-108m | pCi/g | 4 - 10 | 1 | 1 | 100.0% | 2.46 | 2.46 | 2.46E+00 | 0.00E+00 |
| Am-241 | pCi/g | 4 - 10 | 4 | 4 | 100.0% | 0.09 | 23.7 | 9.74E+00 | 1.17E+01 |
| Ba-133 | pCi/g | 4 - 10 | 1 | 1 | 100.0% | 0.77 | 0.77 | 7.70E-01 | 0.00E+00 |
| Cs-137 | pCi/g | 4 - 10 | 3 | 3 | 100.0% | 10.2 | 1070 | 3.65E+02 | 6.11E+02 |
| Eu-152 | pCi/g | 4 - 10 | 1 | 1 | 100.0% | 10.6 | 10.6 | 1.06E+01 | 0.00E+00 |
| U-235 | pCi/g | 4 - 10 | 4 | 2 | 50.0% | 1.2 | 2.4 | 9.00E-01 | 1.15E+00 |
| U-238 | pCi/g | 4 - 10 | 3 | 3 | 100.0% | 0.8 | 18.3 | 6.63E+00 | 1.01E+01 |
| Ag-108m | pCi/g | >10 | NS | | | | | | |
| Am-241 | pCi/g | >10 | NS | | | | | | |
| Ba-133 | pCi/g | >10 | NS | | | | | | |
| Cs-137 | pCi/g | >10 | NS | | | | | | |
| Eu-152 | pCi/g | >10 | NS | | | | | | |
| U-235 | pCi/g | >10 | NS | | | | | | |
| U-238 | pCi/g | >10 | NS | | | | | | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

NS = Not Sampled.

**Table C-25. Supplemental contaminant screening for OU 4-08, CFA-08: Drainfield**

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is th cor gr |
| Aroclor-1254 | mg/kg | 1.3 | – | | – | 0.32 | [d] | |
| Aroclor-1260 | mg/kg | 0.14 | – | | – | 0.32 | [d] | |
| Arsenic | mg/kg | 16.8 | 7.4 | [b] | YES | 0.43 | [d] | |
| Carbazole | mg/kg | 0.055 | – | | – | 32 | [d] | |
| Isophorone | mg/kg | 4.1 | – | | – | 670 | [d] | |
| Am-241 | pCi/g | 0.14 | 0.019 | [b] | YES | 2.9 | [e] | |
| Co-60 | pCi/g | 24.1 | – | | – | 7,400 | [e] | |
| Cs-137 | pCi/g | 180 | 1.28 | [b] | YES | 0.23 | [e] | |
| Eu-152 | pCi/g | 0.46 | – | | – | 2.7 | [e] | |
| Eu-154 | pCi/g | 1.1 | – | | – | 52 | [e] | |
| Pu-239/240 | pCi/g | 2.9 | 0.19 | [b] | YES | 2.5 | [e] | |
| U-235 | pCi/g | 0.44 | – | | – | 0.13 | [e] | |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] Toxic Substance Control Act (TSCA). Cleanup of PCB Spills. Federal Register, 7 Feb. 1978, 43 FR 7150 and 31 May 1979, 44

[d] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvani

[e] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and

Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.


[f] Detected concentrations of arsenic are not source related and are assumed to be within the range of background concentrations f

Arsenic is therefore eliminated as a COPC.

