

Laboratory Results For MAPEP-07-GrF18

SRS Environmental Monitoring Laboratory (SEML01)

Bldg 735-B

Aiken, SC 29808

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.145	0.348	A		-58.3	>0.0 - 0.696	0.0185	
Gross beta	0.297	0.286	A		3.8	0.143 - 0.429	0.024	

Gross Alpha Flags:

A = Result acceptable, Bias $\leq \pm 100\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 100\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias $\leq \pm 50\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 50\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Laboratory Results For MAPEP-07-GrW18

SRS Environmental Monitoring Laboratory (SEML01)

Bldg 735-B

Aiken, SC 29808

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.32	1.399	A		-5.6	>0.0 - 2.798	0.23	
Gross beta	2.52	2.43	A		3.7	1.22 - 3.65	0.30	

Gross Alpha Flags:

A = Result acceptable, Bias $\leq \pm 100\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 100\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Gross Beta Flags:

A = Result acceptable, Bias $\leq \pm 50\%$ with a statistically positive result at two standard deviations (Result/Uncertainty > 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, does not include zero).

N = Result not acceptable, Bias $> \pm 50\%$ or the reported result is not statistically positive at two standard deviations (Result/Uncertainty ≤ 2 , i.e., the range encompassing the result, plus or minus the total uncertainty at two standard deviations, includes zero).

Laboratory Results For MAPEP-07-MaS18

SRS Environmental Monitoring Laboratory (SEML01)

Bldg 735-B

Aiken, SC 29808

Inorganic							Units: (mg/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	23.5				16.5 - 30.6		
Arsenic	NR	20.2				14.1 - 26.3		
Barium	NR	244				171 - 317		
Beryllium	NR	13.8				9.7 - 17.9		
Cadmium	NR	9.49				6.64 - 12.34		
Chromium	NR	70.7				49.5 - 91.9		
Cobalt	NR	41.5				29.1 - 54.0		
Copper	NR	87.0				60.9 - 113.1		
Lead	NR	79				55 - 103		
Mercury	NR	<0.04						
Nickel	NR	145				102 - 189		
Selenium	NR	4.44				3.11 - 5.77		
Silver	NR	92.4				64.7 - 120.1		
Thallium	NR	<1.0						
Vanadium	NR	161				113 - 209		
Zinc	NR	319				223 - 415		
Uranium-Total	NR	12.0				8.4 - 15.6		
Uranium-238	NR	11.9				8.3 - 15.5		
Uranium-235	NR	0.075				0.053 - 0.098		

Organic							Units: (ug/kg)	
Analyte	Result	Ref Value	Flag	Notes	Z-	Acceptance Range	Unc Value	Unc Flag
delta-BHC	NR	110.6				25.6 - 195.7		
beta-BHC	NR	18.33				1.83 - 43.94		
gamma-BHC (Lindane)	NR	18.00				1.80 - 46.56		
4,4'-DDT	NR	101.7				25.3 - 178.1		
Dieldrin	NR	35.86				3.59 - 72.57		
Heptachlor	NR	7.51				0.75 - 15.83		
Naphthalene	NR	3524				1010 - 6038		
Acenaphthene	NR	2319				724 - 3914		
Anthracene	NR	2270				664 - 3877		
Benzo(a)anthracene	NR	707				177 - 1237		
Benzo(k)fluoranthene	NR	3330				1150 - 5511		
2-Chloronaphthalene	NR	2795				815 - 4774		
2-Chlorophenol	NR	5313				1340 - 9285		

Organic						Units: (ug/kg)	
Analyte	Result	Ref Value	Flag	Notes	Z-	Acceptance Range	Unc Value Unc Flag
Dibenzofuran	NR	3339				1191 - 5487	
Di-n-butylphthalate	NR	7421				2311 - 12532	
2,4-Dichlorophenol	NR	1344				134 - 2637	
Diethylphthalate	NR	4081				1077 - 7084	
2,4-Dimethylphenol	NR						
Dimethylphthalate	NR	5738				2126 - 9350	
2,4-Dinitrotoluene	NR	1720				172 - 3318	
2,6-Dinitrotoluene	NR	2789				969 - 4609	
Di-n-octylphthalate	NR	942				163 - 1721	
Bis(2-ethylhexyl)phthalate	NR	1772				349 - 3195	
Fluorene	NR	6722				2878 - 10566	
Hexachlorobenzene	NR	846				282 - 1411	
2-Methylphenol	NR	1402				140 - 2895	
Phenanthrene	NR	5112				2111 - 8113	
Pyrene	NR	2623				984 - 4262	

