

Laboratory Results For MAPEP-09-MaW20
(SEML01) SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

Inorganic							Units: (mg/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	<0.01	<0.01	A				0.01	
Arsenic	0.941	0.96	A		-2.0	0.67 - 1.25	0.064	
Barium	0.286	0.2971	A		-3.7	0.2080 - 0.3862	0.009	
Beryllium	0.050	0.0530	A		-5.7	0.0371 - 0.0689	0.002	
Cadmium	<0.01	<0.01	A				0.01	
Chromium	1.89	1.95	A		-3.1	1.37 - 2.54	0.064	
Cobalt	<0.025	<0.025	A				0.025	
Copper	7.07	7.31	A		-3.3	5.12 - 9.50	0.25	
Lead	1.17	1.239	A		-5.6	0.867 - 1.611	0.077	
Mercury	0.0051	0.00559	A		-8.8	0.00391 - 0.00727	0.0003	
Nickel	3.41	3.62	A		-5.8	2.53 - 4.71	0.11	
Selenium	<0.01	<0.01	A				0.01	
Thallium	4.02	4.19	A		-4.1	2.93 - 5.45	0.71	
Vanadium	0.886	0.886	A		0.0	0.620 - 1.152	0.027	
Zinc	0.353	0.404	A		-12.6	0.283 - 0.525	0.011	
Technetium-99	NR	0.0000231				0.0000162 - 0.0000300		
Uranium-Total	NR	0.233				0.163 - 0.303		
Uranium-238	NR	0.232				0.162 - 0.302		
Uranium-235	NR	0.00169				0.00118 - 0.00220		

Radiological							Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Cobalt-57	19.1	18.9	A		1.1	13.2 - 24.6	0.66	
Nickel-63	NR	53.50				37.45 - 69.55		
Uranium-234/233	2.92	2.77	A		5.4	1.94 - 3.60	0.23	
Uranium-238	3.01	2.88	A		4.5	2.02 - 3.74	0.24	
Americium-241	0.67	0.636	A		5.3	0.445 - 0.827	0.053	
Cesium-134	19.5	22.5	A		-13.3	15.8 - 29.3	0.51	L
Cesium-137	0.14		A				0.12	
Cobalt-60	17.0	17.21	A		-1.2	12.05 - 22.37	0.42	L
Iron-55	NR	48.2				33.7 - 62.7		
Manganese-54	15.2	14.66	A		3.7	10.26 - 19.06	0.70	
Plutonium-238	1.23	1.18	A		4.2	0.83 - 1.53	0.098	
Plutonium-239/240	0.84	0.853	A		-1.5	0.597 - 1.109	0.067	
Strontium-90	7.31	7.21	A		1.4	5.05 - 9.37	0.55	
Hydrogen-3	297.5	330.9	A		-10.1	231.6 - 430.2	10	

Laboratory Results For MAPEP-09-RdV20
(SEML01) SRS Environmental Monitoring Laboratory
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Aiken, SC 29808

Inorganic						Units: (ug/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-238	NR	38.4				26.9 - 49.9		
Uranium-235	NR	0.274				0.192 - 0.356		
Uranium-Total	NR	38.6				27.0 - 50.2		

Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Cobalt-57	2.07	2.36	A		-12.3	1.65 - 3.07	0.18	
Uranium-234/233	0.472	0.460	A		2.6	0.322 - 0.598	0.038	
Uranium-238	0.487	0.477	A		2.1	0.334 - 0.620	0.039	
Americium-241	0.293	0.306	A		-4.2	0.214 - 0.398	0.023	
Cesium-134	2.83	3.40	A		-16.8	2.38 - 4.42	0.17	
Cesium-137	0.86	0.93	A		-7.5	0.65 - 1.21	.17	
Cobalt-60	0.074		A				0.10	
Manganese-54	NR	2.30				1.61 - 2.99		
Plutonium-238	0.218	0.213	A		2.3	0.149 - 0.277	0.017	
Plutonium-239/240	0.170	0.168	A		1.2	0.118 - 0.218	0.014	
Strontium-90	1.22	1.260	A		-3.2	0.882 - 1.638	0.072	
Zinc-65	1.38	1.354	A		1.9	0.948 - 1.760	.35	H

