

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Methods: 98

Sample # 190111

Statistical Summary

Labs Reporting: 90

Grade 21-0-0

Issue Date : 02/28/2019

Method Code	Analyte & Method Sample # 190111	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Hornitz %RSD
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	8	8	20.76	0.3061	20.80		0.2436	0.1076	1.17%		0.0535	2.53%
001.99	Ammoniacal Nitrogen, Other (%)	29	29	20.95	0.3693	20.96		0.2041	0.0474	0.97%		0.0835	2.53%
009.99	Ammoniacal Plus Nitrate Nitrogen, Other (%)	1		21.03									
010.11	Total Nitrogen, Modified Comprehensive (21%)	4	4	20.97	0.0950	20.97	0.7397	0.0950	0.0594	0.45%	0.30	0.0363	2.53%
010.12	Total Nitrogen, Salicylic (21%)	1		20.75									
010.60	Total Nitrogen, Combustion (21%)	60	58	21.13	0.2482	21.15	0.7415	0.1898	0.0312	0.90%	0.60	0.1566	2.53%
010.99	Total Nitrogen, Other (21%)	6	6	20.72	0.3952	20.74	0.7374	0.3931	0.2006	1.89%	1.24	0.0858	2.53%
020.20	Total Phosphorus as P2O5, Spectrophotometric Molyb	1		0.0100									
020.50	Total Phosphorus as P2O5, ICP (%)	4	1	0.0029		20.74		0.3931	0.4913	1.89%		0.0004	2.53%
020.99	Total Phosphorus as P2O5, Other (%)	1		0.0014									
041.50	Direct Available Phosphorus as P2O5, ICP (%)	1		0.0000									
041.60	Direct Available Phosphorus as P2O5, Citrate-EDTA ..	1		0.0100									
050.51	Soluble Potassium as K2O, ICP (Citrate) (%)	1		0.1000									
050.52	Soluble Potassium as K2O, ICP (Citrate-EDTA) (%)	1		0.0100									
050.99	Soluble Potassium as K2O, Other (%)	5	2	0.0149	0.0031	0.0149	0.4100	0.0031	0.0027	20.68%	0.02	0.0024	7.53%
060.00	Water (Free), Vacuum Oven (%)	1		0.1200									
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours,...	1		0.7000									
060.99	Water (Free), Other (%)	2	2	0.4589	0.3763								
101.30	Acid Soluble Calcium, ICP, test portion inorganic ... (%)	1		0.0700									
101.33	Acid Soluble Calcium, ICP, 2017.02 (%)	2	1	0.0208									
101.99	Acid Soluble Calcium, Other (%)	1		0.0231									
121.30	Acid Soluble Magnesium, ICP, test portion inorgani... (1		0.0100									
121.33	Acid Soluble Magnesium, ICP, 2017.02 (%)	3	1	0.0095		0.4589	0.2229	0.3763	0.4704	82.01%	3.93	0.0083	4.50%
121.99	Acid Soluble Magnesium, Other (%)	3	3	0.0043	0.0063	0.0043	0.2002	0.0062	0.0045	144.23%	0.07	0.0028	9.07%
143.00	Elemental Sulfur, Gravimetric Sulfur - carbon disu... (%)	2	1	0.1900									
143.99	Elemental Sulfur, Other (%)	5	5	23.41	1.657	23.41		1.657	0.9261	7.08%		0.1366	2.49%
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulfur - ... (%)	12	12	24.66	0.3522	24.62		0.3147	0.1135	1.28%		0.0737	2.47%
145.99	Sulfate Sulfur, HCl soluble, Other (%)	1		24.05									
148.00	Total Sulfur, Combustion (24%)	8	8	24.42	0.6261	24.42	1.0000	0.7100	0.3138	2.91%	1.65	0.3500	2.47%
148.01	Total Sulfur, Gravimetric - sulfate and elemental... (24	14	14	24.40	0.4312	24.41	1.0000	0.4370	0.1460	1.79%	1.02	0.2410	2.47%
148.07	Total Sulfur, ICP, test portion as in 2017.02 (24%)	15	15	23.44	2.090	24.01	1.0000	0.6116	0.1974	2.55%	1.43	0.3354	2.48%

