

**Table 5-18.** Summary sampling results statistics for soil contaminants at Site CPP-14.<sup>a</sup>

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
<b>Imhoff Tanks</b>										
Ag	1.22E+01	4.89E+01	3.06E+01	2.60E+01	8.26E+01	2	2	100%	0.00E+00	2
As	4.60E+00	4.90E+00	4.75E+00	2.12E-01	5.17E+00	2	2	100%	5.80E+00	0
Ba	1.75E+02	2.07E+02	1.91E+02	2.26E+01	2.36E+02	2	2	100%	3.00E+02	0
Be	5.30E-01 B	5.60E-01 B	5.45E-01	2.12E-02	5.87E-01	2	2	100%	1.80E+00	0
Cr	5.12E+01	6.07E+01	5.60E+01	6.72E+00	6.94E+01	2	2	100%	3.30E+01	2
Cu	9.63E+01	9.63E+01	9.63E+01	NA	NA	2	1	50%	2.20E+01	1
Hg	1.20E+00	4.00E+00	2.60E+00	1.98E+00	6.56E+00	2	2	100%	5.00E-02	2
Mn	2.07E+02	2.48E+02	2.28E+02	2.90E+01	2.86E+02	2	2	100%	4.90E+02	0
Ni	2.40E+01	2.62E+01	2.51E+01	1.56E+00	2.82E+01	2	2	100%	3.50E+01	0
Pb	3.56E+01	2.11E+02	1.23E+02	1.24E+02	3.71E+02	2	2	100%	1.70E+01	2
Th	2.40E-01 B	2.40E-01 B	2.40E-01	NA	NA	2	1	50%	4.30E-01	0
V	3.10E+01	3.49E+01	3.30E+01	2.76E+00	3.85E+01	2	2	100%	4.50E+01	0
Zn	1.35E+02	4.75E+02	3.05E+02	2.40E+02	7.85E+02	2	2	100%	1.50E+02	1
Acetone	1.30E-02	2.10E-02	1.70E-02	5.66E-03	2.83E-02	2	2	100%	NA	NA
Di-n-octyl Phthalate	2.90E-01 J	2.90E-01 J	2.90E-01	NA	NA	2	1	50%	NA	NA
Bis(2-Ethylhexyl) Phthalate	9.80E-01	1.70E+00	1.34E+00	5.09E-01	2.36E+00	2	2	100%	NA	NA
Toluene	6.00E-03 J	2.90E-02	1.75E-02	1.63E-02	5.01E-02	2	2	100%	NA	NA
Total Xylenes	5.00E-03 J	2.70E-02	1.60E-02	1.56E-02	4.72E-02	2	2	100%	NA	NA
Phenol	2.20E-01 J	2.30E+00	1.26E+00	1.47E+00	4.20E+00	2	2	100%	NA	NA

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**Table 5-18.** (continued).

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
4-Methylphenol	7.60E-01 J	7.60E-01 J	7.60E-01	NA	NA	2	1	50%	NA	NA
1,2-Dichloroethane	3E-03 J	3E-03 J	3E-03	NA	NA	2	1	50%	NA	NA
1,4-Dichlorobenzene	3.10E-01 J	3.10E-01 J	3.10E-01	NA	NA	2	1	50%	NA	NA
Benzoic Acid	2.30E-01 J	3.20E-01 J	2.75E-01	6.36E-02	4.02E-01	2	2	100%	NA	NA
Methylene Chloride	1.20E-01 B	1.20E-01 B	1.20E-01	NA	NA	2	1	50%	NA	NA
Naphthalene	1.70E-01 J	1.30E+00	7.35E-01	7.99E-01	2.33E+00	2	2	100%	NA	NA
4-Chloroaniline	6.40E-01 J	1.10E+00 J	8.70E-01	3.25E-01	1.52E+00	2	2	100%	NA	NA
Phenanthrene	1.50E-01 J	3.70E-01 J	2.60E-01	1.56E-01	5.72E-01	2	2	100%	NA	NA
Fluoranthene	2.40E-01 J	7.20E-01 J	4.80E-01	3.39E-01	1.16E+00	2	2	100%	NA	NA
Pyrene	3.00E-01 J	6.60E-01 J	4.80E-01	2.55E-01	9.90E-01	2	2	100%	NA	NA
Benzo(a)anthracene	1.50E-01 J	3.80E-01 J	2.65E-01	1.63E-01	5.91E-01	2	2	100%	NA	NA
Chrysene	3.80E-01 J	3.80E-01 J	3.80E-01	NA	NA	2	1	50%	NA	NA
Benzo(b)fluoranthene	3.20E-01 J	3.20E-01 J	3.20E-01	NA	NA	2	1	50%	NA	NA
Benzo(k)fluoranthene	2.70E-01 J	2.70E-01 J	2.70E-01	NA	NA	2	1	50%	NA	NA
Benzo(a)pyrene	3.40E-01 J	3.40E-01 J	3.40E-01	NA	NA	2	1	50%	NA	NA
Aroclor-1260	6E+00 X	2.30E+01 X	1.45E+01	1.20E+01	3.85E+01	2	2	100%	NA	NA
Cs-137	4.94E+00	6.21E+00	5.58E+00	8.98E-01	7.38E+00	2	2	100%	8.20E-01	2
Np-237	1.70E+00	1.98E+00	1.84E+00	1.98E-01	2.24E+00	2	2	100%	NA	NA
Sr-90	7.10E-01	1.07E+00	8.90E-01	2.55E-01	1.40E+00	2	2	100%	4.90E-01	2
U-234	7.90E-01	1.15E+00	9.70E-01	2.55E-01	1.48E+00	2	2	100%	1.44E+00	0
U-235	5.00E-02	5.00E-02	5.00E-02	NA	NA	2	1	50%	NA	NA
U-238	5.10E-01	5.30E-01	5.20E-01	1.41E-02	5.48E-01	2	2	100%	1.40E+00	0

Table 5-18. (continued).