**Table C-26.** Summary Statistics for CFA-08 Drainfield

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lognorm 95% UCL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1254 | mg/kg | 28 | 3 | 10.7% | 0.58 | | 1.3 | | 1.07E-01 | 2.83E-01 | 1.05E-( |
| Aroclor-1260 | mg/kg | 28 | 4 | 14.3% | 0.036 | | 0.14 | | 2.68E-02 | 2.58E-02 | 3.05E-( |
| Arsenic | mg/kg | 31 | 31 | 100.0% | 2.6 | | 16.8 | | 7.25E+00 | 3.26E+00 | 8.50E+( |
| Carbazole | mg/kg | 28 | 1 | 3.6% | 0.055 | | 0.055 | | 1.78E-01 | 2.73E-02 | 1.95E-( |
| Isophorone | mg/kg | 28 | 1 | 3.6% | 4.1 | | 4.1 | | 3.23E-01 | 7.40E-01 | 3.06E-( |
| Am-241 | pCi/g | 75 | 10 | 13.3% | 0 | 0.02 | 0.14 | 0.03 | 1.79E-02 | 7.12E-02 | 1.64E+( |
| Co-60 | pCi/g | 63 | 29 | 46.0% | 0.072 | 0.02 | 24.1 | 1.8 | 1.14E+00 | 3.35E+00 | 1.05E+( |
| Cs-137 | pCi/g | 65 | 47 | 72.3% | 0.0795 | 0.03 | 180 | 5.75 | 2.33E+01 | 4.47E+01 | 8.36E+( |
| Eu-152 | pCi/g | 49 | 1 | 2.0% | 0.46 | 0.08 | 0.46 | 0.08 | 9.62E-03 | 7.49E-02 | 9.84E+( |
| Eu-154 | pCi/g | 49 | 3 | 6.1% | 0.189 | 0.08 | 1.1 | 0.11 | 2.95E-02 | 1.69E-01 | 1.08E+( |
| Pu-239/240 | pCi/g | 27 | 4 | 14.8% | 0.07 | 0.03 | 2.9 | 0.1 | 1.31E-01 | 5.58E-01 | 1.05E+( |
| U-235 | pCi/g | 81 | 14 | 17.3% | 0.031 | 0.01 | 0.44 | 0.21 | 4.86E-02 | 7.42E-02 | 3.73E-( |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-27.** Summary Statistics for CFA-08 Drainfield (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | N |
|---|---|---|---|---|---|---|---|---|---|---|
| Cs-137 | pCi/g | 0-0.5 | 30 | 29 | 96.7% | 0.094 | 169 | 2.48E+01 | 4.52E+01 | |
| Pu-239/240 | pCi/g | 0-0.5 | 8 | 3 | 37.5% | 0.11 | 2.9 | 4.27E-01 | 1.01E+00 | |
| U-235 | pCi/g | 0-0.5 | 30 | 1 | 3.3% | 0.221 | 0.221 | 2.45E-02 | 6.03E-02 | |
| Cs-137 | pCi/g | 0.5-4 | 25 | 14 | 56.0% | 0.0795 | 180 | 2.74E+01 | 5.18E+01 | |
| Pu-239/240 | pCi/g | 0.5-4 | 5 | 1 | 20.0% | 0.07 | 0.07 | 2.00E-02 | 3.08E-02 | |
| U-235 | pCi/g | 0.5-4 | 25 | 4 | 16.0% | 0.14 | 0.44 | 7.06E-02 | 1.06E-01 | |
| Cs-137 | pCi/g | 4-10 | 4 | 4 | 100.0% | 17 | 29 | 2.20E+01 | 6.00E+00 | |
| Pu-239/240 | pCi/g | 4-10 | 5 | 0 | 0.0% | | | | | |
| U-235 | pCi/g | 4-10 | 5 | 1 | 20.0% | 0.14 | 0.14 | 6.20E-02 | 4.49E-02 | |
| Cs-137 | pCi/g | >10 | 6 | 0 | 0.0% | | | | | |
| Pu-239/240 | pCi/g | >10 | 9 | 0 | 0.0% | | | | | |
| U-235 | pCi/g | >10 | 21 | 8 | 38.1% | 0.031 | 0.13 | 5.36E-02 | 3.53E-02 | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

NS = Not sampled.

**Table C-28. Supplemental contaminant screening for OU 4-08, CFA-08: Pipeline**

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is th cor gr |
| Aroclor-1254 | mg/kg | 0.034 | -- | | -- | 0.32 | [d] | |
| Aroclor-1260 | mg/kg | 0.034 | -- | | -- | 0.32 | [d] | |
| Arsenic | mg/kg | 9.6 | 7.4 | [b] | YES | 0.43 | [d] | |
| Carbazole | mg/kg | NS | | | | | | |
| Isophorone | mg/kg | NS | | | | | | |
| Am-241 | pCi/g | ND | 0.019 | [b] | NO | 2.9 | [e] | |
| Co-60 | pCi/g | ND | -- | | -- | 7,400 | [e] | |
| Cs-137 | pCi/g | 0.075 | 1.28 | [b] | NO | 0.23 | [e] | |
| Eu-152 | pCi/g | ND | -- | | -- | 2.7 | [e] | |
| Eu-154 | pCi/g | ND | -- | | -- | 52 | [e] | |
| Pu-239/240 | pCi/g | NS | | | | | | |
| U-235 | pCi/g | 0.0596 | -- | | -- | 0.13 | [e] | |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] Toxic Substance Control Act (TSCA). Cleanup of PCB Spills. Federal Register, 7 Feb. 1978, 43 FR 7150 and 31 May 1979, 44

[d] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvani

[e] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and

Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.


