MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-GrF15: Gross alpha/beta air filter

Lab: SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-GrF15: Gross alpha/beta air filter

Radiological **Units: (Bq/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.248	0.361	A		-31.3	0.00 - 0.72	0.02	
Gross beta	0.356	0.481	A		-26.0	0.24 - 0.72	0.024	

Gross Alpha Flags:

A = Result acceptable, Bias <= +/- 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 <= +/- 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).

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-GrW15: Gross alpha/beta water

Lab: SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-GrW15: Gross alpha/beta water

Radiological **Units: (Bq/L)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.68	0.581	A		17.0	0.00 - 1.16	0.14	H
Gross beta	1.26	1.13	A		11.5	0.56 - 1.70	0.14	

Gross Alpha Flags:

A = Result acceptable, Bias <= +/- 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 <= +/- 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).

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-RdF15: Radiological air filter

Lab: SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-RdF15: Radiological air filter

Inorganic **Units: (ug/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-Total	NR	1.7						
Uranium-235	NR	0.0123						
Uranium-238	NR	1.69						

Radiological **Units: (Bq/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.093	0.093	A		0.0	0.07 - 0.12	0.007	
Cesium-134	2.42	2.934	A		-17.5	2.05 - 3.81	0.11	
Cesium-137	2.32	2.531	A		-8.3	1.77 - 3.29	0.15	
Cobalt-57	3.60	4.096	A		-12.1	2.87 - 5.32	0.14	
Cobalt-60	1.96	2.186	A		-10.3	1.53 - 2.84	0.11	
Manganese-54	0.0382		A				0.058	
Plutonium-238	0.067	0.067	A		0.0	0.05 - 0.09	0.005	
Plutonium-239/240	0.00023	0.00041	A	(17)			0.00015	
Strontium-90	0.77	0.792	A		-2.8	0.55 - 1.03	0.04	
Uranium-234/233	0.0181	0.02	A		-9.5	0.01 - 0.03	0.0014	
Uranium-238	0.0183	0.021	A		-12.9	0.01 - 0.03	0.0014	
Zinc-65	3.13	3.423	A		-8.6	2.40 - 4.45	0.30	

Flags:

A = Result acceptable Bias <=20%
W = Result accepatble 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

Notes:

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

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-MaS15: Radiological, inorganic and semi-volatile organics combined soil standard

Lab: SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-MaS15: Radiological, inorganic and semi-volatile organics combined soil standard

Inorganic Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	72.1				50.47 - 93.73		
Arsenic	NR	59.4				41.58 - 77.22		
Barium	NR	318				222.60 - 413.40		
Beryllium	NR	14.82				10.37 - 19.27		
Chromium	NR	68				47.60 - 88.40		
Cobalt	NR	8				5.60 - 10.40		
Copper	NR	22				15.40 - 28.60		
Lead	NR	31.9				22.33 - 41.47		
Mercury	NR	0.368				0.26 - 0.48		
Nickel	NR	153				107.10 - 198.90		
Selenium	NR	8.43				5.90 - 10.96		
Silver	NR	68.9				48.23 - 89.57		
Thallium	NR	3.55				2.49 - 4.62		
Uranium-Total	NR	2.94				2.06 - 3.82		
Uranium-235	NR	0.0211				0.01 - 0.03		
Uranium-238	NR	2.91				2.04 - 3.78		
Vanadium	NR	35				24.50 - 45.50		
Zinc	NR	121				84.70 - 157.30		