Radiological						Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value Unc Flag
Americium-241	127.8	127.2	A		0.5	89.0 - 165.4	8.9
Cesium-134	777.9	854	A		-8.9	598 - 1110	15 L
Cesium-137	543.3	545	A		-0.3	382 - 709	16.8
Cobalt-57	417.3	421	A		-0.9	295 - 547	10.9 L
Cobalt-60	3.08	2.9	A	(17)			1.40
Iron-55	NR	390				273 - 507	
Manganese-54	518.5	570	A		-9.0	399 - 741	27.8
Nickel-63	NR	640				448 - 832	
Plutonium-238	72.4	72.8	A		-0.5	51.0 - 94.6	5.1
Plutonium-239/240	82.6	90.1	A		-8.3	63.1 - 117.1	5.8
Potassium-40	578.2	571	A		1.3	400 - 742	24.2
Strontium-90	441	493	A		-10.5	345 - 641	13.5
Technetium-99	NR	273				191 - 355	
Uranium-234/233	145.3	142	A		2.3	99 - 185	10.2
Uranium-238	155.0	148	A		4.7	104 - 192	10.8
Zinc-65	-0.37		A				1.4

Organic Flags:

A = Result acceptable Z-score <=3.0

N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)

QL = Quantitation Limit

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag

Notes:

(17) = NOT DETECTED - reported a statistically zero result

Laboratory Results For MAPEP-07-MaW18

SRS Environmental Monitoring Laboratory (SEML01)

Bldg 735-B

Aiken, SC 29808

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag
Antimony	1.01	0.96	A		5.2	0.67 - 1.25	0.049	
Arsenic	<0.01	<0.01	A				0.004	
Barium	0.708	0.659	A		7.4	0.461 - 0.857	0.015	L
Beryllium	0.334	0.329	A		1.5	0.230 - 0.428	0.006	L
Cadmium	0.447	0.439	A		1.8	0.307 - 0.571	0.016	
Chromium	0.519	0.494	A		5.1	0.346 - 0.642	0.011	L
Cobalt	0.115	0.110	A		4.5	0.077 - 0.143	0.003	L
Copper	0.037	0.0329	A		12.5	0.0230 - 0.0428	0.005	
Lead	0.566	0.549	A		3.1	0.384 - 0.714	0.020	
Mercury	<0.002	<0.002	A				0.006	
Nickel	1.023	0.99	A		3.3	0.69 - 1.29	0.027	L
Selenium	0.076	0.0823	A		-7.7	0.0576 - 0.1070	0.006	
Thallium	0.988	0.96	A		2.9	0.67 - 1.25	0.015	L
Vanadium	<0.01	<0.01	A				0.004	
Zinc	<0.01	<0.01	A				0.008	
Technetium-99	NR	0.0000179				1.2530000 - 2.3270000		
Uranium-Total	NR	0.303				0.212 - 0.394		
Uranium-238	NR	0.301				0.211 - 0.391		
Uranium-235	NR	0.00216				0.00151 - 0.00281		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.16	1.23	A		-5.7	0.86 - 1.60	0.08	
Cesium-134	-0.164		A				0.11	
Cesium-137	0.215		A				0.11	
Cobalt-57	21.88	22.8	A		-4.0	16.0 - 29.6	0.68	
Cobalt-60	8.43	8.40	A		0.4	5.88 - 10.92	0.28	
Hydrogen-3	339	472	W		-28.2	330 - 614	6.8	L
Iron-55	NR	36.5				25.6 - 47.5		
Manganese-54	11.93	12.1	A		-1.4	8.5 - 15.7	0.49	
Nickel-63	NR	30.7				21.5 - 39.9		
Plutonium-238	0.706	0.73	A		-3.3	0.51 - 0.95	0.05	
Plutonium-239/240	0.015	0.0141	A	(17)			0.006	
Strontium-90	9.36	11.40	A		-17.9	7.98 - 14.82	0.45	
Technetium-99	10.7	11.2	A		-4.5	7.8 - 14.6	0.7	