[f] Detected concentrations of arsenic are not source related and are assumed to be within the range of background concentrations f

Arsenic is therefore eliminated as a COPC.

**Table C-29.** Summary Statistics for CFA-08 Pipeline

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1254 | mg/kg | 10 | 1 | 10.0% | 0.034 | | 0.034 | | 1.89E-02 | 5.33E-03 | 2.16E-02 |
| Aroclor-1260 | mg/kg | 10 | 1 | 10.0% | 0.034 | | 0.034 | | 1.89E-02 | 5.33E-03 | 2.16E-02 |
| Arsenic | mg/kg | 10 | 10 | 100.0% | 2.5 | | 9.6 | | 6.19E+00 | 2.37E+00 | 8.88E+00 |
| Carbazole | mg/kg | NS | | | | | | | | | |
| Isophorone | mg/kg | NS | | | | | | | | | |
| Am-241 | pCi/g | 3 | 0 | 0.0% | | | | | | | |
| Co-60 | pCi/g | 3 | 0 | 0.0% | | | | | | | |
| Cs-137 | pCi/g | 3 | 1 | 33.3% | 0.075 | 0.04 | 0.075 | 0.04 | 2.42E-02 | 4.48E-02 | 3.81E+34 |
| Eu-152 | pCi/g | 3 | 0 | 0.0% | | | | | | | |
| Eu-154 | pCi/g | 3 | 0 | 0.0% | | | | | | | |
| Pu-239/240 | pCi/g | NS | | | | | | | | | |
| U-235 | pCi/g | 6 | 3 | 50.0% | 0.0421 | 0.01 | 0.0596 | 0.01 | 3.03E-02 | 3.20E-02 | 5.51E+00 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum samples requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

NS = Not Sampled.

**Table C-30. Supplemental contaminant screening for OU 4-08, CFA-08: Sewage Plant (CFA-691) and Hot Laundry Drain Pi**

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is th co gr |
| Aroclor-1254 | mg/kg | ND | – | | – | 25 | [c] | |
| Aroclor-1260 | mg/kg | ND | – | | – | 25 | [c] | |
| Arsenic | mg/kg | 7.46 | 7.4 | [b] | YES | 0.43 | [d] | |
| Carbazole | mg/kg | ND | – | | – | 32 | [d] | |
| Isophorone | mg/kg | ND | – | | – | 670 | [d] | |
| Am-241 | pCi/g | 0.143 | 0.019 | [b] | YES | 2.9 | [e] | |
| Co-60 | pCi/g | 0.093 | – | | – | 7,400 | [e] | |
| Cs-137 | pCi/g | 0.212 | 1.28 | [b] | NO | 0.23 | [e] | |
| Eu-152 | pCi/g | ND | – | | – | 2.7 | [e] | |
| Eu-154 | pCi/g | ND | – | | – | 52 | [e] | |
| Pu-239 | pCi/g | 0.0045 | 0.19 | [b] | NO | 2.5 | [e] | |
| Ra-226 | pCi/g | 3.04 | – | | – | 0.0055 | [e] | |
| U-235 | pCi/g | 0.232 | – | | – | 0.13 | [e] | |

**Notes:**

ND = Not detected.

-- = Screening concentration is not available for this chemical.

**Reference:**

[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclide*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] Toxic Substance Control Act (TSCA). Cleanup of PCB Spills. Federal Register, 7 Feb. 1978, 43 FR 7150 and 31 May 1979, 44

[d] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvani

[e] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and

Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.

[f] Detected concentrations of arsenic are not source related and are assumed to be within the range of background concentrations f

Arsenic is therefore eliminated as a COPC.