Method Code	Analyte & Method Sample # 190111	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Howitz %RSD
148.99	Total Sulfur, Other (24%)	16	15	24.32	0.5249	24.33	1.0000	0.4802	0.1550	1.97%	1.12	0.1908	2.47%
149.02	Sulfur - HNO3 soluble, Turbidimetric, modification...	1		23.93									
149.04	Sulfur - HNO3 soluble, ICP (%)	3	3	23.32	0.8875	23.32		0.8875	0.6405	3.81%		0.1376	2.49%
151.00	Acid Soluble Arsenic , AA, test portion 2006.03 m...	1		0.0800									
151.30	Acid Soluble Arsenic , ICP (ppm)	4	3	328.5	568.3	328.5		568.3	410.1	172.97%		103.7	6.69%
151.33	Acid Soluble Arsenic , ICP, 2017.02 (ppm)	2	0	0.0001									
151.34	Acid Soluble Arsenic , ICP, EPA 3050B/6010C (ppm)	2	0	0.1839									
151.99	Acid Soluble Arsenic , Other (ppm)	4	1	1.020		328.5		568.3	710.3	172.97%		0.0200	6.69%
165.30	Acid Soluble Boron , ICP, test portion in 982.01 (%)	2	1	0.0009									
165.99	Acid Soluble Boron , Other (%)	2	0	0.0000									
181.00	Acid Soluble Cadmium , AA, test portion 2006.03 m...	1		0.1248									
181.30	Acid Soluble Cadmium , ICP (ppm)	7	5	5.315	11.82	5.315		11.82	6.608	222.39%		2.716	12.44%
181.33	Acid Soluble Cadmium , ICP, 2017.02 (ppm)	3	0	0.0000		5.315		11.82		222.39%		0.0000	12.44%
181.34	Acid Soluble Cadmium , ICP, EPA 3050B/6010C (ppm)	3	0	0.0000		5.315		11.82		222.39%		0.0000	12.44%
181.99	Acid Soluble Cadmium , Other (ppm)	4	2	0.4025	0.0035	0.4025		0.0035	0.0031	0.88%		0.1050	18.34%
191.00	Acid Soluble Chromium , AA, test portion 2006.03 ...	1		0.5493									
191.30	Acid Soluble Chromium , ICP (ppm)	8	6	0.7545	0.4313	0.7173		0.3996	0.2039	55.71%		0.0709	16.82%
191.33	Acid Soluble Chromium , ICP, 2017.02 (ppm)	2	2	2.118	2.099								
191.34	Acid Soluble Chromium , ICP, EPA 3050B/6010C (ppm)	3	2	1.226	0.8741	1.226		0.8741	0.7726	71.31%		1.212	15.51%
191.99	Acid Soluble Chromium , Other (ppm)	4	3	0.7250	0.5712	0.7250		0.5712	0.4122	78.79%		0.2033	16.79%
202.30	Acid Soluble Cobalt , ICP (ppm)	5	3	0.0848	0.0104	0.0848	1.0254	0.0104	0.0075	12.24%	0.02	0.0111	23.19%
202.33	Acid Soluble Cobalt , ICP, 2017.02 (ppm)	4	2	0.1723	0.0315	0.1723	1.0517	0.0315	0.0278	18.27%	0.07	0.0735	20.84%
202.34	Acid Soluble Cobalt , ICP, EPA 3050B/6010C (ppm)	3	0	0.0000		0.1723	1.0517	0.0315		18.27%	0.07	0.0000	20.84%
202.99	Acid Soluble Cobalt , Other (ppm)	5	2	0.1680	0.1167	0.1680	1.0504	0.1167	0.1031	69.45%	0.26	0.0020	20.92%
221.00	Acid Soluble Copper , AA, inorganic 965.09 (%)	1		0.0016									
221.30	Acid Soluble Copper , ICP, test portion inorganic...	3	2	247.5	350.0	247.5	1.0000	350.0	309.4	141.42%	815.54	5.001	1.75%
221.32	Acid Soluble Copper , ICP, test portion 2006.03A-...	2	2	0.0002	0.0002								
221.33	Acid Soluble Copper , ICP, 2017.02 (%)	4	2	68.36	96.68	68.36	1.0000	96.68	85.45	141.42%	225.26	25.17	2.12%
221.99	Acid Soluble Copper , Other (%)	7	3	0.0004	0.0002	0.0004	0.0050	0.0002	0.0001	45.07%	0.08	0.0001	12.98%
241.30	Acid Soluble Iron , ICP, test portion inorganic 96...	1		0.0100									
241.33	Acid Soluble Iron , ICP, 2017.02 (%)	3	2	0.0376	0.0507	0.0376	0.0088	0.0507	0.0448	134.84%	13.49	0.0235	6.55%
241.99	Acid Soluble Iron , Other (%)	4	3	0.1245	0.2123	0.1245	0.0175	0.2123	0.1532	170.49%	28.34	0.2405	5.47%
251.00	Acid Soluble Lead , AA, test portion 2006.03 modi...	1		0.7741									
251.30	Acid Soluble Lead , ICP (ppm)	7	4	0.0665	0.0562	0.0665		0.0562	0.0351	84.41%		0.0078	24.05%
251.33	Acid Soluble Lead , ICP, 2017.02 (ppm)	3	0	0.0000		0.0665		0.0562		84.41%		0.0000	24.05%
251.34	Acid Soluble Lead , ICP, EPA 3050B/6010C (ppm)	3	0	0.0000		0.0665		0.0562		84.41%		0.0000	24.05%
251.99	Acid Soluble Lead , Other (ppm)	4	2	1.684	0.5710	1.684		0.5710	0.5047	33.91%		0.0725	14.79%
261.30	Acid Soluble Manganese , ICP, test portion 972.02a ('	1		0.0100									
261.34	Acid Soluble Manganese , ICP, test portion 2006.0...	1		0.0004									
261.35	Acid Soluble Manganese , ICP, 2017.02 (%)	3	0	0.0000		1.684	0.1734	0.5710		33.91%	7.67	0.0000	3.70%
261.99	Acid Soluble Manganese , Other (%)	2	0	0.0000									
281.00	Acid Soluble Mercury , AA (ppm)	2	0	0.0010									

