Soil - Area 3 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-P1	PA-P1-15	N	6	1.3	1.4	< 1
PA-P1	PA-P1-15B	FD	7.4	1.6	1.3	1.7 J
PA-P10	PA-P10-1	N	5.6	1.3	1.1	1.5
PA-P10	PA-P10-5	N	4.9	1.3	1	< 1
PA-P10	PA-P10-10	N	9.3	2	1.2	1.7
PA-P10	PA-P10-15	N	8.7	2.2	1.5	1.4
PA-P10	PA-P10-20	N	9.8	2.1	1.5	< 1
PA-P12	PA-P12-5	N	5.5	1.4	< 0.2	0.5
PA-P12	PA-P12-10	N	6.8	1.4	0.5	< 0.2
PA-P12	PA-P12-15	N	7.9	1.9	0.7	1.9
PA-P12	PA-P12-20	N	6.7	1.5	0.6	1.4
PA-P12	PA-P12-25	N	9.8	2.3	1	< 0.2
PA-P13	PA-P13-5B	FD	5.2	1.4	0.7	3.4 J
PA-P13	PA-P13-5	N	6.4	1.4	0.8	< 0.2
PA-P13	PA-P13-10	N	6.2	1.1	0.6	< 0.2
PA-P13	PA-P13-15	N	8.7	1.5	0.5	< 0.2
PA-P13	PA-P13-20	N	9.3	1.9	0.9	< 0.2
PA-P13	PA-P13-25	N	9.8	2.1	0.9	< 0.2
PA-P14	PA-P14-5	N	5.6	1.3	0.7	< 0.2
PA-P14	PA-P14-10	N	6.2	1.4	1.2	0.4
PA-P14	PA-P14-15	N	9.2	1.6	1	0.4
PA-P14	PA-P14-20	N	9.9	2	0.8	1.7
PA-P14	PA-P14-25	N	7.7	1.5	0.7	1.7
PA-P15	PA-P15-5	N	5.4	1.3	< 0.2	< 0.2
PA-P15	PA-P15-10	N	6.5	1.3	0.7 J	2.9
PA-P15	PA-P15-10B	FD	6.6	1.5	< 0.2	2.2
PA-P15	PA-P15-15	N	7.2	1.6	< 0.2	< 0.2
PA-P15	PA-P15-20	N	9.3	2	1.6	< 0.2
PA-P15	PA-P15-25	N	9.3	2.1	1.2	< 0.2
PA-P16	PA-P16-5	N	6.6	1.6	1	< 0.2
PA-P16	PA-P16-10	N	5.5	1.5	< 0.2	< 0.2
PA-P16	PA-P16-15	N	5.8	1.2	< 0.2	< 0.2
PA-P16	PA-P16-20	N	7.2	1.5	< 0.2	< 0.2
PA-P16	PA-P16-25	N	7.6	1.6	1	< 0.2
PA-P17	PA-P17-5	N	5	1.1	< 0.2	< 0.2
PA-P17	PA-P17-5B	FD	5.6	1.3	< 0.2	< 0.2
PA-P17	PA-P17-10	N	5.2	1.1	1	0.3
PA-P17	PA-P17-15	N	6.8	1.4	0.9	2.2
PA-P17	PA-P17-20	N	5.1	1.2	< 0.2	< 0.2
PA-P17	PA-P17-25	N	7.5	1.5	< 0.2	< 0.2
PA-P18	PA-P18-5	N	6.1	1.4	1.4	< 0.2
PA-P18	PA-P18-10	N	4.8	1.1	< 0.2	0.2
PA-P18	PA-P18-15	N	5.5	1.2	< 0.2	0.3
PA-P18	PA-P18-20	N	5.5	1.2	< 0.2	< 0.2
PA-P18	PA-P18-25	N	7.4	1.5	1.3	< 0.2
PA-P19	PA-P19-5	N	7.9	3.2	< 0.2	< 0.2
PA-P19	PA-P19-5B	FD	8.3	3.3	1.2 J	2.8 J
PA-P19	PA-P19-10	N	6.4	1.2	0.7	3.3
PA-P19	PA-P19-15	N	5.6	4.3	< 0.2	< 0.2
PA-P19	PA-P19-20	N	9.4	2.2	1	< 0.2
PA-P19	PA-P19-25	N	9.7	1.7	0.8	< 0.2
PA-P2	PA-P2-15	N	9.3	3.4	1.5	1.3
PA-P3	PA-P3-15	N	6.5	4.1	1.2	1.1
PA-P4	PA-P4-15	N	7.4	1.2	1.3	1.4
PA-P5	PA-P5-15	N	6.7	1.4	1.3	1.4
PA-P5	PA-P5-15B	FD	6.7	1.2	1.3	1.6
PA-P6	PA-P6-15	N	8	1.3	1.3	1.4