Radiological Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	51.1	57.08	A		-10.5	39.96 - 74.20	3.8	
Cesium-134	0.639		A				0.82	
Cesium-137	363	339.69	A		6.9	237.78 - 441.60	11.4	
Cobalt-57	672	656.29	A		2.4	459.40 - 853.18	15.2	L
Cobalt-60	468	447.1	A		4.7	312.97 - 581.23	9.2	L
Iron-55	NR	557.3				390.11 - 724.49		
Manganese-54	378	346.77	A		9.0	242.74 - 450.80	11.3	L
Nickel-63	NR	323.51				226.46 - 420.56		
Plutonium-238	56.9	61.15	A	(15)	-7.0	42.81 - 79.50	4.3	
Plutonium-239/240	41.0	45.85	A	(15)	-10.6	32.09 - 59.61	3.1	
Potassium-40	656	604	A		8.6	422.80 - 785.20	22.8	
Strontium-90	313	314.35	A		-0.4	220.05 - 408.66	19	
Technetium-99	NR	154.76				108.33 - 201.19		
Uranium-234/233	35.6	37	A		-3.8	25.90 - 48.10	2.7	
Uranium-238	38.9	38.85	A		0.1	27.20 - 50.50	2.9	
Zinc-65	754	657.36	A		14.7	460.15 - 854.57	21.2	L

Organic Units: (ug/kg)

Analyte	Result	Value	Flag	Notes	Z-Score	Range	Value	Flag
Phenol	NR	1810				576.94 - 3,043		
2-Chlorophenol	NR	5879				1,604 - 10,154		
Nitrobenzene	NR	1598				529.83 - 2,666		
2-Nitrophenol	NR	5622				2,282 - 8,963		
2,4-Dichlorophenol	NR	7998				2,197 - 13,800		
1,2,4-Trichlorobenzene	NR	6985				1,010 - 12,959		
Naphthalene	NR	3606				1,238 - 5,973		
Hexachlorobutadiene	NR	2776				376.33 - 5,175		
4-Chloro-3-methylphenol	NR	5494				2,725 - 8,264		
2-Methylphenol	NR	1254				318.00 - 2,190		
2,4,6-Trichlorophenol	NR	6220				2,816 - 9,625		
2,6-Dichlorophenol	NR	2035				593.00 - 2,057		
Dimethylphthalate	NR	5206				2,649 - 7,763		
Acenaphthene	NR	4375				2,010 - 6,740		
2,4-Dinitrotoluene	NR	7322				3,095 - 11,548		
4-Nitrophenol	NR	5926				2,068 - 9,785		
Fluorene	NR	2932				1,252 - 4,613		
Diethylphthalate	NR	1841				1,067 - 2,614		
2,4,5-Trichlorophenol	NR	4038				1,429 - 6,647		
Hexachlorobenzene	NR	6014				1,967 - 10,061		
Pentachlorophenol	NR	6273				1,868 - 10,607		
Phenanthrene	NR	4962				2,072 - 7,851		
Anthracene	NR	985				531.38 - 1,439		
Di-n-butylphthalate	NR	9381				3,779 - 14,983		
Fluoranthene	NR	7053				3,320 - 10,787		
Pyrene	NR	5778				1,910 - 9,647		
Benzo(a)anthracene	NR	2190				1,072 - 3,309		
Chrysene	NR	3513				1,462 - 5,565		
Bis(2-ethylhexyl)phthalate	NR	7353				1,686 - 13,020		
Di-n-octylphthalate	NR	3021				763.93 - 5,278		
Benzo(b)fluoranthene	NR	3647				1,591 - 5,704		
Dibenzo(a,h)anthracene	NR	708				263.16 - 1,153		
Heptachlor	NR	234.4				89.97 - 378.88		
4,4'-DDE	NR	392.1				159.39 - 624.85		
Endrin	NR	201.7				99.69 - 303.81		
4,4'-DDD	NR	116.9				47.24 - 186.61		
4,4'-DDT	NR	259.1				95.88 - 422.26		

Organic Flags:

A = Result acceptable Z-score <=2.0
W = Result accepatble with warning 2.0 < Z-score < 3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

A = Result acceptable Bias <=20%
W = Result accepatble 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

Notes:

(15) = Refractory

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-RdV15: Radiological vegetation

Lab: SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-RdV15: Radiological vegetation

Inorganic **Units: (ug/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-Total	NR	17.5						
Uranium-235	NR	0.126						
Uranium-238	NR	17.4						