Radiological Reference Date: January 1, 2009

Flags:

- A = Result acceptable Bias <=20%
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- 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

Laboratory Results For MAPEP-09-RdF20
(SEML01) SRS Environmental Monitoring Laboratory
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	16.9				11.8 - 22.0	
Uranium-235	NR	0.121				0.085 - 0.157	
Uranium-Total	NR	17.0				11.9 - 22.1	

Radiological						Units: (Bq/sample)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value Unc Flag
Cobalt-57	1.20	1.30	A		-7.7	0.91 - 1.69	0.071
Uranium-234/233	0.199	0.198	A		0.5	0.139 - 0.257	0.016
Uranium-238	0.202	0.21	A		-3.8	0.15 - 0.27	0.016
Americium-241	0.193	0.205	A		-5.9	0.144 - 0.267	0.015
Cesium-134	2.54	2.93	A		-13.3	2.05 - 3.81	0.10
Cesium-137	1.49	1.52	A		-2.0	1.06 - 1.98	0.098
Cobalt-60	1.18	1.22	A		-3.3	0.85 - 1.59	.068
Manganese-54	2.24	2.2709	A		-1.4	1.5896 - 2.9522	.17
Plutonium-238	0.176	0.1763	A		-0.2	0.1234 - 0.2292	0.014
Plutonium-239/240	0.153	0.157	A		-2.5	0.110 - 0.204	0.012
Strontium-90	0.657	0.640	A		2.7	0.448 - 0.832	0.076
Zinc-65	1.39	1.36	A		2.2	0.95 - 1.77	.19

Radiological Reference Date: January 1, 2009

Flags:

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Laboratory Results For MAPEP-09-MaS20
 (SEML01) SRS Environmental Monitoring Laboratory
 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	74.2				51.9 - 96.5		
Arsenic	NR	92				64 - 120		
Barium	NR	912				638 - 1186		
Beryllium	NR	40.0				28.0 - 52.0		
Cadmium	NR	11.99				8.39 - 15.59		
Chromium	NR	83				58 - 108		
Cobalt	NR	134				94 - 174		
Copper	NR	178.7				125.1 - 232.3		
Lead	NR	85.3				59.7 - 110.9		
Mercury	NR	0.1856				0.1299 - 0.2413		
Nickel	NR	255				179 - 332		
Selenium	NR	<0.1						
Silver	NR	12.12				8.48 - 15.76		
Thallium	NR	347				243 - 451		
Vanadium	NR	162.7				113.9 - 211.5		
Zinc	NR	422				295 - 549		
Technetium-99	NR	0.000273				0.000191 - 0.000355		
Uranium-238	NR	12.5				8.8 - 16.3		
Uranium-235	NR	0.091				0.064 - 0.118		
Uranium-Total	NR	12.6				8.8 - 16.4		

Organic							Units: (ug/kg)	
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
Aldrin	NR	92.78				30.89 - 154.68		
alpha-BHC	NR	76.75				21.08 - 132.43		
4,4'-DDD	NR	52.54				5.25 - 103.80		
4,4'-DDE	NR	293.49				120.08 - 466.90		
Endrin	NR	90.82				30.21 - 151.42		
Heptachlor	NR	260.57				94.49 - 426.65		
Hexachlorobutadiene	NR	2414				461 - 4367		
Hexachloroethane	NR	1953				195 - 3823		
1,2,4-Trichlorobenzene	NR	3120				760 - 5480		
Acenaphthene	NR	5673				2127 - 9220		
Anthracene	NR	6210				2089 - 10332		
Benzo(a)anthracene	NR	4507				1869 - 7145		
Benzo(b)fluoranthene	NR	8116				2924 - 13307		