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281.30	Acid Soluble Mercury , ICP (ppm)	3	0	0.0000		1.684		0.5710		33.91%		0.0000	14.79%
281.99	Acid Soluble Mercury , Other (ppm)	4	1	0.0200		1.684		0.5710	0.7137	33.91%		0.0000	14.79%
289.00	Acid Soluble Molybdenum , AA, test portion 2006.0...	1		26.70									
289.30	Acid Soluble Molybdenum , ICP (ppm)	7	5	8.792	11.38	8.792	3.6377	11.38	6.364	129.48%	7.29	0.7949	11.53%
289.33	Acid Soluble Molybdenum , ICP, 2017.02 (ppm)	2	1	0.1680									
289.34	Acid Soluble Molybdenum , ICP, EPA 3050B/6010C (p	2	0	0.1306									
289.99	Acid Soluble Molybdenum , Other (ppm)	2	1	1.000									
291.00	Acid Soluble Nickel , AA, test portion 2006.03 mo... (p	1		0.6000									
291.30	Acid Soluble Nickel , ICP (ppm)	7	5	0.8882	0.8491	0.8882		0.8491	0.4747	95.60%		0.0402	16.28%
291.33	Acid Soluble Nickel , ICP, 2017.02 (ppm)	3	1	1.452		0.8882		0.8491	1.061	95.60%		0.6484	16.28%
291.34	Acid Soluble Nickel , ICP, EPA 3050B/6010C (ppm)	3	2	1.252	1.218	1.252		1.218	1.077	97.31%		1.637	15.46%
291.99	Acid Soluble Nickel , Other (ppm)	5	4	1.262	0.0934	1.262		0.0934	0.0584	7.40%		0.2840	15.45%
301.00	Acid Soluble Selenium , AA, test portion 2006.03 ... (p	1		0.0800									
301.30	Acid Soluble Selenium , ICP (ppm)	3	1	0.9050		1.262		0.0934	0.1168	7.40%		0.1300	15.45%
301.33	Acid Soluble Selenium , ICP, 2017.02 (ppm)	2	1	0.4515									
301.34	Acid Soluble Selenium , ICP, EPA 3050B/6010C (ppr	3	0	0.4460		1.262		0.0934		7.40%		0.8919	15.45%
301.99	Acid Soluble Selenium , Other (ppm)	5	2	0.3845	0.2602	0.3845		0.2602	0.2300	67.68%		0.0570	18.47%
311.33	Sodium, ICP, test portion as in 2017.02 (%)	1		0.0010									
311.99	Sodium, Other (%)	1		0.0200									
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (%)	2	2	0.0043	0.0052								
321.30	Acid Soluble Zinc , ICP, test portion inorganic 9... (%)	2	1	1.325									
321.32	Acid Soluble Zinc , ICP, test portion 2006.03A-C (%)	2	2	0.0004	0.0000								
321.33	Acid Soluble Zinc , ICP, 2017.02 (%)	3	0	0.0000		0.0004	0.0050	0.0000		9.43%	0.02	0.0000	13.11%
321.99	Acid Soluble Zinc , Other (%)	10	4	0.0005	0.0005	0.0005	0.0051	0.0005	0.0003	95.57%	0.22	0.0002	12.56%
325.30	Water Soluble Zinc , ICP (%)	1		40.00									