Radiological **Units: (Bq/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.142	0.156	A		-9.0	0.11 - 0.20	0.011	
Cesium-134	-0.271		A				0.25	
Cesium-137	2.96	3.074	A		-3.7	2.15 - 4.00	0.29	
Cobalt-57	8.23	8.578	A		-4.1	6.00 - 11.15	0.32	
Cobalt-60	4.46	4.52	A		-1.3	3.16 - 5.88	0.22	
Manganese-54	6.10	6.247	A		-2.4	4.37 - 8.12	0.39	
Plutonium-238	0.128	0.137	A		-6.6	0.10 - 0.18	0.010	
Plutonium-239/240	0.159	0.164	A		-3.0	0.11 - 0.21	0.012	
Strontium-90	1.49	1.561	A		-4.5	1.09 - 2.03	0.11	
Uranium-234/233	0.226	0.208	A		8.7	0.15 - 0.27	0.017	
Uranium-238	0.222	0.216	A		2.8	0.15 - 0.28	0.017	
Zinc-65	9.58	9.798	A		-2.2	6.86 - 12.74	0.76	

Flags:

A = Result acceptable Bias <=20%
W = Result accepatble 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

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-MaW15: Radiological, inorganic combined water standard

Lab: SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-MaW15: Radiological, inorganic combined water standard

Inorganic **Units: (mg/L)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	3.08	3.046	A		1.1	2.13 - 3.96	0.08	L
Arsenic	3.37	3.44	A		-2.0	2.41 - 4.47	0.1	L
Barium	4.17	4.13	A		1.0	2.89 - 5.37	0.12	L
Beryllium			A				0.002	
Cadmium	0.191	0.196	A		-2.6	0.14 - 0.25	0.01	
Chromium			A				0.004	
Copper	0.70	0.688	A		1.7	0.48 - 0.89	0.02	L
Lead	2.22	2.262	A		-1.9	1.58 - 2.94	0.07	
Mercury	0.017	0.01833	A		-7.3	0.01 - 0.02	0.0004	L
Nickel	3.84	3.92	A		-2.0	2.74 - 5.10	0.11	L
Selenium	0.289	0.285	A		1.4	0.20 - 0.37	0.02	
Silver			A				0.01	
Thallium	2.89	2.94	A		-1.7	2.06 - 3.82	0.1	
Uranium-Total	NR	0.176				0.12 - 0.23		
Uranium-235	NR	0.00126				8.82 - 0.00		
Uranium-238	NR	0.174				0.12 - 0.23		
Vanadium	2.57	2.557	A		0.5	1.79 - 3.32	0.06	L
Zinc	0.89	0.885	A		0.6	0.62 - 1.15	0.02	L

Radiological **Units: (Bq/L)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	1.27	1.3	A		-2.3	0.91 - 1.69	0.095	
Cesium-134	83.4	95.1	A		-12.3	66.57 - 123.63	1.39	L
Cesium-137	-9.27		A				3.5	
Cobalt-57	167	166.12	A		0.5	116.28 - 215.96	3.7	L
Cobalt-60	152	153.5	A		-1.0	107.45 - 199.55	2.9	L
Hydrogen-3	898	952.01	A		-5.7	666.41 - 1,238	10.6	L
Iron-55	NR	129.6				90.72 - 168.48		
Manganese-54	327	315	A		3.8	220.50 - 409.50	9.9	
Nickel-63	NR	60.34				42.24 - 78.44		
Plutonium-238	0.95	1	A		-5.0	0.70 - 1.30	0.071	
Plutonium-239/240	0.0042	0.0071	A	(17)			0.002	
Strontium-90	12.9	13.16	A		-2.0	9.21 - 17.11	0.77	
Technetium-99	21.1	23.38	A		-9.8	16.37 - 30.39	0.87	
Uranium-234/233	2.04	2.09	A		-2.4	1.46 - 2.72	0.15	
Uranium-238	2.11	2.17	A		-2.8	1.52 - 2.82	0.16	
Zinc-65	242	228.16	A		6.1	159.71 - 296.61	6.9	L

Flags:

A = Result acceptable Bias <=20%
W = Result accepatble 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

Notes:

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

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-RdF16: Radiological air filter

Lab: SEML01 - SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-RdF16: Radiological air filter

Inorganic — **Units: (ug/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-Total	NR	11.2				7.80 - 14.60		
Uranium-234	NR	0.00058						
Uranium-238	NR	11.2				7.80 - 14.60		