	Thorium-232	Uranium	Radium-226	Radium-228
	mg/kg	mg/kg	pCi/g	pCi/g
Minimum	4.8	1.1	<0.2	<0.2
Average[1]	6.3	1.5	0.77	0.78
Maximum	9.9	4.3	2	3
Total Analyzed (incl. dup)	57	57	57	57
Total Non-Duplicate	51	51	51	51
Number Estimated	0	0	2	3
Frequency Estimated	0%	0%	4%	5%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Number >PRG	0	0	0	0
Frequency >PRG	0%	0%	0%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 4 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-DD1	PA-DD1-1	N	5.3	1.2	1.4	1.6
PA-DD1	PA-DD1-5	N	7.5	1.3	1.7	1.7
PA-DD1	PA-DD1-10	N	6.4	1.4	1.5	2.2
PA-DD10	PA-DD10-1	N	19.5	11	4.3	1.9
PA-DD11	PA-DD11-1	N	7.1	2.3	2.7	0.7
PA-DD12	PA-DD12-1	N	5.3	1.2	1.2	1.6
PA-DD12	PA-DD12-1B	FD	5.4	1.2	1.4	1.6
PA-DD12	PA-DD12-5	N	4.8	1.2	1.4	1.2
PA-DD12	PA-DD12-10	N	7.1	1.2	1.5	1.7
PA-DD12	PA-DD12-15	N	7.4	1.7	1.7	2.6
PA-DD12	PA-DD12-20	N	8.1	1.4	1.6	3.1
PA-DD13	PA-DD13-1	N	6.8	1.3	1.6	2
PA-DD13	PA-DD13-1B	FD	5.2	1.1	1.3	1.7
PA-DD13	PA-DD13-5	N	6.1	1.3	1.5	1.4
PA-DD13	PA-DD13-10	N	5.7	1.2	1.3	1.8
PA-DD13	PA-DD13-15	N	5	1.1	1.3	1.4
PA-DD13	PA-DD13-20	N	8.3	1.6	1.2	1.6
PA-DD14	PA-DD14-1	N	5.7	1.2	1.1	1.2
PA-DD14	PA-DD14-5	N	7.8	1.3	1.3	1.3
PA-DD14	PA-DD14-10	N	5.8	1.3	1.4	1.2
PA-DD2	PA-DD2-1	N	5.5	1.3	1.4	1.9
PA-DD2	PA-DD2-1B	FD	7.2	1.4	< 1	1.5
PA-DD2	PA-DD2-5	N	5.1	1.1	1.7	1.5
PA-DD2	PA-DD2-10	N	7.6	1.6	1.6	2.1
PA-DD3	PA-DD3-1	N	5.6	1.2	1.1	< 1
PA-DD3	PA-DD3-1B	FD	4.9	1.1	1.3	2.3 J
PA-DD3	PA-DD3-5	N	4.4	1.1	1.2	1.4
PA-DD3	PA-DD3-10	N	6	1.5	1.4	1.7
PA-DD4	PA-DD4-1	N	6.5	1.7	2.2	0.6 J
PA-DD5	PA-DD5-1	N	8.4	2.5	18	0.9
PA-DD6	PA-DD6-1	N	4.8	1.6	1	0.4
PA-DD7	PA-DD7-1	N	4.8	1.3	3.9	0.6
PA-DD8	PA-DD8-1	N	39.1	8.2	3.6	3.2
PA-DD9	PA-DD9-1	N	7.2	3.1	0.8	0.8
PA-FF1	PA-FF1-1	N	5.2	1.2	1.3	1.2
PA-FF1	PA-FF1-1B	FD	5.7	1.3	1	1.4
PA-FF1	PA-FF1-5	N	5.3	1.2	< 1	1.1
PA-FF1	PA-FF1-10	N	9.3	1.8	1.1	1.1
PA-FF2	PA-FF2-1	N	8.3	1.7	1	< 1
PA-FF2	PA-FF2-5	N	5.1	1.1	1	1
PA-FF2	PA-FF2-10	N	6.4	1.3	1.2	< 1
PA-FF2	PA-FF2-15	N	5.7	1.1	1.3	1.2
PA-FF2	PA-FF2-20	N	8.1	1.5	1.6	1.6
PA-FF3	PA-FF3-1	N	40.2	6.5	13.7 J	5.5 J
PA-FF3	PA-FF3-1B	FD	25.4	4.2	6.5 J	3.3 J
PA-FF3	PA-FF3-5	N	10.4	1.1	1.1	1.7
PA-FF3	PA-FF3-10	N	7.1	1.3	1.3	1.4

	Thorium-232 mg/kg	Uranium mg/kg	Radium-226 pCi/g	Radium-228 pCi/g
Minimum	4.4	1.1	<0.8	<0.4
Average[1]	7.7	1.7	2.2	1.6
Maximum	40	11	18	5.5
Number Detected	47	47	45	44
Freq. of Detection	100%	100%	96%	94%
Number Estimated	0	0	2	4
Frequency Estimated	0%	0%	4%	9%
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	0	0	5	0
Frequency >PRG	0%	0%	11%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 5 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-EE1	PA-EE1-1	N	5.9	4.4	1.4	3.2
PA-EE1	PA-DUP-A4	FD	6	4.1	0.9	2.2
PA-EE10	PA-EE10-1	N	6	2	1.4	1
PA-EE11	PA-EE11-1	N	5.6	1.9	1.8	1.1
PA-EE11	PA-EE11-1B	FD	6.3	1.5	1.6	1.1
PA-EE11	PA-EE11-5	N	9.9	1.8	1.1	1.6
PA-EE11	PA-EE11-10	N	5.9	1.3	1.3	1.7
PA-EE11	PA-EE11-15	N	6.4	1.6	1.8	1.9
PA-EE11	PA-EE11-20	N	6.8	1.5	1.5	2.2
PA-EE12	PA-EE12-1	N	6.9	1.4	1.4	1.9
PA-EE12	PA-EE12-5	N	10.8	1.6	1.4	2
PA-EE12	PA-EE12-10	N	6.1	1.4	1.1	1.8
PA-EE12	PA-EE12-15	N	5.1	1.4	1.4	1.5
PA-EE12	PA-EE12-20	N	8	1.4	1.3	1.4
PA-EE13	PA-EE13-1	N	5.4	1.1	1.2	1.4
PA-EE13	PA-EE13-1B	FD	5.9	1.1	1.1	1.3
PA-EE13	PA-EE13-5	N	7.2	1.4	1.4	1.5
PA-EE13	PA-EE13-10	N	5.9	1.4	1	1
PA-EE13	PA-EE13-15	N	5.8	1.4	1	1.3
PA-EE13	PA-EE13-20	N	5.7	1	1	1.3
PA-EE14	PA-EE14-1	N	4.8	1.2	1	1.4
PA-EE14	PA-EE14-5	N	5	1.2	1.2	1
PA-EE14	PA-EE14-10	N	4.5	1	1.1	1.2
PA-EE14	PA-EE14-15	N	6.3	4.9	1	1.3
PA-EE14	PA-EE14-20	N	7.4	2	1.6	1.4
PA-EE15	PA-EE15-1	N	6	1.5	1.3	1.1
PA-EE15	PA-EE15-1B	FD	4.7	1.2	1.2	1
PA-EE15	PA-EE15-5	N	5.4	1.1	1.1	1.1
PA-EE15	PA-EE15-20	N	15.1	2.2	1.6	1.7
PA-EE15	PA-EE15-25	N	11	1.7	1.7	2.1
PA-EE15	PA-EE15-30	N	7.3	1.8	1.3	1.8
PA-EE16	PA-EE16-1	N	7.6	1.6	1.2	1
PA-EE16	PA-EE16-5	N	4.9	1.4	1.1	1.3
PA-EE16	PA-EE16-20	N	8.7	1.5	1.6	1.8
PA-EE16	PA-EE16-25	N	10.1	2	1.6	1.6
PA-EE16	PA-EE16-30	N	8.4	1.8	1.5	< 1
PA-EE17	PA-EE17-1	N	11 J	4.8 J	5 J	2.8 J
PA-EE17	PA-EE17-1B	FD	5.9 J	2.2 J	1.7 J	1.6 J
PA-EE17	PA-EE17-5	N	7	1.3	1.3	2.2
PA-EE17	PA-EE17-20	N	7	1.4	1.5	1.9
PA-EE17	PA-EE17-25	N	10.4	3.8	3	3.2
PA-EE17	PA-EE17-30	N	9.5	1.8	1.8	2.3
PA-EE18	PA-EE18-1	N	5.8	1.4	1.1	1.4
PA-EE18	PA-EE18-5	N	7	4.7	1.2	1.7
PA-EE18	PA-EE18-20	N	8.2	1.9	1.4	1.9
PA-EE18	PA-EE18-25	N	1	< 0.5	1.9	1.9
PA-EE18	PA-EE18-30	N	8.5	1.7	2.4	2.1
PA-EE19	PA-EE19-1	N	6.3	1.4	3.7	2
PA-EE19	PA-EE19-1B	FD	6	1.6	2.9	1.6
PA-EE19	PA-EE19-5	N	8.5	1.7	1.5	1.8
PA-EE19	PA-EE19-20	N	9	1.4	1.7	2.9
PA-EE19	PA-EE19-25	N	14.9	3.2	1.9	2.4
PA-EE19	PA-EE19-30	N	10.5	12.1	2.2	2.7
PA-EE2	PA-EE2-1	N	5.6	1.9	1	0.9
PA-EE20	PA-EE20-1	N	6.5	1.3	1.4	1.6
PA-EE20	PA-EE20-5	N	7.4	1.7	1.1	1.4
PA-EE20	PA-EE20-20	N	13.4	3.1	1.7	2.7
PA-EE20	PA-EE20-25	N	9.3	4.5	1.8	1.9
PA-EE20	PA-EE20-30	N	17.3	4.7	1.5	2.3
PA-EE3	PA-EE3-1	N	3.4	1.7	3.7	1.2
PA-EE4	PA-EE4-1	N	3	1.1	3.7	0.4
PA-EE5	PA-EE5-1	N	2.9	0.5	0.5	< 0.2
PA-EE6	PA-EE6-1	N	13.6	22	1.8	1.4
PA-EE7	PA-EE7-1	N	7.8	3.3	4	1.2
PA-EE8	PA-EE8-1	N	7.6	3.8	1.5	1.4
PA-EE9	PA-EE9-1	N	11.4	8.7	1.5	1.8