The Method IA Ratio = 2.33 * Robust SD / IA at the Method Assigned Value. IA ratios of 1 and less indicate participant data dispersion is as good or less than the IA. Red indicates the IA ratio is significantly greater than 1, Orange indicates marginally greater than 1, Green indicates IA ratio is not significantly greater than 1 and Grey indicates < 6 labs reporting.

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STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 190111

Grade 21-0-0

Method Precision Report

Issue Date : 02/28/2019

Method Code	Analyte & Method	# Tests Submitted	# Tests Used in Precision Calcs	Mean	SD	Between Labs sL	Within Labs sr	Reproducibility sR	Between Labs %RSD	Within Labs %rsd	Reproducibility %RSD	sR/sr
001.99	Ammoniacal Nitrogen, Other (%)	29	27	20.99	0.3077	0.3030	0.0756	0.3123	1.44%	0.36%	1.49%	4.132
010.60	Total Nitrogen, Combustion (21%)	60	54	21.18	0.1796	0.1566	0.1243	0.1999	0.74%	0.59%	0.94%	1.609
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulfur - sulfate form (%)	12	11	24.58	0.2458	0.2421	0.0601	0.2494	0.98%	0.24%	1.01%	4.151
148.01	Total Sulfur, Gravimetric - sulfate and elemental (24%)	14	14	24.40	0.4312	0.3996	0.2291	0.4606	1.64%	0.94%	1.89%	2.010
148.07	Total Sulfur, ICP, test portion as in 2017.02 (24%)	15	14	23.94	0.8345	0.8104	0.2814	0.8579	3.39%	1.18%	3.58%	3.049
148.99	Total Sulfur, Other (24%)	16	15	24.32	0.5249	0.5101	0.1751	0.5393	2.10%	0.72%	2.22%	3.080

Notes: Precision data calculated when 8 or more Tests included.

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STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Methods: 98