Radiological — **Units: (Bq/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.130	0.142	A		-8.5	0.10 - 0.19	0.0083	
Cesium-134	NR	3.147				2.20 - 4.09		
Cesium-137	1.62	1.805	A		-10.2	1.26 - 2.35	0.290	
Cobalt-57	2.31	2.582	A		-10.5	1.81 - 3.36	0.109	
Cobalt-60	1.60	1.577	A		1.5	1.10 - 2.05	0.099	
Manganese-54	1.89	1.92	A		-1.6	1.34 - 2.50	0.132	
Plutonium-238	0.110	0.118	A		-6.8	0.08 - 0.15	0.0077	
Plutonium-239/240	0.001		A	(17)			0.0005	
Strontium-90	0.67	0.62	A		8.1	0.43 - 0.81	0.025	
Uranium-234/233	0.126	0.134	A		-6.0	0.09 - 0.17	0.0088	
Uranium-238	0.123	0.139	A		-11.5	0.10 - 0.18	0.0086	
Zinc-65	-0.21		A	(17)			0.136	

Flags:

A = Result acceptable Bias <=20%
W = Result accepatble 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

Notes:

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

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-GrW16: Gross alpha/beta water

Lab: SEML01 - SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-GrW16: Gross alpha/beta water

Radiological **Units: (Bq/L)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	1.06	1.033	A		2.6	>0.0 - 2.07	0.26	H
Gross beta	0.98	1.03	A		-4.9	0.52 - 1.54	0.20	H

Gross Alpha Flags:

A = Result acceptable, Bias <= +/- 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 <= +/- 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).

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-GrF16: Gross alpha/beta air filter

Lab: SEML01 - SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-GrF16: Gross alpha/beta air filter

Radiological **Units: (Bq/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Gross alpha	0.13	0.29	A		-55.2	>0.0 - 0.58	0.008	
Gross beta	0.32	0.359	A		-10.9	0.18 - 0.54	0.022	

Gross Alpha Flags:

A = Result acceptable, Bias <= +/- 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 <= +/- 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).

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-MaS16: Radiological, inorganic and semi-volatile organics combined soil standard

Lab: SEML01 - SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-MaS16: Radiological, inorganic and semi-volatile organics combined soil standard

Inorganic Units: (mg/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	NR	90.4				63.30 - 117.50		
Arsenic	NR	79.6				55.70 - 103.50		
Barium	NR	634				444.00 - 824.00		
Beryllium	NR	23.55				16.48 - 30.61		
Cadmium	NR	16.53				11.57 - 21.49		
Chromium	NR	42				29.00 - 55.00		
Cobalt	NR	102.7				71.90 - 133.50		
Copper	NR	94				66.00 - 122.00		
Lead	NR	69.8				48.90 - 90.70		
Mercury	NR	0.945				0.66 - 1.23		
Nickel	NR	65				46.00 - 84.00		
Selenium	NR	18.98				13.28 - 24.67		
Silver	NR	37.7				26.40 - 49.00		
Thallium	NR	54.2				37.90 - 70.50		
Uranium-Total	NR	12.9				9.00 - 16.80		
Uranium-235	NR	0.088				0.06 - 0.11		
Uranium-238	NR	12.8				9.00 - 16.60		
Vanadium	NR	198				139.00 - 257.00		
Zinc	NR	316				221.00 - 411.00		

Radiological Units: (Bq/kg)