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>f</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
Y-90	7.00E-01	1.10E+00	9.00E-01	2.83E-01	1.47E+00	2	2	100%	NA	NA
<b>Plant</b>										
Ag	8.00E-01 B	8.30E+00 J	4.12E+00	2.77E+00	9.66E+00	11	5	45%	0E+00	5
As	2.40E+00	4.10E+00 J	3.50E+00	7.30E-01	4.96E+00	11	7	64%	5.80E+00	0
Ba	4.96E+01	1.49E+02	8.54E+01	3.16E+01	1.49E+02	11	11	100%	3.00E+02	0
Be	2.40E-01 B	6.30E-01 B	4.09E-01	1.44E-01	6.97E-01	11	10	91%	1.80E+00	0
Cd	4.00E-01 B	6.60E-01 B	5.25E-01	1.11E-01	7.47E-01	11	4	36%	2.20E+00	0
Co	3.70E+00 B	6.60E+00 B	4.72E+00	1.16E+00	7.04E+00	11	6	55%	1.10E+01	0
Cr	7.30E+00 J	3.04E+01	1.60E+01	6.44E+00	2.89E+01	11	11	100%	3.30E+01	0
Cu	9.40E+00	3.11E+01	1.50E+01	8.34E+00	3.17E+01	11	6	55%	2.20E+01	1
Hg	4E-02	1.10E-01	7.50E-02	4.95E-02	1.74E-01	11	2	18%	5.00E-02	1
Mn	1.02E+02 J	2.92E+02 J	1.69E+02	5.93E+01	2.88E+02	11	11	100%	4.90E+02	0
Ni	1.05E+01	2.65E+01	1.61E+01	5.57E+00	2.72E+01	11	11	100%	3.50E+01	0
Pb	4.60E+00 J	6.22E+01	1.68E+01	1.95E+01	5.58E+01	11	8	73%	1.70E+01	2
Sb	1.23E+01 B	1.23E+01 B	1.23E+01	NA	NA	11	1	9%	4.80E+00	1
V	1.04E+01	3.04E+01	1.82E+01	6.42E+00	3.10E+01	11	11	100%	4.50E+01	0
Zn	2.31E+01	7.71E+01	4.20E+01	1.91E+01	8.02E+01	11	8	73%	1.50E+02	0
2-Butanone	1.00E-03 J	1.00E-03 J	1.00E-03	NA	NA	11	1	9%	NA	NA
4-Nitrophenol	2.60E-01 J	2.60E-01 J	2.60E-01	NA	NA	10	1	10%	NA	NA
Di-n-octyl Phthalate	2.40E-01 J	2.40E-01 J	2.40E-01	NA	NA	10	1	10%	NA	NA
Methylene Chloride	2.50E-02 B	1.20E-01 B	7.33E-02	4.42E-02	1.62E-01	11	4	36%	NA	NA

**Table 5-18.** (continued).

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
Bis(2-Ethylhexyl) Phthalate	4.30E-02 J	4.30E-02 J	4.30E-02	NA	NA	10	1	10%	NA	NA
Toluene	4E-03 J	4E-03 J	4.00E-03	NA	NA	11	1	9%	NA	NA
Total Xylenes	4.40E-02	4.40E-02	4.40E-02	NA	NA	11	1	9%	NA	NA
Benzoic Acid	2.00E-01 J	2.00E-01 J	2.00E-01	NA	NA	10	1	10%	NA	NA
Tetrachloroethylene	1E-03 J	1E-03 J	1E-03	NA	NA	11	1	9%	NA	NA
Pentachlorophenol	3.80E-01 J	3.80E-01 J	3.80E-01	NA	NA	10	1	10%	NA	NA
Aroclor-1254	2.10E-02 JX	1.20E-01 JX	7.05E-02	7.00E-02	2.11E-01	10	2	20%	NA	NA
Aroclor-1260	1.00E-01 JX	5.70E-01 DJX	2.93E-01	2.46E-01	7.85E-01	10	3	30%	NA	NA
Am-241	1.15E+00	1.15E+00	1.15E+00	NA	NA	11	1	9%	1.10E-02	1
Cs-137	3.10E-01	3.89E+00	1.80E+00	1.40E+00	4.60E+00	11	5	45%	8.20E-01	3
Np-237	4.05E-01	5.50E+00	2.32E+00	1.50E+00	5.32E+00	11	9	82%	NA	NA
Sb-125	1.00E-01 J	1.00E-01 J	1.00E-01	NA	NA	11	1	9%	NA	NA
Sr-90	7.00E-02	5.70E-01	2.39E-01	1.71E-01	5.81E-01	11	7	64%	4.90E-01	1
U-234	9.00E-02 J	6.89E+00	8.89E-01	2.00E+00	4.89E+00	11	11	100%	1.44E+00	1
U-235	5.00E-02	6.80E-01	3.65E-01	4.45E-01	1.26E+00	11	2	18%	NA	NA
U-238	1.00E-01 J	5.21E+01	5.16E+00	1.56E+01	3.64E+01	11	11	100%	1.40E+00	2
Y-90	1.00E+01 J	4.00E-01	2.30E-01	1.54E-01	5.38E-01	7	3	43%	NA	NA
<b>Drain Field</b>										
Ag	3.30E+00 J	3.30E+00 J	3.30E+00	NA	NA	3	1	33%	0E+00	1
As	1.10E+00 J	8.60E+00	4.80E+00	3.75E+00	1.23E+01	3	3	100%	5.80E+00	1
Ba	7.12E+01	1.99E+02	1.17E+02	7.15E+01	2.60E+02	3	3	100%	3.00E+02	0

Table 5-18. (continued).