Minimum	1	<0.5	0.5	<0.2
Average[1]	7.5	3	1.6	1.6
Maximum	17.3	22	5.0	3.2
Total Analyzed (incl. dup)	66	66	66	66
Number Detected	66	65	66	64
Freq. of Detection	100%	98%	100%	97%
Number Estimated	2	2	2	2
Frequency Estimated	3%	3%	3%	3%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	0	0	5	0
Frequency >PRG	0%	0%	8%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 6 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-HH10	PA-HH10-5	N	5.3	1.3	1.9	1.9
PA-HH10	PA-HH10-10	N	8.7	2.1	2.1	2.2
PA-HH10	PA-HH10-15	N	7.7	2	2.3	3.4
PA-HH10	PA-HH10-20	N	6.6	1.7	2	3.2
PA-HH11	PA-HH11-5	N	6	1.4	1.8	1.9
PA-HH11	PA-HH11-10	N	9	2.8	1.9	1.8
PA-HH11	PA-HH11-15	N	7.6	2.3	2.5	2.7
PA-HH11	PA-HH11-20	N	5.9	1.7	1.9	1.3
PA-HH12	PA-HH12-5	N	5.6	1.6	1.4	1.6
PA-HH12	PA-HH12-5B	FD	6	1.9	1.6	1.5
PA-HH12	PA-HH12-10	N	5.4	1.4	1.3	1.1
PA-HH12	PA-HH12-15	N	6.8	1.5	1.6	1.6
PA-HH12	PA-HH12-20	N	7.7	2.2	1.6	1.7
PA-HH12	PA-HH12-25	N	6.8	1.6	1.6	1.8
PA-HH13	PA-HH13-1	N	8.2	1.9	1.7	1.9
PA-HH13	PA-HH13-1B	FD	7.7	2	1.5	1.7
PA-HH13	PA-HH13-5	N	9.1	2.2	1.5	1.8
PA-HH13	PA-HH13-10	N	6.6	1.4	1.2	1.2
PA-HH13	PA-HH13-15	N	14.8	1.4	1.2	2.3
PA-HH13	PA-HH13-20	N	11.7	2.4	1.5	1.8
PA-HH2	PA-HH2-1	N	5.4	1.3	1.2	1.2
PA-HH2	PA-HH2-1B	FD	4.9	1.2	1.5	1.3
PA-HH2	PA-HH2-5	N	5.7	1.6	1.3	1.1
PA-HH2	PA-HH2-10	N	7.1	1.5	1.5	1.3
PA-HH3	PA-HH3-1	N	6.4	1.6	1.2	1.9
PA-HH3	PA-HH3-5	N	5.5	1.1	1.3	1.7
PA-HH3	PA-HH3-10	N	8	1.7	1.9	1.8
PA-HH4	PA-HH4-1	N	5.9	1.1	1.7	1.8
PA-HH4	PA-HH4-1B	FD	5.3	1.3	1.4	1.2
PA-HH4	PA-HH4-5	N	7.5	1.3	1.3	1.9
PA-HH4	PA-HH4-10	N	7.6	1.3	1.2	1.7
PA-HH5	PA-HH5-1	N	4.9	1.1	1.3	1
PA-HH5	PA-HH5-5	N	5.4	1.2	1.1	1.1
PA-HH5	PA-HH5-10	N	5	1	1.3	< 1
PA-HH6	PA-HH6-1	N	5.8	1.2	1.7	< 1
PA-HH6	PA-HH6-1B	FD	5.8	1.3	1.7	1.1
PA-HH6	PA-HH6-5	N	5.8	1.2	1.5	1.4
PA-HH6	PA-HH6-10	N	6.1	1.5	1.3	1.1
PA-HH7	PA-HH7-5	N	12.4	1.2	1.4	1.7
PA-HH7	PA-HH7-10	N	7.9	1.5	1.5	1.4
PA-HH7	PA-HH7-15	N	7.3	1.6	2.1	2
PA-HH7	PA-HH7-20	N	8.2	1.9	1.4	2.1 J
PA-HH8	PA-HH8-5	N	6	1.6	1.7	2.2
PA-HH8	PA-HH8-10	N	7.7	1.8	2.1	2.2
PA-HH8	PA-HH8-15	N	9.1	2	1.4	1.5
PA-HH8	PA-HH8-20	N	7.2	1.7	1.4	1.6
PA-HH8	PA-HH8-25	N	5.5	1.1	< 1	1.3
PA-HH9	PA-HH9-5	N	9	1.7	1.5	1.5
PA-HH9	PA-HH9-10	N	5.5	1.4	1	1.2
PA-HH9	PA-HH9-15	N	7.3	1.6	1.3	1.3
PA-HH9	PA-HH9-20	N	9.1	1.8	1.5	1.7
PA-HH9	PA-HH9-25	N	9.2	2.3	2.4	2.6