**Table C-31.** Summary Statistics for CFA-08 Sewage Treatment Plant and Hot Laundry Drain Pipe (CFA-49)

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Standard Deviation | Lognorm 95% UCI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1254 | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Aroclor-1260 | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Arsenic | mg/kg | 12 | 12 | 100.0% | 3.21 | | 7.46 | | 4.70E+00 | 1.41E+00 | 5.54E+( |
| Carbazole | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Isophorone | mg/kg | 8 | 0 | 0.0% | | | | | | | |
| Am-241 | pCi/g | 26 | 8 | 30.8% | 0.0075 | 0 | 0.143 | 0.06 | 7.77E-03 | 4.23E-02 | 2.50E+( |
| Co-60 | pCi/g | 13 | 2 | 15.4% | 0.039 | 0.02 | 0.093 | 0.02 | 1.17E-02 | 2.72E-02 | 1.21E+( |
| Cs-137 | pCi/g | 13 | 2 | 15.4% | 0.039 | 0.02 | 0.212 | 0.02 | 1.98E-02 | 5.92E-02 | 3.43E+( |
| Eu-152 | pCi/g | 13 | 0 | 0.0% | | | | | | | |
| Eu-154 | pCi/g | 13 | 0 | 0.0% | | | | | | | |
| Pu-239 | pCi/g | 13 | 1 | 7.7% | 0.0045 | 0 | 0.0045 | 0 | 4.62E-04 | 2.02E-03 | 3.83E+( |
| Ra-226 | pCi/g | 13 | 13 | 100.0% | 1.25 | 0.44 | 3.04 | 0.47 | 2.27E+00 | 5.20E-01 | 2.60E+( |
| U-235 | pCi/g | 26 | 19 | 73.1% | 0.0195 | 0.01 | 0.232 | 0.07 | 7.73E-02 | 7.21E-02 | 1.52E-( |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum samples requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-32.** Summary Statistics for CFA-08 Sewage Treatment Plant and Hot Laundry Drain Pipe (CFA-49

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Normal UCL |
|---|---|---|---|---|---|---|---|---|---|---|
| Ra-226 | pCi/g | 0-0.5 | NS | | | | | | | |
| U-235 | pCi/g | 0-0.5 | NS | | | | | | | |
| Ra-226 | pCi/g | 0.5-4 | NS | | | | | | | |
| U-235 | pCi/g | 0.5-4 | NS | | | | | | | |
| Ra-226 | pCi/g | 4-10 | NS | | | | | | | |
| U-235 | pCi/g | 4-10 | NS | | | | | | | |
| Ra-226 | pCi/g | >10 | 13 | 13 | 100.0% | 1.25 | 3.04 | 2.27E+00 | 5.20E-01 | 2.53E- |
| U-235 | pCi/g | >10 | 26 | 19 | 73.1% | 0.0195 | 0.232 | 7.73E-02 | 7.21E-02 | 1.01E- |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

NS = Not sampled.

Table C-33. Supplemental contaminant screening for OU 4-09, CFA-10: Transformer Yard Oil Spills

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the conc grea F |
| Aroclor-1254 | mg/kg | 1.4 | – | | – | 0.32 | [d] | |
| Aroclor-1260 | mg/kg | 1.3 | – | | – | 25 | [c] | |
| Arsenic | mg/kg | 11.6 | 7.4 | [b] | YES | 0.43 | [d] | |
| Lead | mg/kg | 3300 | 23 | [b] | YES | 400 | [e] | |

**Notes:**

– = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachme

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionucli*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] Toxic Substance Control Act (TSCA). Cleanup of PCB Spills. Federal Register, 7 Feb. 1978, 43 FR 7150 and 31 May 1979, 4

[d] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylva

[e] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA C

Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.


[f] Detected concentrations of arsenic are not source related and are assumed to be within the range of background concentration

Arsenic is therefore eliminated as a COPC.

**Table C-34.** Summary Statistics for CFA-10

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | INEEL Backgrou Concentra |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1254 | mg/kg | 6 | 6 | 100.0% | 0.17 | 1.4 | 8.02E-01 | 5.57E-01 | 4.08E+00 | -- |
| Aroclor-1260 | mg/kg | 6 | 4 | 66.7% | 0.32 | 1.3 | 5.61E-01 | 4.79E-01 | 1.22E+01 | -- |
| Arsenic | mg/kg | 4 | 4 | 100.0% | 4.2 | 11.6 | 7.10E+00 | 3.52E+00 | 2.06E+01 | 7.4 |
| Lead | mg/kg | 4 | 4 | 100.0% | 256 | 3300 | 1.28E+03 | 1.39E+03 | 1.66E+05 | 23 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum samples requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-35.** Summary Statistics for CFA-10 (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standar Deviatio |
|---|---|---|---|---|---|---|---|---|---|
| Lead | mg/kg | 0 - 0.5 | 4 | 4 | 100.0% | 256 | 3300 | 1.28E+03 | 1.39E+0 |
| Lead | mg/kg | 0.5-4 | NS | | | | | | |
| Lead | mg/kg | 4-10 | NS | | | | | | |
| Lead | mg/kg | >10 | NS | | | | | | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum samples requirements are met.