Sample # 190111

Lab Values

Labs Reporting: 90

Grade 21-0-0

Issue Date : 02/28/2019

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	0231	20.11	0.0300	20.80	0.2436	0.0535	8	-2.60	NA	0
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	0309	20.54	0.0300	20.80	0.2436	0.0535	8	-0.99	NA	0
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	0498	20.75	0.1000	20.80	0.2436	0.0535	8	-0.18	NA	0
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	0451	20.81	0.0600	20.80	0.2436	0.0535	8	0.05	NA	0
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	0169	20.94	0.1300	20.80	0.2436	0.0535	8	0.52	NA	0
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	0531	20.94	0.0200	20.80	0.2436	0.0535	8	0.53	NA	0
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	0177	20.94	0.0180	20.80	0.2436	0.0535	8	0.53	NA	0
001.10	Ammoniacal Nitrogen, Magnesium Oxide Method (%)	0444	21.04	0.0400	20.80	0.2436	0.0535	8	0.91	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0546	19.81	0.0600	20.96	0.2041	0.0835	29	-5.62	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0553	20.28	0.1900	20.96	0.2041	0.0835	29	-3.35	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0368	20.57	0.2800	20.96	0.2041	0.0835	29	-1.89	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0520	20.67	0.0600	20.96	0.2041	0.0835	29	-1.41	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0544	20.79	0.0200	20.96	0.2041	0.0835	29	-0.82	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0535	20.80	0.0300	20.96	0.2041	0.0835	29	-0.80	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0476	20.81	0.0127	20.96	0.2041	0.0835	29	-0.71	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0371	20.87	0.0800	20.96	0.2041	0.0835	29	-0.43	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0027	20.88	0.2760	20.96	0.2041	0.0835	29	-0.40	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0423	20.90	0.1000	20.96	0.2041	0.0835	29	-0.28	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0510	20.92	0.0330	20.96	0.2041	0.0835	29	-0.19	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0513	20.92	0.0200	20.96	0.2041	0.0835	29	-0.18	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0220	20.93	0.0100	20.96	0.2041	0.0835	29	-0.16	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0531	20.95	0.0400	20.96	0.2041	0.0835	29	-0.04	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0539	20.97	0.0200	20.96	0.2041	0.0835	29	0.06	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0533	20.99	0.0700	20.96	0.2041	0.0835	29	0.13	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0536	21.00	0.1000	20.96	0.2041	0.0835	29	0.21	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0096	21.02	0.0500	20.96	0.2041	0.0835	29	0.28	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0522	21.02	0.0800	20.96	0.2041	0.0835	29	0.31	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0405	21.04	0.0600	20.96	0.2041	0.0835	29	0.40	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0394	21.05	0.0320	20.96	0.2041	0.0835	29	0.45	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0169	21.05	0.0200	20.96	0.2041	0.0835	29	0.45	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0518	21.05	0.3000	20.96	0.2041	0.0835	29	0.45	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0556	21.05	0.1000	20.96	0.2041	0.0835	29	0.45	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0532	21.11	0.0600	20.96	0.2041	0.0835	29	0.75	NA	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
001.99	Ammoniacal Nitrogen, Other (%)	0550	21.26	0.0000	20.96	0.2041	0.0835	29	1.48	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0549	21.45	0.1000	20.96	0.2041	0.0835	29	2.41	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0527	21.70	0.2000	20.96	0.2041	0.0835	29	3.64	NA	0