Minimum	4.9	1.0	<1	<1
Average[1]	7.2	1.6	1.6	1.7
Maximum	14.8	2.8	2.5	3.4
Total Analyzed (incl. dup)	52	52	52	52
Number Detected	52	52	51	50
Freq. of Detection	100%	100%	98%	96%
Number Estimated	0	0	0	1
Frequency Estimated	0%	0%	0%	2%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	0	0	0	0
Frequency >PRG	0%	0%	0%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 7 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-WW1	PA-WW1-5	N	5.9	2	2.4	1.3
PA-WW1	PA-WW1-5B	FD	5.1	1.5	2	1
PA-WW1	PA-WW1-10	N	6.9	15.5	3.1	1.7
PA-WW1	PA-WW1-15	N	6.9	15.6	1.8	1.5
PA-WW1	PA-WW1-20	N	6.8	5.6	1.5	2
PA-WW10	PA-WW10-5	N	5.5	1.7	3.1	1.1
PA-WW10	PA-WW10-10	N	8.5	1.9	1.7	2.1
PA-WW10	PA-WW10-15	N	8.5	1.9	1.5	1.5
PA-WW10	PA-WW10-20	N	9	2.3	1.7	< 1
PA-WW2	PA-WW2-5	N	8	1.8	1.6	1.9
PA-WW2	PA-WW2-10	N	172	32.9	3.4	20
PA-WW2	PA-WW2-15	N	20.5	15.7	1.9	4
PA-WW2	PA-WW2-20	N	7.6	18.5	1.3	1.6
PA-WW3	PA-WW3-5	N	3.6 J	1 J	4	1.2
PA-WW3	PA-WW3-5B	FD	5.3 J	1.1 J	3.6	1
PA-WW3	PA-WW3-10	N	5.8 J	4.6 J	4.6	< 1
PA-WW3	PA-WW3-15	N	7.8 J	11.5 J	1.7	2
PA-WW3	PA-WW3-20	N	8.9 J	13.5 J	1.4	1.6
PA-WW4	PA-WW4-5	N	4.2	0.9	1.4	< 1
PA-WW4	PA-WW4-10	N	25.4	8.6	1.8	3.5
PA-WW4	PA-WW4-15	N	9.1	1.8	1.6	1.5
PA-WW4	PA-WW4-20	N	3.1 J	0.5 J	1.4	1.7
PA-WW5	PA-WW5-5	N	8.3 J	5.6 J	1.6	1.9
PA-WW5	PA-WW5-5B	FD	7.2 J	5.4 J	1.5	1.5
PA-WW5	PA-WW5-10	N	11.4 J	4.5 J	1.8	2.5
PA-WW5	PA-WW5-15	N	11.3 J	3.4 J	1.8	2.5
PA-WW5	PA-WW5-20	N	7.2 J	2 J	1.5	1.9
PA-WW6	PA-WW6-5	N	3 J	1.9 J	4.1	1.6
PA-WW6	PA-WW6-10	N	6.9 J	5.7 J	1.2	2.7
PA-WW6	PA-WW6-15	N	6.1 J	1.5 J	1.5	1.6
PA-WW6	PA-WW6-20	N	4.9 J	1 J	1	1.1
PA-WW7	PA-WW7-5	N	6.9 J	3.4 J	6	< 1
PA-WW7	PA-WW7-5B	FD	5.7 J	3 J	6.3	< 1
PA-WW7	PA-WW7-10	N	7 J	1.6 J	1.9	1
PA-WW7	PA-WW7-15	N	41.4 J	3.8 J	1.9	4.7
PA-WW7	PA-WW7-20	N	57 J	4.8 J	1.7	8
PA-WW8	PA-WW8-5	N	4.3	2.8	2.5	1.3
PA-WW8	PA-WW8-10	N	30.6	2.9	2.3	4.4
PA-WW8	PA-WW8-15	N	44.5	2	2.2	5.4
PA-WW8	PA-WW8-20	N	87.4	3.1	1.5	8.8
PA-WW9	PA-WW9-5	N	6.8	1.4	2	1.3
PA-WW9	PA-WW9-5B	FD	6	1.3	2.9	< 1
PA-WW9	PA-WW9-10	N	4.5	< 0.5	< 1	1.7
PA-WW9	PA-WW9-15	N	3.4	0.6	1.4	< 1
PA-WW9	PA-WW9-20	N	8.3	1.7	1.9	2.2

Minimum	3	<0.5	<1	<1
Average[1]	16	5.0	2.2	2.5
Maximum	172	33	6.3	20
Total Analyzed (incl. dup)	45	45	45	45
Number Detected	45	44	44	38
Freq. of Detection	100%	98%	98%	84%
Number Estimated	20	20	0	0
Frequency Estimated	44%	44%	0%	0%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	0	0	5	2
Frequency >PRG	0%	0%	11%	4%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 8 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-FFF9	PA-FFF9-1	N	10.5	4.1	1.7	1.9
PA-FFF9	PA-FFF9-5	N	5.3	1.3	1.6	2.1
PA-FFF9	PA-FFF9-10	N	7.2	1.5	1.3	1.9