NS = Not sampled.

**Table C-36. Supplemental contaminant screening for OU 4-09, CFA-42: Tank Farm Pump Station Spills**

| | | | Step 1 | | Step 2 | |
|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | Is |
| 2-Methylnaphthalene | mg/kg | NS | | | | |
| Phenanthrene | mg/kg | 0.0157 | -- | -- | -- | |

**Notes:**

NS = Not sampled.

-- = Screening concentration is not available for this chemical.

**Reference:**

[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment III.

**Table C-37.** Summary Statistics for CFA-42

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | B Co |
|---|---|---|---|---|---|---|---|---|---|---|
| Phenanthrene | mg/kg | 42 | 2 | 4.8% | 0.00428 | 0.0157 | 2.25E-03 | 2.16E-03 | 2.35E-03 | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum samples requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-38.** Summary Statistics for CFA-42 (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | S |
|---|---|---|---|---|---|---|---|---|---|
| Phenanthrene | mg/kg | 0-0.5 | NS | | | | | | |
| Phenanthrene | mg/kg | 0.5-4 | 3 | 0 | 0.0% | | | | |
| Phenanthrene | mg/kg | 4-10 | 10 | 0 | 0.0% | | | | |
| Phenanthrene | mg/kg | >10 | 29 | 2 | 6.9% | 0.00428 | 0.0157 | 2.45E-03 | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum samples requirements are met.

NS = Not sampled.

**Table C-39. Supplemental contaminant screening for OU 4-09, CFA-46: Cafeteria Oil Tank Spill**

| | | | Step 1 | | | Step 2 | | | |
|---|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is the maximum concentration greater than RBC? | |
| Benzene | mg/kg | 0.76 | -- | | -- | 22 | [c] | NO | |
| Diesel | mg/kg | 9630 | 1000 | [b] | YES | 162,000 | [a] | NO | |
| Ethylbenzene | mg/kg | 10 | -- | | -- | 7,800 | [c] | NO | |
| Gasoline | mg/kg | ND | -- | | -- | 16,200 | [a] | NO | |
| Toluene | mg/kg | 3.8 | -- | | -- | 16,000 | [c] | NO | |
| Xylene (total) | mg/kg | 13 | -- | | -- | 160,000 | [c] | NO | |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**

[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment III. Idaho Fal

[b] Correspondence from G. C. Bowman, Director of the Environmental Protection Division, U.S. Department of Energy, Idaho Operations Office, Idaho to Dr. Walton C. Poole, Idaho Department of Health and Welfare, Division of Environmental Quality, Pocatello, ID, November 29, 1989.

[c] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvania. October 2

[d] All contaminant concentrations are less than the EPA Region III RBCs, but the site is still retained for evaluation of the groundwater pathway. See Section 4.1.14.

**Table C-40.** Summary Statistics for CFA-46

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | Backgrou Concentrat |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | mg/kg | 7 | 5 | 71.4% | 0.025 | 0.76 | 1.95E-01 | 2.68E-01 | 1.07E+04 | -- |
| Diesel | mg/kg | 2 | 2 | 100.0% | 87 | 9630 | 4.86E+03 | 6.75E+03 | | 1000[b] |
| Ethylbenzene | mg/kg | 7 | 5 | 71.4% | 0.66 | 10 | 2.52E+00 | 3.47E+00 | 7.62E+10 | -- |
| Gasoline | mg/kg | 2 | 0 | 0.0% | | | | | | -- |
| Toluene | mg/kg | 7 | 5 | 71.4% | 0.13 | 3.8 | 1.05E+00 | 1.41E+00 | 1.29E+08 | -- |
| Xylene | mg/kg | 7 | 5 | 71.4% | 2.4 | 13 | 5.77E+00 | 5.65E+00 | 1.01E+12 | -- |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum samples requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable; no background value available

[b] = Correspondence from G.C. Bowman, Director of the Environmental Protection Division, U.S. Department of Energy, Idaho Operations Office, Ida to Dr. Walton C. Poole, Idaho Department of Health and Welfare, Division of Environmental Quality, Pocatello, ID, November 29, 1989.