001.99	Ammoniacal Nitrogen, Other (%)	0524	21.82	0.0187	20.96	0.2041	0.0835	29	4.24	NA	0
009.99	Ammoniacal Plus Nitrate Nitrogen, Other (%)	0519	21.03	0.0100				1			0
010.11	Total Nitrogen, Modified Comprehensive (21%)	0105	20.88	0.0100	20.97	0.0950	0.0363	4	-0.95		0
010.11	Total Nitrogen, Modified Comprehensive (21%)	0220	20.90	0.0600	20.97	0.0950	0.0363	4	-0.69		0
010.11	Total Nitrogen, Modified Comprehensive (21%)	0309	21.01	0.0600	20.97	0.0950	0.0363	4	0.47		0
010.11	Total Nitrogen, Modified Comprehensive (21%)	0510	21.08	0.0151	20.97	0.0950	0.0363	4	1.18		0
010.12	Total Nitrogen, Salicylic (21%)	0498	20.75	0.1000				1			0
010.60	Total Nitrogen, Combustion (21%)	0117	20.05	0.1000	21.15	0.1898	0.1566	58	-5.78	Low	0
010.60	Total Nitrogen, Combustion (21%)	0307	20.63	0.8600	21.15	0.1898	0.1566	58	-2.72	OK	0
010.60	Total Nitrogen, Combustion (21%)	0325	20.65	0.9000	21.15	0.1898	0.1566	58	-2.62	OK	0
010.60	Total Nitrogen, Combustion (21%)	0055	20.81	0.1000	21.15	0.1898	0.1566	58	-1.77	OK	0
010.60	Total Nitrogen, Combustion (21%)	0482	20.85	0.1000	21.15	0.1898	0.1566	58	-1.56	OK	0
010.60	Total Nitrogen, Combustion (21%)	0451	20.93	0.7500	21.15	0.1898	0.1566	58	-1.17	OK	0
010.60	Total Nitrogen, Combustion (21%)	0157	20.95	0.1000	21.15	0.1898	0.1566	58	-1.04	OK	0
010.60	Total Nitrogen, Combustion (21%)	0324	20.95	0.1000	21.15	0.1898	0.1566	58	-1.04	OK	0
010.60	Total Nitrogen, Combustion (21%)	0452	20.96	0.0300	21.15	0.1898	0.1566	58	-1.01	OK	0
010.60	Total Nitrogen, Combustion (21%)	0356	20.96	0.0600	21.15	0.1898	0.1566	58	-0.98	OK	0
010.60	Total Nitrogen, Combustion (21%)	0443	20.99	0.4100	21.15	0.1898	0.1566	58	-0.85	OK	0
010.60	Total Nitrogen, Combustion (21%)	0234	21.00	0.2000	21.15	0.1898	0.1566	58	-0.77	OK	0
010.60	Total Nitrogen, Combustion (21%)	0486	21.00	0.0600	21.15	0.1898	0.1566	58	-0.77	OK	0
010.60	Total Nitrogen, Combustion (21%)	0177	21.01	0.1700	21.15	0.1898	0.1566	58	-0.75	OK	0
010.60	Total Nitrogen, Combustion (21%)	0472	21.01	0.3800	21.15	0.1898	0.1566	58	-0.72	OK	0
010.60	Total Nitrogen, Combustion (21%)	0481	21.01	0.0600	21.15	0.1898	0.1566	58	-0.72	OK	0
010.60	Total Nitrogen, Combustion (21%)	0501	21.05	0.0510	21.15	0.1898	0.1566	58	-0.52	OK	0
010.60	Total Nitrogen, Combustion (21%)	0523	21.05	0.1000	21.15	0.1898	0.1566	58	-0.51	OK	0
010.60	Total Nitrogen, Combustion (21%)	0231	21.06	0.0200	21.15	0.1898	0.1566	58	-0.46	OK	0
010.60	Total Nitrogen, Combustion (21%)	0041	21.07	0.0700	21.15	0.1898	0.1566	58	-0.43	OK	0
010.60	Total Nitrogen, Combustion (21%)	0423	21.07	0.0400	21.15	0.1898	0.1566	58	-0.40	OK	0
010.60	Total Nitrogen, Combustion (21%)	0354	21.10	0.0000	21.15	0.1898	0.1566	58	-0.25	OK	0
010.60	Total Nitrogen, Combustion (21%)	0483	21.11	0.1100	21.15	0.1898	0.1566	58	-0.22	OK	0
010.60	Total Nitrogen, Combustion (21%)	0043	21.12	0.0300	21.15	0.1898	0.1566	58	-0.17	OK	0
010.60	Total Nitrogen, Combustion (21%)	0555	21.12	0.0800	21.15	0.1898	0.1566	58	-0.14	OK	0
010.60	Total Nitrogen, Combustion (21%)	0292	21.13	0.0100	21.15	0.1898	0.1566	58	-0.11	OK	0
010.60	Total Nitrogen, Combustion (21%)	0095	21.13	0.1200	21.15	0.1898	0.1566	58	-0.09	OK	0
010.60	Total Nitrogen, Combustion (21%)	0527	21.13	0.0400	21.15	0.1898	0.1566	58	-0.07	OK	0
010.60	Total Nitrogen, Combustion (21%)	0049	21.14	0.0500	21.15	0.1898	0.1566	58	-0.06	OK	0
010.60	Total Nitrogen, Combustion (21%)	0389	21.14	0.0100	21.15	0.1898	0.1566	58	-0.06	OK	0
010.60	Total Nitrogen, Combustion (21%)	0007	21.15	0.1000	21.15	0.1898	0.1566	58	0.02	OK	0
010.60	Total Nitrogen, Combustion (21%)	0405	21.17	0.0100	21.15	0.1898	0.1566	58	0.10	OK	0
010.60	Total Nitrogen, Combustion (21%)	0136	21.17	0.1000	21.15	0.1898	0.1566	58	0.12	OK	0