Minimum	5.3	1.3	1.3	1.9
Average[1]	7.7	2.3	1.5	2.0
Maximum	10.5	4.1	1.7	2.1
Total Analyzed (incl. dup)	3	3	3	3
Number Detected	3	3	3	3
Freq. of Detection	100%	100%	100%	100%
Number Estimated	0	0	0	0
Frequency Estimated	0%	0%	0%	0%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	0	0	0	0
Frequency >PRG	0%	0%	0%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 9 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-EEE1	PA-EEE1-1	N	6.5	3.3	1.6	2.1
PA-EEE1	PA-EEE1-5	N	5.6	1.4	1.5	1.7
PA-EEE1	PA-EEE1-10	N	6.6	1.7	1.5	1.4
PA-EEE1	PA-EEE1-15	N	9.5	1.5	1.1	1.5
PA-EEE1	PA-EEE1-20	N	7.7	1.5	1.4	1.9
PA-EEE1	PA-EEE1-25	N	6	1.4	1.6	2
PA-EEE10	PA-EEE10-1	N	7	1.4	1.6	1.4
PA-EEE10	PA-EEE10-1B	FD	7.8	1.4	2	1.5
PA-EEE10	PA-EEE10-5	N	4.6	0.9	1.7	1.3
PA-EEE10	PA-EEE10-10	N	8.2	1.3	1.1	1
PA-EEE10	PA-EEE10-15	N	5.9	1.3	1	1
PA-EEE10	PA-EEE10-20	N	5.4	1	1	< 1
PA-EEE10	PA-EEE10-25	N	5.9	1.1	1.4	1.5
PA-EEE11	PA-EEE11-1	N	73.8	27.9	1.5	6.4
PA-EEE11	PA-EEE11-5	N	20.9	16.2	1.3	3.1
PA-EEE11	PA-EEE11-10	N	6.5	18	1.1	< 1
PA-EEE11	PA-EEE11-15	N	7.2	9.5	1.2	1.1
PA-EEE11	PA-EEE11-20	N	7.4	13.3	1.2	1.3
PA-EEE11	PA-EEE11-25	N	5.3	3.7	1.3	1.1
PA-EEE12	PA-EEE12-1	N	10.6	4.8	1.5	1.7
PA-EEE12	PA-EEE12-1B	FD	9.9	3.2	1.5	1.8
PA-EEE12	PA-EEE12-5	N	7	2.7	1.1	1.1
PA-EEE12	PA-EEE12-10	N	10.8	4.3	1.7	1.7
PA-EEE12	PA-EEE12-15	N	9.5	4.4	1	1.2
PA-EEE12	PA-EEE12-20	N	5.1	1.1	1.1	1.2
PA-EEE12	PA-EEE12-25	N	7	1.1	1.2	1.2
PA-EEE13	PA-EEE13-1	N	66.3	40.9	5.1	9.3
PA-EEE13	PA-EEE13-5	N	12.4	6.6	1.4	1.7
PA-EEE13	PA-EEE13-10	N	9	5.1	1.2	1.6
PA-EEE13	PA-EEE13-15	N	8.1	4.5	1.2	1.5
PA-EEE13	PA-EEE13-20	N	7.9	6	1	2
PA-EEE13	PA-EEE13-25	N	7.9	4.5	1.5	1.7
PA-EEE14	PA-EEE14-1	N	157	53.8	2.4	16.9
PA-EEE14	PA-EEE14-1B	FD	155	56	2.9	14.2
PA-EEE14	PA-EEE14-5	N	31	24.8	1.8	4.4
PA-EEE14	PA-EEE14-10	N	8.1	16.1	1.4	1.9
PA-EEE14	PA-EEE14-15	N	8.9	7.1	1.5	2.1
PA-EEE14	PA-EEE14-20	N	5.2	3	1.5	1.8
PA-EEE14	PA-EEE14-25	N	5.8	1.4	1.7	1.9
PA-EEE15	PA-EEE15-1	N	12.6	4	2.6	3.5
PA-EEE15	PA-EEE15-5	N	5.7	4.3	1.1	1.5
PA-EEE15	PA-EEE15-10	N	5.7	3.8	1.3	1.7
PA-EEE15	PA-EEE15-15	N	5.2	2.4	1.1	1.2
PA-EEE15	PA-EEE15-20	N	5.9	5.5	1	< 1
PA-EEE15	PA-EEE15-25	N	5.7	10.2	1.1	1
PA-EEE16	PA-EEE16-1	N	7.7	4.4	1.5	2.2
PA-EEE16	PA-EEE16-1B	FD	6.4	4.8	1.7	1.4
PA-EEE16	PA-EEE16-5	N	5.1	2.9	1.4	1.5
PA-EEE16	PA-EEE16-10	N	8.1	1.6	1.6	2.5
PA-EEE16	PA-EEE16-15	N	13.4	2.5	1.5	1.9
PA-EEE16	PA-EEE16-20	N	6.2	2	1	1.5
PA-EEE16	PA-EEE16-25	N	6.5	2.2	1.7	2.2
PA-EEE17	PA-EEE17-1	N	241	42.8	4.9	24.4
PA-EEE17	PA-EEE17-5	N	76	21.2	1.9	7.6
PA-EEE17	PA-EEE17-10	N	< 0.5	< 0.5	2	6.1
PA-EEE17	PA-EEE17-15	N	40.8	10.2	2.4	7.2
PA-EEE17	PA-EEE17-20	N	36.7	20	1.4	5.8
PA-EEE18	PA-EEE18-1	N	6.9	1.6	1.4	1.5
PA-EEE18	PA-EEE18-1B	FD	7.5	1.4	1.3	1.4
PA-EEE18	PA-EEE18-5	N	5.3	1.4	1.2	< 1
PA-EEE18	PA-EEE18-10	N	5	1.2	1.2	1.1
PA-EEE18	PA-EEE18-15	N	6.3	2.1	1.4	< 1
PA-EEE18	PA-EEE18-20	N	7.3	10.4	1.1	1.3
PA-EEE18	PA-EEE18-25	N	8.3	8	1.2	1.2
PA-EEE19	PA-EEE19-1	N	6.2	1.5	1.7	1.6
PA-EEE19	PA-EEE19-5	N	5.2	1.2	1.5	1.4
PA-EEE19	PA-EEE19-10	N	5.2	1.3	1.3	1.9
PA-EEE19	PA-EEE19-15	N	8.8	1.6	1.6	1.9
PA-EEE19	PA-EEE19-20	N	7.2	1.8	1.3	2.3
PA-EEE19	PA-EEE19-25	N	8	2.9	1.8	3
PA-EEE2	PA-EEE2-1	N	110	36.6	5.7	14.4
PA-EEE2	PA-EEE2-1B	FD	98.4	31	4.1	12.6
PA-EEE2	PA-EEE2-5	N	34.7	12.2	1.8	3.8
PA-EEE2	PA-EEE2-10	N	8.6	29.6	1.2	2.1
PA-EEE2	PA-EEE2-15	N	10.6	12.6	1.5	1.8
PA-EEE2	PA-EEE2-20	N	11.8	16	1.4	2.1
PA-EEE2	PA-EEE2-25	N	6.6	7	1.9	2
PA-EEE20	PA-EEE20-1	N	9.2	5.8	1.2	< 1
PA-EEE20	PA-EEE20-5	N	9.3	2	1.1	1.4
PA-EEE20	PA-EEE20-10	N	8.1	1.8	1.3	1.3
PA-EEE20	PA-EEE20-15	N	9.8	2.1	1.4	1.6
PA-EEE20	PA-EEE20-20	N	8.6	2.8	1.3	1.4
PA-EEE20	PA-EEE20-25	N	7.1	1.8	1.1	1.2