Table C-41. Supplemental contaminant screening for OU 4-11, CFA-05: Motor Pond Pool

| | | | Step 1 | | | Step 2 | | |
|---|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | | Is th co gr |
| Aroclor-1260 | mg/kg | 1.01 | – | | – | 0.32 | [c] | |
| Arsenic | mg/kg | 19.8 | 7.4 | [a] | YES | 0.43 | [c] | |
| Lead | mg/kg | 631 | 23 | [a] | YES | 400 | [d] | |
| Sulfide | mg/kg | 9.2 | – | | – | – | | |
| Thallium | mg/kg | ND | 0.68 | [a] | – | – | | |
| Ac-228 | pCi/g | 1.4 | – | | – | 0.0549 | [a] | |
| Am-241 | pCi/g | 9.46 | 0.019 | [a] | YES | 2.9 | [e] | |
| Bi-212 | pCi/g | 1.72 | – | | – | 0.165 | [a] | |
| Bi-214 | pCi/g | 1.37 | – | | – | 0.0299 | [a] | |
| Cs-137 | pCi/g | 8.41 | 1.28 | [a] | YES | 0.23 | [e] | |
| Pb-212 | pCi/g | 1.5 | – | | – | 0.6 | [a] | |
| Pb-214 | pCi/g | 1.39 | – | | – | 1.E+13 | [e] | |
| Ra-226 | pCi/g | 3.33 | – | | – | 0.0055 | [e] | |
| Tl-208 | pCi/g | 1.41 | – | | – | 0.0124 | [a] | |

**Notes:**

ND = Not detected.

– = Screening concentration is not available for this chemical.

**Reference:**


[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachment

[b] Toxic Substance Control Act (TSCA). Cleanup of PCB Spills. Federal Register, 7 Feb. 1978, 43 FR 7150 and 31 May 1979, 44

[c] U.S. Environmental Protection Agency (USEPA). 1997. Region III Risk-Based Concentration Table. Philadelphia, Pennsylvania

[d] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corr Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.

[e] Fromm, Jeff. 1996. Environmental Toxicologist, Remediation Bureau. Memo to INEL WAG Managers and Technical Support Staff. Radionuclide Risk-Based Concentration Tables. Table 5. January 3.


[f] Detected concentrations of arsenic are not source related and are assumed to be within the range of background concentrations f Arsenic is therefore eliminated as a COPC.

[g] Sulfide was not retained as a COPC beause it was detected only once.

**Table C-42.** Summary Statistics for CFA-05

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Rad Uncrt (+/-) | Maximum Detected | Rad Uncrt (+/-) | Arithmetic Mean | Lognormal 95 UCL [a] | IN Bacl Conc |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1260 | mg/kg | 4 | 1 | 25.0% | 1.01 | | 1.01 | | 3.13E-01 | 1.55E+02 | |
| Arsenic | mg/kg | 52 | 45 | 86.5% | 2.3 | | 19.8 | | 5.68E+00 | 6.98E+00 | |
| Lead | mg/kg | 52 | 52 | 100.0% | 10.6 | | 631 | | 6.47E+01 | 7.43E+01 | |
| Sulfide | mg/kg | 4 | 1 | 25.0% | 9.2 | | 9.2 | | 4.50E+00 | 1.75E+01 | |
| Thallium | mg/kg | 52 | 0 | 0.0% | | | | | | 2.24E-01 | ( |
| Ac-228 | pCi/g | 38 | 38 | 100.0% | 0.661 | 0.14 | 1.4 | 0.73 | 1.15E+00 | 1.22E+00 | |
| Am-241 | pCi/g | 3 | 3 | 100.0% | 1.07 | 0.03 | 9.46 | 0.62 | 3.94E+00 | 3.48E+06 | ( |
| Bi-212 | pCi/g | 28 | 28 | 100.0% | 0.871 | 0.38 | 1.72 | 0.28 | 1.26E+00 | 1.35E+00 | |
| Bi-214 | pCi/g | 38 | 38 | 100.0% | 0.647 | 0.09 | 1.37 | 0.13 | 1.03E+00 | 1.09E+00 | |
| Cs-137 | pCi/g | 21 | 21 | 100.0% | 0.172 | 0.07 | 8.41 | 0.11 | 1.59E+00 | 2.62E+00 | |
| Pb-212 | pCi/g | 37 | 37 | 100.0% | 0.686 | 0.12 | 1.5 | 0.15 | 1.15E+00 | 1.22E+00 | |
| Pb-214 | pCi/g | 38 | 38 | 100.0% | 0.613 | 0.14 | 1.39 | 0.23 | 1.07E+00 | 1.15E+00 | |
| Ra-226 | pCi/g | 34 | 34 | 100.0% | 0.888 | 0.08 | 3.33 | 0.14 | 2.03E+00 | 2.28E+00 | |
| Tl-208 | pCi/g | 38 | 38 | 100.0% | 0.637 | 0.11 | 1.41 | 0.14 | 1.07E+00 | 1.13E+00 | |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum sample requirements are met.