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag
Uranium-234/233	2.56	3.63	W		-29.5	2.54 - 4.72	0.18	
Uranium-238	2.67	3.74	W		-28.6	2.62 - 4.86	0.19	
Zinc-65	17.8	16.3	A		9.2	11.4 - 21.2	0.85	

Flags:

A = Result acceptable Bias $\leq 20\%$

W = Result acceptable with warning $20\% < \text{Bias} < 30\%$

N = Result not acceptable Bias $> 30\%$

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Notes:

(17) = NOT DETECTED - reported a statistically zero result

Laboratory Results For MAPEP-07-RdF18

SRS Environmental Monitoring Laboratory (SEML01)

Bldg 735-B

Aiken, SC 29808

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag
Uranium-235	NR	0.131				0.092 - 0.170		
Uranium-238	NR	18.1				12.7 - 23.5		
Uranium-Total	NR	18.2				12.7 - 23.7		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.146	0.158	A		-7.6	0.111 - 0.205	0.01	
Cesium-134	2.03	2.52	A		-19.4	1.76 - 3.28	0.054	L
Cesium-137	2.44	2.70	A		-9.6	1.89 - 3.51	0.091	
Cobalt-57	3.30	3.55	A		-7.0	2.49 - 4.62	0.099	
Cobalt-60	1.23	1.31	A		-6.1	0.92 - 1.70	0.041	
Manganese-54	-0.006		A				0.022	
Plutonium-238	0.098	0.1053	A		-6.9	0.0737 - 0.1369	0.007	
Plutonium-239/240	0.100	0.1141	A		-12.4	0.0799 - 0.1483	0.007	
Strontium-90	NR	1.548				1.084 - 2.012		
Uranium-234/233	0.188	0.218	A		-13.8	0.153 - 0.283	0.013	
Uranium-238	0.195	0.225	A		-13.3	0.158 - 0.293	0.013	
Zinc-65	1.95	2.04	A		-4.4	1.43 - 2.65	0.10	

Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)

QL = Quantitation Limit

RW = Report Warning

NR = Not Reported

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag

Laboratory Results For MAPEP-07-RdV18

SRS Environmental Monitoring Laboratory (SEML01)

Bldg 735-B

Aiken, SC 29808

Inorganic						Units: (ug/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value Unc Flag
Uranium-238	NR	28.9				20.2 - 37.6	
Uranium-235	NR	0.209				0.146 - 0.272	
Uranium-Total	NR	29.1				20.4 - 37.8	

Radiological						Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value Unc Flag
Americium-241	0.232	0.240	A		-3.3	0.168 - 0.312	0.016
Cesium-134	6.35	6.28	A		1.1	4.40 - 8.16	0.25
Cesium-137	3.88	3.41	A		13.8	2.39 - 4.43	0.27
Cobalt-57	8.32	6.89	W		20.8	4.82 - 8.96	0.37
Cobalt-60	3.03	2.77	A		9.4	1.94 - 3.60	0.19
Manganese-54	5.57	4.74	A		17.5	3.32 - 6.16	0.36
Plutonium-238	0.163	0.147	A		10.9	0.103 - 0.191	0.011
Plutonium-239/240	0.311	0.284	A		9.5	0.199 - 0.369	0.022
Strontium-90	1.00	1.273	W		-21.4	0.891 - 1.655	0.039
Uranium-234/233	0.377	0.346	A		9.0	0.242 - 0.450	0.026
Uranium-238	0.370	0.359	A		3.1	0.251 - 0.467	0.026
Zinc-65	-0.026		A				0.25

Flags:

A = Result acceptable Bias <=20%

W = Result acceptable with warning 20% < Bias < 30%

N = Result not acceptable Bias > 30%

L = Uncertainty potentially too low (for information purposes only)

H = Uncertainty potentially too high (for information purposes only)

QL = Quantitation Limit

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Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias	Acceptance Range	Unc Value	Unc Flag