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
Be	4.30E-01 B	4.30E-01 B	4.30E-01	NA	NA	3	1	33%	1.80E+00	0
Cd	8.10E-01 B	8.10E-01 B	8.10E-01	NA	NA	3	1	33%	2.20E+00	0
Co	4.40E+00 B	9.00E+00 B	6.00E+00	2.60E+00	1.12E+01	3	3	100%	1.10E+01	0
Cr	1.57E+01	2.52E+01	1.90E+01	5.37E+00	2.97E+01	3	3	100%	3.30E+01	0
Cu	1.89E+01	1.94E+01	1.92E+01	3.54E-01	1.99E+01	3	2	67%	2.20E+01	0
Hg	3.80E-01 J	3.80E-01 J	3.80E-01	NA	NA	3	1	33%	5.00E-02	1
Mn	8.13E+01	4.13E+02 J	2.38E+02	1.67E+02	5.72E+02	3	3	100%	4.90E+02	0
Ni	1.33E+01	2.26E+01	1.75E+01	4.71E+00	2.69E+01	3	3	100%	3.50E+01	0
Pb	9.40E+00 J	1.55E+01 J	1.27E+01	3.08E+00	1.89E+01	3	3	100%	1.70E+01	0
Se	4.30E-01 B	6.90E-01 J	5.60E-01	1.84E-01	9.28E-01	3	2	67%	2.20E-01	2
Th	2.10E-01 B	2.40E-01 B	2.25E-01	2.12E-02	2.67E-01	3	2	67%	4.30E-01	0
V	1.47E+01	2.97E+01	2.24E+01	7.51E+00	3.74E+01	3	3	100%	4.50E+01	0
Zn	4.50E+01	8.86E+01	6.78E+01	2.19E+01	1.12E+02	3	3	100%	1.50E+02	0
Di-n-butyl Phthalate	9.00E-02 J	9.00E-02 J	9.00E-02	NA	NA	3	1	33%	NA	NA
Naphthalene	1.20E-01 J	1.80E-01 J	1.50E-01	4.24E+00	8.63E+00	3	2	67%	NA	NA
Phenanthrene	8.70E-02 J	8.70E-02 J	8.70E-02	NA	NA	3	1	33%	NA	NA
Aroclor-1260	7.20E-01 DJX	7.20E-01 DJX	7.20E-01	NA	NA	3	1	33%	NA	NA
Cs-137	3.15E+00	3.15E+00	3.15E+00	NA	NA	3	1	33%	8.20E-01	1
Np-237	5.90E-01	1.40E+00	1.04E+00	4.12E-01	1.86E+00	3	3	100%	NA	NA
Sr-90	9.00E-02	8.80E-01	5.00E-01	3.96E-01	1.29E+00	3	3	100%	4.90E-01	2
U-234	3.10E-01	4.20E-01	3.73E-01	5.69E-02	4.87E-01	3	3	100%	1.44E+00	0
U-238	2.30E-01	3.90E-01	2.90E-01	8.72E-02	4.64E-01	3	3	100%	1.40E+00	0

**Table 5-18. (continued).**

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
Y-90	9.00E-02	9.00E-01	4.95E-01	5.73E-01	1.64E+00	2	2	100%	NA	NA

a. NOTE:

- Duplicate sample results were not included in the statistical analysis.
- Analytical results are from 17 soil samples collected from five pipe excavation locations and 10 boreholes installed under the OU 3-05 Track 2 investigation. Results are provided in The Track 2 Summary Report, Waste Area Group 3, Operable Unit 3-05, Old Sewage Treatment Plant West of CPP-664 (WINCO 1993j) and Appendix G of the OU3-13 RI/FS Part A (DOE-ID 1997b).
- Selected samples were analyzed for metals, radionuclides, VOCs, SVOCs, PCBs, pesticides/herbicides and dioxin/furans. Only those constituents that were identified above detection limits are shown in the table except for the following constituents which were detected but are not considered to be present at hazardous concentrations: Al, Ca, Fe, Mg, K and Na.
- Samples rejected because of an unacceptable quality control parameter are not included in the table.

b. The RME concentration is the 95% upper value based on the empirical rule (95% of the measurements lie within two standard deviations of their mean).

c. The INEEL background concentrations represent the 95% upper confidence limit (Rood et al. 1995).

J = The analyte was identified in the sample but the numerical result may not be accurate.

B = The analyte reported value is <CRDL, but > IDL.

JX = The reported value is an estimate quantity manually entered onto the results form.

DJX = The compound was analyzed at a secondary dilution factor and was an estimated quantity that was manually entered onto the results form.

NA = Not Applicable.

RME = Reasonable Maximum Exposure.

**Table 5-19.** Summary sampling results statistics for soil contaminants at Site CPP-37A, Gravel Pit #1.<sup>a</sup>

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
As	4.10E+00	8.70E+00	5.83E+00	1.20E+00	8.23E+00	14	14	100%	5.80E+00	8
Ba	7.87E+01	2.29E+02	1.30E+02	4.85E+01	2.27E+02	14	14	100%	3.00E+02	0
Cd	3.50E-01 B	1.50E+00	8.27E-01	3.45E-01	1.52E+00	14	14	100%	2.20E+00	0
Cr	1.02E+01	3.01E+01	1.88E+01	5.61E+00	3.00E+01	14	14	100%	3.30E+01	0
Hg	1.20E-01 J	9.60E-01	5.70E-01	4.18E-01	1.41E+00	14	4	29%	5.00E-02	4
Pb	7.10E+00	1.77E+01	1.10E+01	3.75E+00	1.85E+01	14	14	100%	1.70E+01	1
Sc	2.00E-01 BJ	4.10E-01 B	2.34E-01	7.28E-02	3.80E-01	14	14	100%	2.20E-01	1
Methylene Chloride	4.70E-02	1.40E-01	8.93E-02	3.91E-02	1.68E-01	NA	4	NA	NA	NA
Toluene	1.00E-03 J	1.00E-03 J	1.00E-03	NA	NA	NA	1	NA	NA	NA
1,1,1-Trichloro- ethane	5.00E-03 J	5.00E-03 J	5.00E-03	NA	NA	NA	1	NA	NA	NA
Am-241	2.30E-01	9.90E-01	4.76E-01	2.56E-01	9.88E-01	13	7	54%	1.10E-02	7
Co-60	5.50E-01	5.50E-01	5.50E-01	NA	NA	13	1	8%	NA	NA
Cs-137	1.40E-01	3.82E+00	1.13E+00	1.22E+00	3.57E+00	13	9	69%	8.20E-01	4
Np-237	3.20E-01	1.07E+00	6.62E-01	2.49E-01	1.16E+00	13	11	85%	NA	NA
Pu-238	1.00E-01	1.20E-01	1.10E-01	1.41E-02	1.38E-01	13	2	15%	4.90E-03	2
Sr-90	1.70E-01	6.90E-01	3.70E-01	1.69E-01	7.08E-01	13	9	69%	4.90E-01	2
U-234	2.20E-01	7.10E-01	3.63E-01	1.37E-01	6.37E-01	13	12	92%	1.44E+00	0
U-235	5.00E-02	5.00E-02	5.00E-02	NA	NA	13	1	8%	NA	NA
U-238	7.00E-02	3.99E+00	7.27E-01	1.00E+00	2.73E+00	13	13	100%	1.40E+00	1

a. NOTE:

- Duplicate sample results were not included in the statistical analysis.
- Analytical results are from samples collected from ten borings installed under the OU 3-02 Track 2 Preliminary Scoping Package for CPP-37 by Golder Associates, Inc. Results are provided in the Draft Report for the Idaho Chemical Processing Plant Drilling & Sampling Program at Land Disposal Unit CPP-37 (Golder Associates 1992) and Appendix G of the OU 3-13 RI/FS Part A (DOE-ID 1997b).
- Selected samples were analyzed for metals, radionuclides, VOCs, SVOCs, PCBs and pesticides/herbicides. Only those constituents that were identified above detection limits are shown in the table.
- Samples rejected because of an unacceptable quality control parameter are not included in the table.

b. The RME concentration is the 95% upper value based on the empirical rule (95% of the measurements lie within two standard deviations of their mean).

c. The INEEL background concentrations represent the 95% upper confidence limit (Rood et al. 1995).

J = The analyte was identified in the sample but the numerical result may not be accurate.

B = The analyte reported value is < RDL, but > IDL.

NA = Not applicable or not available.

RME = Reasonable Maximum Exposure.

**5.3.3.18 CPP-37b, Gravel Pit and Debris Disposal Pit #2.** Site CPP-37b is located inside the INTEC security fence. Before being backfilled, the site was approximately 79 m (260 ft) in width, 116 m (380 ft) in length and was 7.9-m (26-ft) deep and area of approximately 9,179 m<sup>2</sup> (98,800 ft<sup>2</sup>). Prior to 1982, this pit was often used for the disposal of waters released from the sludge dewatering pit of the old STP (CPP-715). After 1982, the pit was used to dispose of construction debris, some of which may have been radionuclide contaminated. Anecdotal information suggests that the Pit may also have been used for the disposal of chemical wastes. Additionally, the CPP-37b was open in 1964 when the release of radioactive steam associated with Site CPP-26 occurred. Radioactive steam containing Cs-137 was released from a decontamination header in the HLLW Tank Farm. The year this pit was backfilled is unknown, but it is believed to have been backfilled to grade shortly after its use as a construction debris landfill was discontinued. Modeling and sampling of the site indicated the site is not a significant contributor to groundwater risk or surface exposure risk. However, since the pit was previously used as a landfill, characterization is considered insufficient to recommend no further action at the site. Table 5-20 provides summary sampling results statistics for soil samples from Site CPP-37B.

**5.3.3.19 CPP-48 (French Drain South of CPP633).** Site CPP-48 was an excess chemical dump tank located south of the old WCF (CPP-633) that was used as a french drain from 1975 to 1981 (herein referred to as "dump tank"). The dump tank was made of steel and measured approximately 1.5 m (5 ft) in diameter and 3.7 m (12 ft) long, with a lid and no bottom. The top of the dump tank stood approximately 0.6 m (2 ft) above the ground surface, with the tank bottom at 3 m (10 ft) bgs. As part of the calcining process, nitric acid and other chemicals consisting primarily of aluminum nitrate and calcium nitrate used in the calcining process were disposed into CPP-48. The chemicals and radionuclides released to the dump tank were not treated or neutralized before percolating into the soil matrix through the bottom of the tank. A portable above ground disposal line was used to discharge effluent to the dump tank. Table 5-21 provides summary sampling results statistics for soils collected at CPP-48.

Prior to the installation of an excess chemical dump tank (CPP-48), in 1975, waste chemicals were disposed directly to the soil in a trench-like depression located at the dump tank site. The trench is approximately 3 × 1.5 × 0.3 m (10 × 5 × 1 ft) in size. From 1975 to 1981, chemicals from the calcining process were disposed directly to the CPP-48 dump tank. The above ground piping used to move calcining effluent from CPP-633 to CPP-48 was a flexible hose that, when not in use, was "rolled up" and stored in CPP-633. In August 1993, the dump tank was dismantled, packaged, and removed to the Waste Experimental Reduction Facility (WERF).

Records indicate that the chemical disposal to CPP-48 was in low quantities (several gallons at a time). Through the years of operation, however, site personnel indicate thousands of gallons of waste effluent may have been disposed. No records were kept regarding the volume of effluent disposed or the constituents in the waste stream, but it is suspected the mercury, Cs-137, Sb-125, and Eu-155 may have been introduced to this site via waste chemicals from the calcining process.

In March 1991, a RCRA sampling program was conducted to characterize possible soil contaminants in the vicinity of the dump tank. Samples were collected from a boring drilled to 14 m (46.5 ft) bgs and analyzed for RCRA metals, pH, nitrite, and nitrate. Analysis indicated soil samples contained no detectable levels of the VOCs, semiVOCs, pesticides, dioxin/furan, or herbicides.