Soil - Area 9 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-EEE21	PA-EEE21-1	N	5.7	1.7	1.2	< 1
PA-EEE21	PA-EEE21-5	N	6.5	1.4	1.3	1.3
PA-EEE21	PA-EEE21-10	N	6.3	13	1.3	1.2
PA-EEE21	PA-EEE21-15	N	6	3.2	1.2	1.3
PA-EEE21	PA-EEE21-20	N	11.9	3.2	1.5	1.7
PA-EEE21	PA-EEE21-25	N	10.8	8.7	1.4	1.9
PA-EEE3	PA-EEE3-1	N	9.6	1.4	1	< 1
PA-EEE3	PA-EEE3-5	N	5.1	1.3	1.2	< 1
PA-EEE3	PA-EEE3-10	N	5.4	1.2	1.1	< 1
PA-EEE3	PA-EEE3-15	N	5.8	1.2	1.1	1
PA-EEE3	PA-EEE3-20	N	5.8	1.3	1.3	1.5
PA-EEE3	PA-EEE3-25	N	7	1.8	1.5	1.4
PA-EEE4	PA-EEE4-1	N	6	1.2	1.3	< 1
PA-EEE4	PA-EEE4-1B	FD	5.7	1.3	1.3	1.2
PA-EEE4	PA-EEE4-5	N	5.5	1.4	1.1	1.3
PA-EEE4	PA-EEE4-10	N	3.9	1	1.1	1.5
PA-EEE4	PA-EEE4-15	N	6.4	1.3	1.1	1.2
PA-EEE4	PA-EEE4-20	N	5.7	1.4	1.2	1.4
PA-EEE4	PA-EEE4-25	N	7.5	1.5	1.4	1.1
PA-EEE5	PA-EEE5-1	N	52.4	11.5	1.7	5.4
PA-EEE5	PA-EEE5-5	N	13.2	8.1	1.8	2.2
PA-EEE5	PA-EEE5-10	N	9.4	10.6	1.5	2.1
PA-EEE5	PA-EEE5-15	N	10	4.3	1.3	2.4
PA-EEE5	PA-EEE5-20	N	7.7	2.4	1.7	2.2
PA-EEE5	PA-EEE5-25	N	8	3.5	1.4	2.6
PA-EEE6	PA-EEE6-1	N	7.4	1.2	1.3	1.4
PA-EEE6	PA-EEE6-1B	FD	6.7	1.4	1.4	1.6
PA-EEE6	PA-EEE6-5	N	4.1	1.1	1	< 1
PA-EEE6	PA-EEE6-10	N	7.9	1.7	1	< 1
PA-EEE6	PA-EEE6-15	N	5.4	1.2	1.1	1.3
PA-EEE6	PA-EEE6-20	N	6.8	1.2	1.2	1.5
PA-EEE6	PA-EEE6-25	N	10.5	2.1	1.3	1.9
PA-EEE7	PA-EEE7-1	N	7.4	2.6	1.6	1.2
PA-EEE7	PA-EEE7-5	N	5.7	1.4	1.3	1.5
PA-EEE7	PA-EEE7-10	N	6	1.3	1.2	1.6
PA-EEE7	PA-EEE7-15	N	14.4	4	1.3	1.1
PA-EEE7	PA-EEE7-20	N	6.3	1.2	1.4	2.2
PA-EEE7	PA-EEE7-25	N	5.4	1.2	1.5	1.6
PA-EEE8	PA-EEE8-1	N	36.6	20	2.1	5.2
PA-EEE8	PA-EEE8-1B	FD	46.6	13.2	2.1	5.7
PA-EEE8	PA-EEE8-5	N	23.4	42.4	1.9	4.7
PA-EEE8	PA-EEE8-10	N	10.8	20.1	1.4	2.3
PA-EEE8	PA-EEE8-15	N	12.6	9.8	1.7	2.2
PA-EEE8	PA-EEE8-20	N	9.1	6.1	1.9	1.6
PA-EEE8	PA-EEE8-25	N	6.1	12.1	1.4	1.5
PA-EEE9	PA-EEE9-1	N	11	2	1.3	1.3
PA-EEE9	PA-EEE9-5	N	5.8	1.2	1.3	1
PA-EEE9	PA-EEE9-10	N	7.9	1.6	1.1	1.1
PA-EEE9	PA-EEE9-15	N	8.3	1.6	1.5	1.5
PA-EEE9	PA-EEE9-20	N	7.2	1.6	1.3	1.6
PA-EEE9	PA-EEE9-25	N	14.2	1.9	1.4	1.5

Minimum	<0.5	<0.5	1	<1
Average[1]	16	7.1	1.5	2.5
Maximum	241	56	5.7	24.4
Total Analyzed (incl. dup)	134	134	134	134
Number Detected	133	133	134	121
Freq. of Detection	99%	99%	100%	90%
Number Estimated	0	0	0	0
Frequency Estimated	0%	0%	0%	0%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	1	0	4	6
Frequency >PRG	1%	0%	3%	4%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 10 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-HHH11	PA-HHH11-25	N	5.4	1.6	1.6	2.1
PA-HHH9	PA-HHH9-1	N	5.7	0.9	1.4	1.2
PA-HHH9	PA-HHH9-1B	FD	5.4	1	1.1	1.2
PA-HHH9	PA-HHH9-5	N	7	1.5	1.3	1.3
PA-HHH9	PA-HHH9-10	N	7.1	1.8	1.2	1.5
PA-HHH9	PA-HHH9-15	N	6.7	1.5	< 1	< 1
PA-HHH9	PA-HHH9-20	N	7.7	1.4	1.5	2.1
PA-HHH9	PA-HHH9-25	N	8.6	2.3	1.7	1.9
PA-II3	PA-II3-1	N	7.6	2	1.5	1.7
PA-II3	PA-II3-5	N	5.7	1.2	< 1	1.3
PA-II3	PA-II3-10	N	4.9	1.2	1.2	1.3
PA-II3	PA-II3-15	N	5.9	1.3	1.2	1.1
PA-II3	PA-II3-20	N	11.2	1.9	1.4	1.2
PA-KK1	PA-KK1-1	N	1.9	1	1.6	< 1
PA-KK1	PA-KK1-5	N	1.7	1	1.2	< 1
PA-KK1	PA-KK1-10	N	2.1	< 0.5	1.2	< 1
PA-KK1	PA-KK1-15	N	2.5	< 0.5	1.1	< 1
PA-KK1	PA-KK1-20	N	4.7	0.6	1.3	1.3
PA-KK2	PA-KK2-1	N	2.2	1.3	1.4	< 1
PA-KK2	PA-KK2-1B	FD	2	1	1.2	< 1
PA-KK2	PA-KK2-5	N	1.9	1.1	1	< 1
PA-KK2	PA-KK2-10	N	1.8	0.8	1.1	< 1
PA-KK2	PA-KK2-15	N	2.3	0.5	1.2	< 1
PA-KK2	PA-KK2-20	N	2.5	0.6	1.4	< 1
PA-KK3	PA-KK3-1	N	7.2	1.9	2.1	1.4
PA-KK3	PA-KK3-5	N	3.8	1.3	1.4	< 1
PA-KK3	PA-KK3-10	N	30.2	2.7	1.2	4.2
PA-KK3	PA-KK3-15	N	27	2.1	1.5	5.1
PA-KK3	PA-KK3-20	N	4.6	1	1.8	1.5