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	95.0	105.47	A		-9.9	73.83 - 137.11	6.7	
Cesium-134	359.6	452.13	W		-20.5	316.49 - 587.77	6.1	L
Cesium-137	468.4	525.73	A		-10.9	368.01 - 683.45	14.7	
Cobalt-57	581.5	676.33	A		-14.0	473.43 - 879.23	13.7	L
Cobalt-60	1.33	1.98	A				0.54	
Iron-55	NR	780.71				546.50 - 1,015		
Manganese-54	546.7	594.25	A		-8.0	415.98 - 772.52	16.1	L
Nickel-63	NR	672.3				470.60 - 874.00		
Plutonium-238	79.4	82	A		-3.2	57.00 - 107.00	6.35	
Plutonium-239/240	0.55	0.93	A				0.2	
Potassium-40	554.8	604	A		-8.1	423.00 - 785.00	42	
Strontium-90	224	223.3	A		0.3	156.30 - 290.30	37	
Technetium-99	NR	218.01				152.61 - 283.41		
Uranium-234/233	138	152.44	A		-9.5	106.71 - 198.17	10.8	
Uranium-238	145	158.73	A		-8.7	111.11 - 206.35	11.4	
Zinc-65	855.8	903.61	A		-5.3	632.53 - 1,175	24.7	L

Organic Units: (ug/kg)

Analyte	Result	Value	Flag	Notes	Z-Score	Range	Value	Flag
Hexachloroethane	NR	239				QL - 502.00		
2,4-Dichlorophenol	NR	488				1,185 - 8,574		
1,2,4-Trichlorobenzene	NR	2246				QL - 5,000		
Hexachlorobutadiene	NR	1727				QL - 3,662		
4-Chloro-3-methylphenol	NR	3073				633.00 - 5,512		
2-Methylphenol	NR	346.8				QL - 782.00		
Hexachlorocyclopentadiene	NR	363				QL - 734.00		
2,4,6-Trichlorophenol	NR	1279				352.00 - 2,205		
2-Chloronaphthalene	NR	1005				212.00 - 1,798		
Dimethylphthalate	NR	4176				1,937 - 6,415		
2,6-Dinitrotoluene	NR	2367				813.00 - 3,921		
Acenaphthene	NR	1445				458.00 - 2,431		
2,4-Dinitrotoluene	NR	1663				633.00 - 2,692		
Fluorene	NR	2971				940.00 - 5,002		
Diethylphthalate	NR	255				1,049 - 4,051		
Hexachlorobenzene	NR	1671				542.00 - 2,800		
Anthracene	NR	1731				803.00 - 2,659		
Di-n-butylphthalate	NR	3864				170.00 - 7,557		
Fluoranthene	NR	5891				2,045 - 9,737		
Pyrene	NR	2355				1,052 - 3,658		
Benzo(a)anthracene	NR	2758				1,103 - 4,413		
Chrysene	NR	3274				1,065 - 5,485		
Bis(2-ethylhexyl)phthalate	NR	10885				5,237 - 16,532		
Di-n-octylphthalate	NR	1118				QL - 2,456		
Benzo(b)fluoranthene	NR	17				337.00 - 3,062		
Dibenzo(a,h)anthracene	NR	1014				QL - 2,181		
alpha-BHC	NR	21.4				9.50 - 33.30		
Heptachlor	NR	79.9				28.60 - 131.30		
Aldrin	NR	66.9				22.60 - 111.20		
4,4'-DDE	NR	98.4				5.80 - 191.00		
Dieldrin	NR	6.2				QL - 17.00		
Endrin	NR	5.2				0.50 - 10.00		
4,4'-DDD	NR	18.1				2.10 - 34.00		
4,4'-DDT	NR	23.1				QL - 47.90		

Organic Flags:

A = Result acceptable Z-score <=2.0
W = Result accepatble with warning 2.0 < Z-score < 3.0
N = Result not acceptable Z-score > 3.0

Other Flags:

W = Result accepatble 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

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-RdV16: Radiological vegetation

Lab: SEML01 - SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-RdV16: Radiological vegetation

Inorganic **Units: (ug/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Uranium-Total	NR	20.3				14.20 - 26.40		
Uranium-238	NR	20.3				14.20 - 26.40		