**Table 5-20.** Summary sampling results statistics for soil contaminants at Site CPP-37B, Gravel Pit #2.<sup>a</sup>

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
Ag	5.60E-01	8.50E+00	4.19E+00	4.01E+00	1.22E+01	28	3	11%	0E+00	3
As	1.20E+00 B	1.14E+01 J	4.42E+00	1.84E+00	8.10E+00	28	28	100%	5.80E+00	3
Ba	5.18E+01 J	4.68E+02	1.26E+02	7.73E+01	2.81E+02	28	28	100%	3.00E+02	1
Cd	4.10E-01 B	3.20E+00	1.22E+00	6.55E-01	2.53E+00	28	22	79	2.20E+00	1
Cr	1.08E+01	4.26E+01	1.85E+01	7.06E+00	3.26E+01	28	28	100%	3.30E+01	1
Hg	1.20E-01 J	1.20E-01 J	1.20E-01	NA	NA	28	1	3%	5.00E-02	1
Pb	1.90E+00 J	2.26E+01 J	9.60E+00	4.56E+00	1.87E+01	28	28	100%	1.70E+01	2
Se	2.00E-01 B	6.50E-01 B	2.81E-01	1.32E-01	5.45E-01	28	15	54%	2.20E-01	4
Methylene Chloride	3.50E-02	2.90E-01	1.20E-01	1.04E-01	3.28E-01	NA	7	NA	NA	NA
Kepon	7.00E-02 J	7.00E-02 J	7.00E-02	NA	NA	NA	1	NA	NA	NA
Acenaphthene	3.70E-02 J	3.70E-02 J	3.70E-02	NA	NA	NA	1	NA	NA	NA
Fluorene	6.10E-02 J	6.10E-02 J	6.10E-02	NA	NA	NA	1	NA	NA	NA
Phenanthrene	4.00E-01	4.00E-01	4.00E-01	NA	NA	NA	1	NA	NA	NA
Anthracene	3.50E-01	3.50E-01	3.50E-01	NA	NA	NA	1	NA	NA	NA
Fluoranthene	2.20E-01 J	2.20E-01 J	2.20E-01	NA	NA	NA	1	NA	NA	NA
Pyrene	2.10E-01 J	2.10E-01 J	2.10E-01	NA	NA	NA	1	NA	NA	NA
Benzo(a)anthr- acene	7.20E-02 J	7.20E-02 J	7.20E-02	NA	NA	NA	1	NA	NA	NA
Chrysene	1.10E-01 J	1.10E-01 J	1.10E-01	NA	NA	NA	1	NA	NA	NA
bis(2-Ethyl- hexyl)Phthalate	2.40E-01 J	2.40E-01 J	2.40E-01	NA	NA	NA	1	NA	NA	NA
Aroclor-1254	2.30E-01	2.30E-01	2.30E-01	NA	NA	NA	1	NA	NA	NA

**Table 5-20.** (continued).

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
Aroclor-1260	4.20E-01	4.20E-01	4.20E-01	NA	NA	NA	1	NA	NA	NA
Am-241	2.1E-01	3.89E+00	1.18E+00	1.40E+00	3.98E+00	26	6	26%	1.10E-02	6
Cs-137	1.40E-01	6.31E+00	2.04E+00	1.67E+00	5.38E+00	26	17	65%	8.20E-01	11
I-129	1.57E+00	1.57E+00	1.57E+00	NA	NA	26	1	4%	NA	NA
Np-237	3.20E-01	8.60E-01	5.13E-01	1.26E-01	7.65E-01	26	26	100%	NA	NA
Pu-238	6.00E-02	5.00E-01	1.99E-01	1.57E-01	5.13E-01	26	8	31%	4.90E-03	8
Sr-90	8.00E-02	4.31E+00	9.30E-01	1.06E+00	3.05E+00	26	21	81%	4.90E-01	12
U-234	1.50E-01	1.21E+00	3.12E-01	2.14E-01	7.40E-01	26	26	100%	1.44E+00	0
U-235	5.00E+02	7.00E-02	5.75E-02	9.57E-03	7.66E-02	26	4	15%	NA	NA
U-238	1.60E-013	7.44E+00	7.87E-01	1.46E+00	3.71E+00	26	26	100%	1.40E+00	3

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a. NOTE:

- Duplicate sample results were not included in the statistical analysis.
- Analytical results are from samples collected from four borings installed under the OU 3-02 Track 2 Preliminary Scoping Package for CPP-37 by Golder Associates, Inc. Results are provided in the Draft Report for the Idaho Chemical Processing Plant Drilling & Sampling Program at Land Disposal Unit CPP-37 (Golder Associates 1992) and Appendix G of the OU3-13 RI/FS Part A (DOE-ID 1997b).
- Selected samples were analyzed for metals, radionuclides, VOCs, SVOCs, PCBs and pesticides/herbicides. Only those constituents that were identified above detection limits are shown in the table.
- Samples rejected because of an unacceptable quality control parameter are not included in the table.

b. The RME concentration is the 95% upper value based on the empirical rule (95% of the measurements lie within two standard deviations of their mean).

c. The INEEL background concentrations represent the 95% upper confidence limit (Rood et al. 1995).

J = The analyte was identified in the sample but the numerical result may not be accurate.

B = The analyte reported value is < RD L, but > ID L.

NA = Not applicable or not available.

RME = Reasonable Maximum Exposure.