-- = Background concentration is not available for this chemical.

NA = Not Applicable.

**Table C-43.** Summary Statistics for CFA-05 (By Depth Zone)

| COPC | Units | Depth Zone (ft bgs) | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 0 - 0.5 | 14 | 13 | 92.9% | 6.2 | 19.2 | 9.43E+00 | 4.55E+00 |
| Lead | mg/kg | 0 - 0.5 | 14 | 14 | 100.0% | 12.4 | 631 | 1.04E+02 | 1.77E+02 |
| Ac-228 | pCi/g | 0 - 0.5 | 8 | 8 | 100.0% | 0.911 | 1.4 | 1.19E+00 | 1.41E-01 |
| Am-241 | pCi/g | 0 - 0.5 | 2 | 2 | 100.0% | 1.07 | 9.46 | 5.27E+00 | 5.93E+00 |
| Bi-212 | pCi/g | 0 - 0.5 | 6 | 6 | 100.0% | 0.893 | 1.46 | 1.26E+00 | 2.00E-01 |
| Bi-214 | pCi/g | 0 - 0.5 | 8 | 8 | 100.0% | 0.936 | 1.37 | 1.17E+00 | 1.27E-01 |
| Cs-137 | pCi/g | 0 - 0.5 | 7 | 7 | 100.0% | 0.172 | 8.41 | 2.61E+00 | 2.77E+00 |
| Pb-212 | pCi/g | 0 - 0.5 | 8 | 8 | 100.0% | 0.89 | 1.42 | 1.23E+00 | 1.52E-01 |
| Ra-226 | pCi/g | 0 - 0.5 | 8 | 8 | 100.0% | 1.38 | 3.33 | 2.26E+00 | 7.01E-01 |
| Tl-208 | pCi/g | 0 - 0.5 | 8 | 8 | 100.0% | 0.901 | 1.3 | 1.17E+00 | 1.43E-01 |
| Arsenic | mg/kg | 0.5 - 4 | 19 | 18 | 94.7% | 2.3 | 19.8 | 5.46E+00 | 4.07E+00 |
| Lead | mg/kg | 0.5 - 4 | 19 | 19 | 100.0% | 11.3 | 369 | 8.21E+01 | 9.85E+01 |
| Ac-228 | pCi/g | 0.5 - 4 | 14 | 14 | 100.0% | 1.22 | 1.36 | 1.30E+00 | 4.64E-02 |
| Am-241 | pCi/g | 0.5 - 4 | 1 | 1 | 100.0% | 1.29 | 1.29 | 1.29E+00 | 0.00E+00 |
| Bi-212 | pCi/g | 0.5 - 4 | 13 | 13 | 100.0% | 0.947 | 1.72 | 1.41E+00 | 2.29E-01 |
| Bi-214 | pCi/g | 0.5 - 4 | 14 | 14 | 100.0% | 1.05 | 1.35 | 1.18E+00 | 9.62E-02 |
| Cs-137 | pCi/g | 0.5 - 4 | 14 | 14 | 100.0% | 0.267 | 2.31 | 1.08E+00 | 5.75E-01 |
| Pb-212 | pCi/g | 0.5 - 4 | 14 | 14 | 100.0% | 1.18 | 1.37 | 1.28E+00 | 5.73E-02 |
| Ra-226 | pCi/g | 0.5 - 4 | 14 | 14 | 100.0% | 1.5 | 3.06 | 2.41E+00 | 3.65E-01 |
| Tl-208 | pCi/g | 0.5 - 4 | 14 | 14 | 100.0% | 0.982 | 1.41 | 1.20E+00 | 1.21E-01 |
| Arsenic | mg/kg | 4 - 10 | 4 | 3 | 75.0% | 6 | 8.3 | 5.56E+00 | 3.15E+00 |
| Lead | mg/kg | 4 - 10 | 4 | 4 | 100.0% | 18.2 | 70.9 | 3.24E+01 | 2.57E+01 |
| Ac-228 | pCi/g | 4 - 10 | 2 | 2 | 100.0% | 1.31 | 1.4 | 1.36E+00 | 6.36E-02 |
| Am-241 | pCi/g | 4 - 10 | NS | | | | | | |
| Bi-212 | pCi/g | 4 - 10 | 1 | 1 | 100.0% | 0.933 | 0.933 | 9.33E-01 | 0.00E+00 |
| Bi-214 | pCi/g | 4 - 10 | 2 | 2 | 100.0% | 0.998 | 0.999 | 9.99E-01 | 7.07E-04 |
| Cs-137 | pCi/g | 4 - 10 | NS | | | | | | |
| Pb-212 | pCi/g | 4 - 10 | 1 | 1 | 100.0% | 1.5 | 1.5 | 1.50E+00 | 0.00E+00 |
| Ra-226 | pCi/g | 4 - 10 | 1 | 1 | 100.0% | 2.15 | 2.15 | 2.15E+00 | 0.00E+00 |
| Tl-208 | pCi/g | 4 - 10 | 2 | 2 | 100.0% | 0.669 | 1.27 | 9.70E-01 | 4.25E-01 |
| Arsenic | mg/kg | >10 | 15 | 11 | 73.3% | 2.3 | 3.4 | 2.49E+00 | 1.02E+00 |
| Lead | mg/kg | >10 | 15 | 15 | 100.0% | 10.6 | 20.6 | 1.43E+01 | 3.08E+00 |
| Ac-228 | pCi/g | >10 | 14 | 14 | 100.0% | 0.661 | 1.22 | 9.53E-01 | 1.69E-01 |
| Am-241 | pCi/g | >10 | NS | | | | | | |
| Bi-212 | pCi/g | >10 | 8 | 8 | 100.0% | 0.871 | 1.21 | 1.08E+00 | 1.44E-01 |
| Bi-214 | pCi/g | >10 | 14 | 14 | 100.0% | 0.647 | 0.961 | 7.90E-01 | 1.07E-01 |
| Cs-137 | pCi/g | >10 | NS | | | | | | |
| Pb-212 | pCi/g | >10 | 14 | 14 | 100.0% | 0.686 | 1.25 | 9.54E-01 | 1.59E-01 |
| Ra-226 | pCi/g | >10 | 11 | 11 | 100.0% | 0.888 | 2.23 | 1.36E+00 | 3.86E-01 |
| Tl-208 | pCi/g | >10 | 14 | 14 | 100.0% | 0.637 | 1.04 | 8.96E-01 | 1.30E-01 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.