Minimum	1.7	<0.5	<1	<1
Average[1]	6.5	1.3	1.3	1.3
Maximum	30.2	2.7	2.1	5.1
Total Analyzed (incl. dup)	29	29	29	29
Number Detected	29	27	27	17
Freq. of Detection	100%	93%	93%	59%
Number Estimated	0	0	0	0
Frequency Estimated	0%	0%	0%	0%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	0	0	0	0
Frequency >PRG	0%	0%	0%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 11 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-BBB1	PA-BBB1-5	N	9	1.9 J	1.4 J	2.2
PA-BBB1	PA-BBB1-5B	FD	5.7	4.1 J	2.7 J	2.5
PA-BBB1	PA-BBB1-10	N	6.1	1.6	2	2.2
PA-BBB1	PA-BBB1-15	N	9.1	1.7	2.1	2.5
PA-BBB1	PA-BBB1-20	N	8.4	1.8	1.9	2.5
PA-BBB1	PA-BBB1-25	N	5.4	1.1	1.8	1.9
PA-BBB3	PA-BBB3-5	N	6.6	1.2	1.5	1.7
PA-BBB3	PA-BBB3-5B	FD	6.6	1.2	2.3	2.3
PA-BBB3	PA-BBB3-10	N	5.4	1.4	1.6	2.6
PA-BBB3	PA-BBB3-15	N	< 0.5	0.5	1.9	2.1
PA-BBB3	PA-BBB3-20	N	7.9	2 J	1.3	1.9
PA-BBB3	PA-BBB3-25	N	9.9	2.1 J	1.5	2.6
PA-CCC2	PA-CCC2-5	N	19.3	3.4 J	1.1 J	2.6
PA-CCC2	PA-CCC2-5B	FD	29.5	7.2 J	1.9 J	4.3
PA-CCC2	PA-CCC2-10	N	30.3	42.9 J	1.9	3.5
PA-CCC2	PA-CCC2-15	N	10.4	11 J	1.2	1.6
PA-CCC2	PA-CCC2-20	N	11.4	7.8 J	1.5	1.7
PA-CCC2	PA-CCC2-25	N	8.1	9.1 J	1.6	1.3
PA-CCC4	PA-CCC4-5	N	5.8	19.3 J	1.1	< 1
PA-CCC4	PA-CCC4-5B	FD	5.1	14.9 J	1.1	< 1
PA-CCC4	PA-CCC4-10	N	10.8	1.9 J	1.2	1.2
PA-CCC4	PA-CCC4-15	N	6.8	4.4 J	1.2	1
PA-CCC4	PA-CCC4-20	N	10	10 J	1.4	1.8
PA-CCC4	PA-CCC4-25	N	9.7	4.8 J	1.4	1.6
PA-CCC4	PA-CCC4-30	N	6.7	5.8 J	1.2	1.5

Minimum	<0.5	1	1.1	<1
Average[1]	10	7	1.6	2.0
Maximum	30	43	2.7	4.3
Total Analyzed (incl. dup)	25	25	25	25
Number Detected	24	25	25	23
Freq. of Detection	96%	100%	100%	92%
Number Estimated	0	17	4	0
Frequency Estimated	0%	68%	16%	0%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	0	0	0	0
Frequency >PRG	0%	0%	0%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Area 12 Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-AAA1	PA-AAA1-1	N	2.4	< 0.5	1.5	< 1
PA-AAA1	PA-AAA1-5	N	3.6	0.7	1.8	< 1
PA-AAA1	PA-AAA1-10	N	4.4	9.5	2.7	< 1
PA-AAA1	PA-AAA1-15	N	4.3	10.7	2.8	< 1
PA-AAA1	PA-AAA1-20	N	3.2	2.4	2.9	< 1
PA-PP1	PA-PP1-1	N	6.2	2.1	2.3	1.4
PA-PP1	PA-PP1-1B	FD	6.6	1.6	2.2	1.7
PA-PP1	PA-PP1-5	N	6.4	1.7	2.7	1.9
PA-PP2	PA-PP2-1	N	6.8	1.8	2.6	< 1
PA-PP2	PA-PP2-5	N	7.2	2.1	2.8	1.8
PA-PP3	PA-PP3-1	N	4.8	1.2	2	1.7
PA-PP3	PA-PP3-1B	FD	6.6	1.5	2.2	1.6
PA-PP3	PA-PP3-5	N	6.1	2.1	3.6	< 1
PA-PP4	PA-PP4-1	N	9.9	2.2	2.9	2.3
PA-PP4	PA-PP4-5	N	9.5	2	2.9	2.1
PA-VV1	PA-VV1-1	N	6.8	3.1	2.1	2
PA-VV1	PA-VV1-1B	FD	6.5	1.9	1.7	1.5
PA-VV1	PA-VV1-5	N	6.7	1.4	1.4	1.4
PA-VV1	PA-VV1-10	N	10	9.5	2.3	2.3
PA-VV1	PA-VV1-15	N	10.8	4.5	2.3	2.5
PA-VV1	PA-VV1-20	N	11.2	6.8	2.7	2.7
PA-VV2	PA-VV2-1	N	8.3	2.3	4.8	1.8
PA-VV2	PA-VV2-5	N	6.4	3	1.2	1.9
PA-VV2	PA-VV2-10	N	12.7	5	1.7	2.1
PA-VV2	PA-VV2-15	N	6.9	2.6	1.7	1.5
PA-VV2	PA-VV2-20	N	14.2	5.1	2.5	1.9
PA-VV3	PA-VV3-1	N	5.8	2.7	3.2	1.4

Minimum	2.4	<0.5	1.2	<1
Average[1]	7.2	3.3	2.4	1.5
Maximum	14.2	10.7	4.8	2.7
Total Analyzed (incl. dup)	27	27	27	27
Number Detected	27	26	27	20
Freq. of Detection	100%	96%	100%	74%
Number Estimated	0	0	0	0
Frequency Estimated	0%	0%	0%	0%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	0	0	1	0
Frequency >PRG	0%	0%	4%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal

Soil - Utility Pipeline Radionuclide Analysis

Location	Sample Name	Sample Type	Thorium-232	Uranium	Radium-226	Radium-228
			mg/kg	mg/kg	pCi/g	pCi/g
PA-UT01	PA-UT01	N	6.2	1.2	0.7	0.4
PA-UT02	PA-UT02	N	5.5	1.1	1.1	0.5
PA-UT03	PA-UT03	N	4.3	0.8	0.4	< 0.2
PA-UT04	PA-UT04	N	5.4	1.1	0.7	< 0.2
PA-UT05	PA-UT05	N	5.4	1.6	1.7	1.5
PA-UT06	PA-UT06	N	4.1	0.8	0.9	0.6
PA-UT07	PA-UT07	N	4.7	1.1	1.5	0.2
PA-UT08	PA-UT08	N	4.4	0.8	0.5	< 0.2
PA-UT09	PA-UT09	N	5.5	1	0.9	1.1
PA-UT10	PA-UT10	N	4.5	1	0.5	< 0.2
PA-UT10	PA-DUP-A1	FD	4.1	0.9	0.8	0.3
PA-UT11	PA-UT11	N	4.3	0.8	0.6	0.4
PA-UT12	PA-UT12	N	5.1	1.2	0.4	0.5
PA-UT13	PA-UT13	N	6.6	1.2	0.6	0.3
PA-UT14	PA-UT14	N	5.6	1.2	0.6	0.4
PA-UT15	PA-UT15	N	5.6	1.3	0.6	0.3
PA-UT16	PA-UT16	N	22	10	1.2	1
PA-UT17	PA-UT17	N	4.9	1	0.6	0.3
PA-UT18	PA-UT18	N	5.6	1.2	0.6	0.7
PA-UT19	PA-UT19	N	5.3	1	0.6	< 0.2
PA-UT20	PA-UT20	N	5.5	1.1	0.7	1 J
PA-UT20	PA-DUP-A2	FD	5.8	1.2	0.6	0.4 J
PA-UT21	PA-UT21	N	6.4	1.2	0.5	0.5
PA-UT22	PA-UT22	N	5.7	1.3	0.5	0.5
PA-UT23	PA-UT23	N	6.3	1.2	0.4	0.5
PA-UT24	PA-UT24	N	5.2	0.9	0.4	0.2
PA-UT25	PA-UT25	N	4.9	1	0.4	0.3 J
PA-UT26	PA-UT26	N	5.6	1.1	0.5	0.6
PA-UT27	PA-UT27	N	9.7	6.8	0.6	0.8
PA-UT28	PA-UT28	N	33.9	10.6	2.5	2.4
PA-UT29	PA-UT29	N	235	150	4.6	1.9
PA-UT30	PA-UT30	N	6.5	1.4	0.7	0.4
PA-UT30	PA-DUP-A3	FD	6.5	1.5	0.6	0.6
PA-UT31	PA-UT31	N	5.8	2	1	3.8
PA-UT32	PA-UT32	N	5	1.2	0.5	3.9
PA-UT33	PA-UT33	N	6.1	1.4	0.6	0.4
PA-UT34	PA-UT34	N	6.8	1.1	0.6	3
PA-UT35	PA-UT35	N	5.9	1	0.5	0.5
PA-UT36	PA-UT36	N	8	6.3	1.7	2.7
PA-UT37	PA-UT37	N	6.2	1.3	0.6	2.5
PA-UT38	PA-UT38	N	7.6	1.5	0.6	0.7
PA-UT39	PA-UT39	N	8	2	1	1
PA-UT40	PA-UT40	N	73.9	25.7	1.2	0.4
PA-UT41	PA-UT41	N	55.6	11.8	1.3	0.6
PA-UT42	PA-UT42	N	65.3 J	14.5 J	0.8	1 J
PA-UT42	PA-DUP-A5	FD	7.8 J	1.8 J	0.9	0.6 J
PA-UT43	PA-UT43	N	6.5	2.7	2	< 0.2
PA-UT44	PA-UT44	N	7.9	1.4	1.8	0.4
PA-UT45	PA-UT45	N	8.4	1.7	< 0.2	0.3
PA-UT46	PA-UT46	N	7.2	1.2	1.4	0.3
PA-UT47	PA-UT47	N	9.2	1.3	2 J	< 0.2
PA-UT48	PA-UT48	N	41.6	1.1	0.7	< 0.2
PA-UT49	PA-UT49	N	5.7	2.3	1.7	1.5
PA-UT50	PA-UT50	N	7.9	2.2	1.2	1.6
PA-UT51	PA-UT51	N	7.1	1.8	1.7	1.6
PA-UT52	PA-UT52	N	5.3	1.3	1.4	< 1
PA-UT52	PA-UT52B	FD	6.6	1.4	1.2	< 1
PA-UT53	PA-UT53	N	6.8	2.7	1.4	1.5
PA-UT54	PA-UT54	N	6	1.4	2	1.8
PA-UT55	PA-UT55	N	5.7	1.8	2.1	1.3
PA-UT56	PA-UT56	N	6.5	2.7	2.4	1.2
PA-UT57	PA-UT57	N	6.8	2.8	1.6	1.7
PA-UT58	PA-UT58	N	5.7	1.3	1.5	1.8
PA-UT59	PA-UT59	N	6.7	1.4	1.2	1.8
PA-UT60	PA-UT60	N	7.7	3.9	2.3	2.2

Minimum	4.1	0.8	<0.2	<0.2
Average[1]	14	4.9	1.1	0.9
Maximum	235	150	4.6	3.9
Total Analyzed (incl. dup)	65	65	65	65
Number Detected	65	65	64	55
Freq. of Detection	100%	100%	98%	85%
Number Estimated	2	2	1	5
Frequency Estimated	3%	3%	2%	8%
Number Rejected	0	0	0	0
Frequency Rejected	0%	0%	0%	0%
Screening PRG[2]	**174**	**200**	**3.7**	**8.4**
Number >PRG	1	0	1	0
Frequency >PRG	2%	0%	2%	0%

NA - Not applicable, no screening level established.

N - Normal sample.

FD - Field duplicate.

J - Estimated result.

R - Rejected result. Laboratory reported result was rejected and not used for any purpose.

[1] Mathematical average. Non-detected results are averaged as one half the value of the minimum detection limit.

[2] Screening PRG based on EPA Region IX Industrial Worker Preliminary Remediation Goal