**Table 5-21.** Summary sampling results statistics for soil contaminants at Site CPP-48.<sup>a</sup>

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
As	2.70E+00	1.32E+01	5.45E+00	2.92E+00	1.13E+01	11	11	100%	5.80E+00	3
Ba	3.70E+01 B	3.14E+02	9.92E+01	7.51E+01	2.49E+02	11	11	100%	3.00E+02	1
Cr	7.70E+00	3.96E+01	1.79E+01	8.10E+00	3.41E+01	11	11	100%	3.30E+01	1
Cu	1.05E+01 J	1.05E+01 J	1.05E+01	NA	NA	1	1	100%	2.20E+01	0
Hg	5.10E-01	9.50E-01	7.87E-01	2.41E-01	1.27E+00	11	3	27%	5.00E-02	3
Ni	1.89E+01	1.89E+01	1.89E+01	NA	NA	1	1	100%	3.50E+01	0
Pb	4.60E+00	2.39E+01	9.51E+00	6.05E+00	2.16E+01	8	8	100%	1.70E+01	1
V	1.80E+01	1.80E+01	1.80E+01	NA	NA	1	1	100%	4.50E+01	0
Zn	4.52E+01	4.52E+01	4.52E+01	NA	NA	1	1	100%	1.50E+02	0
Nitrate	7.05E-01	5.71E+00	2.58E+00	2.42E+00	7.42E+00	7	5	71%	NA	NA
Nitrite	5.29E-01	5.90E-01	5.72E-01	2.91E-02	6.30E-01	7	4	57%	NA	NA
Nitrate/Nitrite	9.60E-01	5.40E+00	2.88E+00	2.12E+00	7.12E+00	4	4	100%	NA	NA
Chloride	1.20E+00 J	3.30E+00 J	2.42E+00	8.92E-01	4.20E+00	4	4	100%	NA	NA
Fluoride	5.20E+00	2.64E+02	1.91E+02	1.24E+02	4.39E+02	4	4	100%	NA	NA
Sulfate	2.21E+01	1.31E+02	5.18E+01	5.31E+01	1.58E+02	4	4	100%	NA	NA
Sulfide	1.56E+00	1.56E+00	1.56E+00	NA	NA	1	1	100%	NA	NA
Tin	3.00E-02	3.00E-02	3.00E-02	NA	NA	1	1	100%	NA	NA
Cs-137	3.30E+00	6.50E+01	4.13E+01	2.41E+01	8.95E+01	11	5	45%	8.20E-01	5
Eu-155	5.20E-01	6.70E-01	5.95E-01	1.06E-01	8.07E-01	4	2	50%	NA	NA
Pu-238	6.00E-02	9.00E-02	7.50E-02	1.29E-02	1.01E-01	4	4	100%	4.90E-03	4
Sb-125	2.40E+00	5.30E+00	3.28E+00	1.38E+00	6.04E+00	11	4	36%	NA	NA

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**Table 5-21. (continued).**

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
Sr-90	1.20E-01	2.60E-01	1.87E-01	7.02E-02	3.27E-01	8	3	38%	4.90E-01	0
U-234	1.10E+00	2.50E+00	1.58E+00	6.29E-01	2.84E+00	4	4	100%	1.44E+00	1
U-238	1.10E+00	2.70E+00	1.68E+00	7.04E-01	3.09E+00	4	4	100%	1.40E+00	2
Gross Alpha	9.00E+00	1.40E+01	1.15E+01	3.54E+00	1.86E+01	4	2	50%	NA	NA
Gross Beta	1.12E+02	1.22E+02	1.18E+02	4.32E+00	1.27E+02	4	4	100%	NA	NA

a. NOTE:

- Duplicate sample results were not included in the statistical analysis.
- Analytical results are from samples collected from 1 boring installed in 1991 and from three boreholes and excavated soil in 1993. Results are provided in the Closure Plan for Land Disposal Unit CPP-48 (INEL 1991) and the ERIS database.
- Selected samples were analyzed for inorganics, radionuclides, VOCs, SVOCs, pesticides/herbicides, and dioxins/furans. Only those constituents that were identified above detection limits are shown in the table.
- Samples rejected because of an unacceptable quality control parameter are not included in the table.

b. The RME concentration is the 95% upper value based on the empirical rule (95% of the measurements lie within two standard deviations of their mean).

c. The INEEL background concentrations represent the 95% upper confidence limit (Rood et al. 1995).

J = The analyte was identified in the sample but the numerical result may not be accurate.

B = The analyte reported value is < RDL, but > IDL.

NA = Not applicable or not available.

In August 1993, the dump tank was removed, cut into sections, packaged, and delivered to WERF for disposal. Four soil samples were taken at the bottom of the dump tank excavation (3 m [10 ft] bgs) and at (3.7 m [12 ft] bgs), to determine possible soil contamination in the underlying soil. Samples were analyzed for kerosene, VOCs, semiVOCs, RCRA metals, and radionuclides. Kerosene, VOC, and semiVOC constituents were not detected. Analysis for radionuclide contamination showed a Cs-137 concentration highest at 3.7 m (12 ft) bgs with  $65 \pm 1$  pCi/g, an Sb-125 concentration of  $5.3 \pm 0.2$  pCi/g at 3 m (10 ft), and the highest Eu-155 concentration of  $0.67 \pm 0.10$  pCi/g at 3.7 m (12 ft).

**5.3.3.20 CPP-44.** A grease pit south of CPP-608 has an ecological HI greater than 1.0 from exposure to cadmium, chromium III, chromium VI, lead, mercury, nickel, and decanal. Cadmium and nickel are native metals that are eliminated as COPCs when compared to 10X background (Rood et al. 1995). Table 5-22 provides summary sampling results statistics for soils collected at CPP-44.

**5.3.3.21 CPP-55.** An area contaminated with paint solvents, has an ecological HI greater than 1.0 from exposure to metals (arsenic, chromium III, chromium VI, lead, mercury, nickel, selenium, and silver). Arsenic, chromium III, lead, and nickel are native metals that are eliminated as COPCs when compared to 10X background (Rood et al. 1995). Chromium is not expected to persist in the environment in the chromium VI form (Bartlett and Kimble 1976, Rai et al. 1989). Mercury remains a concern after this initial screening with a maximum concentration of 5.2 mg/kg. The next highest was 0.62. It is highly probable that the one sample having the high hit was a small hotspot that would not contribute that greatly to average exposure. Table 5-23 provides summary sampling results statistics for soils collected at CPP-55.

#### 5.3.4 Perched Water (Group 4)

Perched water consists of water in the vadose zone that is saturating sediments or basalts above the regional aquifer (Figure 5-2 and 5-3). The perched water is discussed in Sections 5.1 and 5.2. Contaminants already in the perched water are a potential source of SRPA contamination. Contaminants of concern (Sr-90) were selected based on transport of the contaminant to the SRPA, and future ingestion of SRPA groundwater post 2095. Other contaminants are summarized in the following paragraphs. The Perched Water (Group 4) is identified as containing low-level threat wastes. As noted in Section 5.2, Table 5-1, the perched water is a result of recharge from man-made sources at INTEC. When INTEC operations cease the recharge sources will stop and the perched water bodies will not yield sufficient water to be usable to future users.