UCL values are shown only if these minimum sample requirements are met.

NS = Not Sampled.

Table C-44. Supplemental contaminant screening for OU-4-13, CFA-51: Dry Well at North End of CFA-640

| | | | Step 1 | | | Step 2 | |
|---|---|---|---|---|---|---|---|
| Workplan COPC [a] | Units | Maximum Detected Concentration | Background Concentration | | Is the maximum concentration greater than background value? | Soil Risk-Based Concentration | Is the conc greater |
| Lead | mg/kg | 37 | 23 | [b] | YES | 400 | [c] |

**Notes:**

-- = Screening concentration is not available for this chemical.

**Reference:**

[a] Idaho National Environmental and Engineering Laboratory (INEEL). 1997. Waste Area Group 4 (WAG 4) Workplan, Attachmer

[b] Rood, S.M., G.A. Harris, and G.J. White. 1995. *Background Dose Equivalent Rates and Surficial Soil, Metal, and Radionuclic*

Idaho National Engineering Laboratory, INEEL-94/0250, Rev. 0. February.

[c] U.S. Environmental Protection Agency (USEPA). 1994. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Cc

Office of Solid Waste and Emergency Response, Washington, C.C. OSWER Directive #9355.4-12. July.

**Table C-45.** Summary Statistics for CFA-51

| COPC | Units | Number of Samples | Number of Detects | Detection Frequency | Minimum Detected | Maximum Detected | Arithmetic Mean | Standard Deviation | Lognormal 95% UCL [a] | Backg Concen |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | mg/kg | 1 | 1 | 100.0% | 37 | 37 | 3.70E+01 | 0.00E+00 | | 2 |

**Notes:**

[a] A minimum of three samples, with a positive detection for at least one of the samples, is required to calculate the UCL.
UCL values are shown only if these minimum samples requirements are met.