Radiological **Units: (Bq/sample)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	0.001		A	(17)			0.001	
Cesium-134	7.42	7.487	A		-0.9	5.24 - 9.73	0.590	
Cesium-137	5.76	5.495	A		4.8	3.85 - 7.14	0.791	
Cobalt-57	0.059		A	(17)			0.113	
Cobalt-60	6.33	5.806	A		9.0	4.06 - 7.55	0.590	
Manganese-54	8.99	8.351	A		7.7	5.85 - 10.86	1.026	
Plutonium-238	0.180	0.151	A		19.2	0.11 - 0.20	0.017	
Plutonium-239/240	0.001		A	(17)			0.002	
Strontium-90	1.09	1.095	A		-0.5	0.77 - 1.42	0.099	
Uranium-234/233	NR	0.243				0.17 - 0.32		
Uranium-238	NR	0.253				0.18 - 0.33		
Zinc-65	6.15	5.984	A		2.8	4.19 - 7.78	1.482	H

Flags:

A = Result acceptable Bias <=20%
W = Result accepatble 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

Notes:

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

MAPEP Mixed Analyte Performance Evaluation Program

Study: MAPEP-06-MaW16: Radiological, inorganic combined water standard

Lab: SEML01 - SRS Environmental Monitoring Laboratory
Bldg 735-B
Aiken, SC 29808

MAPEP-06-MaW16: Radiological, inorganic combined water standard

Inorganic **Units: (mg/L)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Antimony	0.578	0.547	A		5.7	0.38 - 0.71	0.017	L
Arsenic	1.80	1.86	A		-3.2	1.30 - 2.42	0.065	
Barium	0.056		A				0.005	
Beryllium	0.285	0.2962	A		-3.8	0.21 - 0.39	0.012	
Cadmium	0.642	0.659	A		-2.6	0.46 - 0.86	0.03	
Chromium	3.26	3.237	A		0.7	2.27 - 4.21	0.14	
Cobalt	NR	9.19				6.43 - 11.95		
Copper	1.61	1.607	A		0.2	1.13 - 2.09	0.068	
Lead	2.95	3.027	A		-2.5	2.12 - 3.94	0.117	
Mercury	0.00442	0.00452	A		-2.2	0.00 - 0.01	0.038	H
Nickel	7.19	7.39	A		-2.7	5.17 - 9.61	0.326	
Selenium	0.763	0.819	A		-6.8	0.57 - 1.07	0.024	
Silver			A				0.005	
Thallium	4.55	4.655	A		-2.3	3.26 - 6.05	0.175	
Uranium-Total	NR	0.18				0.13 - 0.23		
Uranium-235	NR	0.00128				0.00 - 0.00		
Uranium-238	NR	0.178				0.13 - 0.23		
Vanadium	6.37	6.13	A		3.9	4.29 - 7.97	0.269	
Zinc	11.0	12.12	A		-9.2	8.48 - 15.76	0.464	

Radiological **Units: (Bq/L)**

Analyte	Result	Ref Value	Flag	Notes	Bias (%)	Acceptance Range	Unc Value	Unc Flag
Americium-241	2.16	2.31	A		-6.5	1.62 - 3.00	0.17	
Cesium-134	98.2	112.82	A		-13.0	78.97 - 146.66	1.64	L
Cesium-137	197.9	196.14	A		0.9	137.30 - 254.98	12.4	
Cobalt-57	216.2	213.08	A		1.5	149.16 - 277.00	4.92	L
Cobalt-60	48.1	47.5	A		1.3	33.20 - 61.80	1.0	L
Hydrogen-3	400	428.85	A		-6.7	300.20 - 557.50	8.69	L
Iron-55	NR	165.4				115.80 - 215.00		
Manganese-54	-0.598		A	(17)			0.22	
Nickel-63	NR	118.62				83.03 - 154.21		
Plutonium-238	1.43	1.39	A		2.9	0.97 - 1.81	0.098	
Plutonium-239/240	1.89	1.94	A		-2.6	1.36 - 2.52	0.13	
Strontium-90	15.35	15.69	A		-2.2	10.98 - 20.40	1.12	
Technetium-99	23.7	27.15	A		-12.7	19.00 - 35.29	1.48	
Uranium-234/233	2.16	2.15	A		0.5	1.50 - 2.80	0.15	
Uranium-238	2.31	2.22	A		4.1	1.55 - 2.89	0.16	
Zinc-65	188.3	176.37	A		6.8	123.46 - 229.28	5.5	L

Flags:

A = Result acceptable Bias <=20%
W = Result accepatble 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

Notes:

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