As part of the WAG 3 RI, a complete round of groundwater samples were collected during May and June 1995 from all perched water wells having sufficient water for sample collection. These data are summarized in Table 5-24. The results of previous groundwater sampling efforts have been described in *the WAG 3 Comprehensive RI/FS Work Plan* (LITCO 1995c). Figure 5-6 shows well locations where perched water has been observed at INTEC and Figure 5-7 shows measured Sr-90 activities in the perched water.

The only chemical constituent in the upper perched groundwater zone beneath the northern portion of INTEC detected above either a Federal primary or secondary MCL was nitrate. The MCL for nitrate is 10 mg/L. The highest nitrate/nitrite concentrations (35.4 mg/L in well CPP 55-06 and 26.8 mg/L in well MW-10) were measured in the southeastern portion of the northern perched groundwater.

**Table 5-22.** Summary statistics for soil contaminants at Site CPP-44.<sup>a</sup>

Contaminants	Soil Concentration (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>					
As	2.1E+00 J	7.1E+00 J	4.66E+00	2.32E+00	9.30E+00	5	5	100%	5.80E+00	2
Be	8.80E-01	1.60E+00	1.17E+00	3.50E-01	1.87E+00	6	4	67%	1.80E+00	0
Cd	1.6E+00 J	8.40E+00 J	4.95E+00	2.58E+00	1.01E+01	6	6	100%	2.20E+00	5
Cr	2.93E+01 J	1.54E+03 J	5.17E+02	5.99E+02	1.72E+03	6	6	100%	3.30E+01	5
Cu	1.69E+01 J	4.78E+01 J	2.71E+01	1.17E+01	5.05E+01	6	6	100%	2.20E+01	3
Hg	2.60E-01	5.00E+00	2.43E+00	1.74E+00	5.91E+00	6	6	100%	5.00E-02	6
Ni	3.5E+01 J	3.44E+02 J	1.54E+02	1.10E+02	3.74E+02	6	6	100%	3.50E+01	5
Pb	8.9E+00 J	2.81E+02 J	8.69E+01	1.12E+02	3.11E+02	6	6	100%	1.70E+01	3
Sb	6.6E-01 BJ	1.9E+00 BJ	1.09E+00	7.00E-01	2.49E+00	6	3	50%	4.80E+00	0
Se	1.5E-01 BJ	2.20E+00 J	1.18E+00	1.45E+00	4.08E+00	6	2	33%	2.20E-01	1
Th	1.1E-01 BJ	4.70E-01 BJ	3.40E-01	2.00E-01	7.40E-01	6	3	50%	4.30E-01	1
Zn	4.03E+01 J	1.22E+02 J	6.79E+01	2.90E+01	1.26E+02	6	6	100%	1.50E+02	0
1,1,1-Trichloro-ethane	5.00E-03 J	5.00E-03 J	5.00E-03	NA	NA	6	1	17%	NA	NA
2-Pentanone, 4-hydroxy 4-methyl	7.80E+00 J	9.50E+00 J	8.65E+00	1.20E+00	1.11E+01	6	2	33%	NA	NA
Decanal	9.00E-03 J	9.00E-03 J	9.00E-03	NA	NA	6	1	17%	NA	NA
Oil and Grease	2.58E+03 J	3.83E+03 J	3.21E+03	8.84E+02	4.98E+03	6	2	33%	NA	NA

a. NOTE:

- Duplicate sample results were not included in the statistical analysis.
- Analytical results are from soil samples collected from the surface soil overlying the pad, grease pit trench and the sump beneath the grease pit trench. Results are provided in the Track 2 Draft Final Scoping Summary Report – OU 3-10, Reference 10, Analytical Data Report, CPP-44 Grease Pit South of Building 608, November, 1993, (LITCO 1994).
- Selected samples were analyzed for metals, VOCs, SVOCs, PCBs, and TPH. Only those constituents that were identified above detection limits are shown in the table.
- Samples rejected because of an unacceptable quality control parameter are not included in the table.

b. The RME concentration is the 95% upper value based on the empirical rule (95% of the measurements lie within two standard deviations of their mean).

c. The INEEL background concentrations represent the 95% upper confidence limit (Rood et al. 1995).

J = The analyte was identified in the sample but the numerical result may not be accurate.

B = The analyte reported value is < RDL, but > IDL.

NA = Not applicable.

**Table 5-23. Summary statistics for soil contaminants at Site CPP-55.<sup>a</sup>**

Contaminants	Soil Concentration, (mg/kg [nonradionuclide] or pCi/g [radionuclide])					Number of Samples	Number of Detects	Frequency of Detection	INEEL Background <sup>c</sup> (mg/kg or pCi/g)	Number of Samples Greater than Background
	Minimum	Maximum	Mean	Standard Deviation	RME <sup>b</sup>					
Ag	1.90E+00	6.10E+00	3.00E+00	1.31E+00	5.62E+00	49	16	33%	0.00E+00	16
As	3.80E+00	1.34E+01	6.34E+00	1.78E+00	9.90E+00	49	49	100%	5.80E+00	30
Ba	7.00E+01	6.09E+02	1.59E+02	1.01E+02	3.60E+02	49	49	100%	3.00E+02	4
Cd	9.40E-01	1.40E+00	1.16E+00	1.90E-01	1.54E+00	49	4	8%	2.20E+00	0
Cr	1.33E+01	6.47E+01	2.54E+01	9.09E+00	4.35E+01	49	48	98%	3.30E+01	6
Hg	5.00E-02	5.20E+00	4.30E-01	1.03E+00	2.49E+00	49	24	49%	5.00E-02	22
Ni	1.38E+01	1.21E+02	2.70E+01	2.04E+01	6.77E+01	49	49	100%	3.50E+01	7
Pb	4.10E+00	3.20E+01	9.59E+00	5.13E+00	1.99E+01	49	49	100%	1.70E+01	2
Sr-90	4.30E+03	4.80E+03	4.55E+03	3.54E+02	5.26E+03	5	2	40%	4.90E-01	2

a. NOTE:

- Duplicate sample results were not included in the statistical analysis.
- Analytical results are from samples collected from 11 boreholes drilled during the 1989-90 CPP-55 investigation by Golder Associates. Analytical results used to develop this table were taken from the Closure Report for CPP-55, Mercury Contaminated Area (DOE 1990) that was provided in the WINCO Track 1 Decision Document Package OU 3-02, Site CPP-55, Mercury Contaminated Area South of CPP T-15 (WINCO 1993).
- Selected samples were analyzed for VOC's, metals and radionuclides as well as the full 40 CFR 264 Appendix 8 and Target Compound List constituents. Those constituents identified in the Closure Report for CPP-55 are shown in the table except for the iron and K-40 which were detected but are not considered to be present at hazardous concentrations.
- Three organic constituents: toluene, 4-methyl 2-pentanone, and bis (2-ethylhexyl) phthalate were detected in the VOC analyses. However, all three were eliminated from further consideration during the validation procedure because all three are recognized laboratory contaminants.
- Samples rejected because of an unacceptable quality control parameter were not included in the table.

b. The RME concentration is the 95% upper value based on the empirical rule (95% of the measurements lie within two standard deviations of their mean).

c. The INEEL background concentrations represent the 95% upper confidence limit (Rood et al. 1995).

B = The analyte reported value is < RDL, but > IDL.

NA = Not applicable.

**Table 5-24.** Summary sampling results statistics for contaminants in the perched water wells (May-June 1995).<sup>a</sup>

Contaminants	Water concentration, mg/L or pCi/L					Number of Samples	Number of Detects	Frequency of Detection
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>			
Ag	7.70E-04 BNJ	1.40E-03 B	1.09E-03	4.45E-04	1.98E-03	16	2	13%
As	3.40E-03 B	4.90E-03 B	4.17E+00	7.51E-01	5.67E+00	16	3	19%
Ba	7.14E-02 B	3.94E-01	1.95E-01	9.14E-02	3.78E-01	16	16	100%
Be	1.20E-04	1.20E-04	1.20E-04	NA	NA	16	1	6%
Chloride	2.15E+01	1.25E+02	5.49E+01	2.78E+01	1.11E+02	16	16	100%
Co	5.70E-04	1.30E-03	7.80E-04	2.52E-04	1.28E-03	16	8	50%
Cr	4.30E-03 B	1.11E-02	6.05E-03	2.52E-03	1.11E-02	16	6	38%
Cu	1.30E-03 B	1.49E-02 B	3.75E-03	4.53E-03	1.28E-02	16	8	50%
Fluoride	1.60E-01	3.60E-01	2.51E-01	4.68E-02	3.45E-01	16	16	100%
Mn	8.50E-04 B	1.86E-01	2.11E-02	5.15E-02	1.24E-01	16	13	81%
Ni	2.50E-03 B	7.50E-03 B	4.63E-03	2.58E-03	9.79E-03	16	3	19%
NO <sub>3</sub> /NO <sub>2</sub> - N	3.30E+00	6.96E+01	1.99E+01	1.69E+01	5.37E+01	16	16	100%
Pb	2.00E-03 BJ	2.00E-03 BJ	2.00E-03	NA	NA	16	1	6%
Sb	2.00E-03 B	6.40E-03 B	3.60E-03	1.67E-03	6.94E-03	16	5	31%
Se	3.00E-03 B	4.00E-03 B	3.33E-03	5.77E-04	4.48E-03	16	3	19%
Sulfate	2.62E+01	6.18E+01	4.03E+01	1.27E+01	6.57E+01	16	16	100%
Th	3.30E-03 B	5.00E-03 B	4.15E-03	1.20E-03	6.55E-03	16	2	13%
V	1.50E-03 BJ	6.70E-03 B	3.56E-03	1.81E-03	7.18E-03	16	11	69%
Zn	2.60E-03 B	6.93E-02 EJ	2.15E-02	2.06E-02	6.27E-02	16	10	63%
Am-241	3.00E-02	1.60E-01	9.50E-02	9.19E-02	2.79E-01	16	2	13%
Pu-238	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	16	2	13%
Pu-239/240	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	16	2	13%
Sr-90	7.00E-01	3.20E+05	4.06E+04	8.60E+04	2.13E+05	16	14	88%

**Table 5-24. (continued).**

Contaminants	Water concentration, mg/L or pCi/L					Number of Samples	Number of Detects	Frequency of Detection
	Minimum	Maximum	Arithmetic Mean	Standard Deviation	RME <sup>b</sup>			
Tc-99	4.00E-01	7.36E+02 J	8.96E+01	1.91E+02	4.72E+02	16	14	88%
Tritium	6.21E+02	7.30E+04	2.00E+04	2.35E+04	6.70E+04	16	14	88%
U-234	1.90E+00 J	1.18E+01	4.70E+00	3.24E+00	1.12E+01	16	7	44%
U-238	8.00E-01 J	2.70E+00 J	1.94E+00	6.08E-01	3.16E+00	16	7	44%
Gross Alpha	2.30E+00	1.14E+03	1.88E+02	3.68E+02	9.24E+02	16	9	56%
Gross Beta	5.20E+00	5.89E+05	7.00E+04	1.51E+05	3.72E+05	16	16	100%

a. NOTE:

- Duplicate and QC sample results were not included in the statistical analysis.
- Analytical results are from perched groundwater samples collected during May and June 1995 as part of the OU 3-13 RI. Results are provided in Table 4-2 of the OU3-13 RI/FS Part A (DOE-ID 1997b) and the ERIS Database.
- Samples were analyzed for miscellaneous inorganics, TAL inorganics and radionuclides. Only those constituents that were identified above detection limits in the samples are shown in the table except for the following constituents which were detected but are not considered to be present at hazardous concentrations: Ca, Fe, Mg, K, Na, Alkalinity, Bic Alkaline, Carbonate, TKN and Ammonia-N.
- Samples rejected because of an unacceptable quality control parameter were not included in the table.

b. The RME concentration is the 95% upper value based on the empirical rule (95% of the measurements lie within two standard deviations of their mean).

B = Contaminant in associated blank.

E = The reported value is an estimate because of interference.

J = Estimated concentration.

N = Spiked sample recovery was not within control limits.

NA = Not applicable.