Organic							Units: (ug/kg)	
Analyte	Result	Ref Value	Flag	Notes	Z-Score	Acceptance Range	Unc Value	Unc Flag
4-Chloro-3-methylphenol	NR	3547				1113 - 5982		
2-Chloronaphthalene	NR	7427				2417 - 12436		
Chrysene	NR	7766				2852 - 12681		
Dibenzo(a,h)anthracene	NR	4249				1490 - 7008		
Di-n-butylphthalate	NR	3913				1049 - 6778		
2,4-Dichlorophenol	NR	5300				1341 - 9259		
Diethylphthalate	NR	7616				2200 - 13033		
2,4-Dimethylphenol	NR							
Dimethylphthalate	NR	7671				2954 - 12388		
2,4-Dinitrotoluene	NR	7065				1896 - 12233		
2,6-Dinitrotoluene	NR	2280				732 - 3828		
Di-n-octylphthalate	NR	4378				822 - 7934		
Bis(2-ethylhexyl)phthalate	NR	8115				2679 - 13550		
Fluoranthene	NR	5726				2364 - 9088		
Fluorene	NR	3143				1195 - 5091		
Hexachlorobenzene	NR	1678				623 - 2733		
Hexachlorocyclopentadiene	NR	522				52 - 1256		
2-Methylphenol	NR	1977				198 - 3903		
Pyrene	NR	3263				1235 - 5290		
2,4,5-Trichlorophenol	NR	7682				1743 - 13620		
2,4,6-Trichlorophenol	NR	5577				1636 - 9518		

Radiological							Units: (Bq/kg)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Cobalt-57	0.56		A				0.77	
Nickel-63	NR	514.9				360.4 - 669.4		
Potassium-40	563.3	570	A		-1.2	399 - 741	45	
Uranium-234/233	145	149	A		-2.7	104 - 194	12	
Uranium-238	149	155	A		-3.9	109 - 202	13	
Americium-241	39.1	38.3	A		2.1	26.8 - 49.8	3.1	
Cesium-134	415.6	467	A		-11.0	327 - 607	9.1	L
Cesium-137	588.3	605	A		-2.8	424 - 787	18	
Cobalt-60	4.53	4.113	A				0.51	
Iron-55	NR	983				688 - 1278		
Manganese-54	308.0	307	A		0.3	215 - 399	10	
Plutonium-238	24.8	25.3	A		-2.0	17.7 - 32.9	2.0	
Plutonium-239/240	0.3	0.29	A	(17)			0.15	
Strontium-90	281.8	257	A		9.7	180 - 334	12	
Zinc-65	246.8	242	A		2.0	169 - 315	8.1	
Technetium-99	NR	171				120 - 222		

Radiological Reference Date: January 1, 2009

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
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Organic Flags:

Criteria based on FoPT Tables July 1, 2007

A = Result acceptable Z-score ≤ 3.0 N = Result not acceptable Z-score > 3.0

Other 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-09-GrW20
(SEML01) SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

Radiological						Units: (Bq/L)	
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value Flag
Gross alpha	0.66	0.635	A		3.9	>0.0 - 1.270	0.17 H
Gross beta	1.33	1.27	A		4.7	0.64 - 1.91	0.22

Radiological Reference Date: January 1, 2009

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 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 $>$ +/- 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 +/- 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 $>$ +/- 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-09-GrF20
(SEML01) SRS Environmental Monitoring Laboratory
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Radiological						Units: (Bq/sample)		
Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.23	0.348	A		-33.9	>0.0 - 0.696	0.05	H
Gross beta	0.27	0.279	A		-3.2	0.140 - 0.419	0.047	

Radiological Reference Date: January 1, 2009

Gross Alpha Flags:

A = Result acceptable, Bias \leq +/- 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 $>$ +/- 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 +/- 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 $>$ +/- 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).

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Technetium-99	13.7	14.46	A		-5.3	10.12 - 18.80	0.055	L
Zinc-65	14.6	13.6	A		7.4	9.5 - 17.7	0.83	

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