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			Value	Range	Rob Mean	Rob SD	R-bar				
010.60	Total Nitrogen, Combustion (21%)	0114	21.18	0.0400	21.15	0.1898	0.1566	58	0.18	OK	0
010.60	Total Nitrogen, Combustion (21%)	0360	21.20	0.1700	21.15	0.1898	0.1566	58	0.25	OK	0
010.60	Total Nitrogen, Combustion (21%)	0029	21.20	0.0800	21.15	0.1898	0.1566	58	0.28	OK	0
010.60	Total Nitrogen, Combustion (21%)	0040	21.20	0.0000	21.15	0.1898	0.1566	58	0.28	OK	0
010.60	Total Nitrogen, Combustion (21%)	0042	21.20	0.0000	21.15	0.1898	0.1566	58	0.28	OK	0
010.60	Total Nitrogen, Combustion (21%)	0377	21.20	0.0800	21.15	0.1898	0.1566	58	0.28	OK	0
010.60	Total Nitrogen, Combustion (21%)	0096	21.21	0.0300	21.15	0.1898	0.1566	58	0.31	OK	0
010.60	Total Nitrogen, Combustion (21%)	0291	21.23	0.0100	21.15	0.1898	0.1566	58	0.41	OK	0
010.60	Total Nitrogen, Combustion (21%)	0105	21.24	0.3100	21.15	0.1898	0.1566	58	0.47	OK	0
010.60	Total Nitrogen, Combustion (21%)	0102	21.25	0.1000	21.15	0.1898	0.1566	58	0.54	OK	0
010.60	Total Nitrogen, Combustion (21%)	0131	21.25	0.0060	21.15	0.1898	0.1566	58	0.56	OK	0
010.60	Total Nitrogen, Combustion (21%)	0550	21.26	0.0000	21.15	0.1898	0.1566	58	0.60	OK	0
010.60	Total Nitrogen, Combustion (21%)	0402	21.28	0.5490	21.15	0.1898	0.1566	58	0.71	OK	0
010.60	Total Nitrogen, Combustion (21%)	0073	21.32	0.1000	21.15	0.1898	0.1566	58	0.91	OK	0
010.60	Total Nitrogen, Combustion (21%)	0534	21.34	0.1100	21.15	0.1898	0.1566	58	0.99	OK	0
010.60	Total Nitrogen, Combustion (21%)	0542	21.34	0.1570	21.15	0.1898	0.1566	58	1.01	OK	0
010.60	Total Nitrogen, Combustion (21%)	0547	21.34	0.2200	21.15	0.1898	0.1566	58	1.02	OK	0
010.60	Total Nitrogen, Combustion (21%)	0485	21.39	0.3110	21.15	0.1898	0.1566	58	1.26	OK	0
010.60	Total Nitrogen, Combustion (21%)	0230	21.40	0.0000	21.15	0.1898	0.1566	58	1.33	OK	0
010.60	Total Nitrogen, Combustion (21%)	0444	21.41	0.1200	21.15	0.1898	0.1566	58	1.39	OK	0
010.60	Total Nitrogen, Combustion (21%)	0027	21.45	0.5000	21.15	0.1898	0.1566	58	1.60	OK	0
010.60	Total Nitrogen, Combustion (21%)	0421	21.45	0.1000	21.15	0.1898	0.1566	58	1.60	OK	0
010.60	Total Nitrogen, Combustion (21%)	0025	21.60	0.2900	21.15	0.1898	0.1566	58	2.36	OK	0
010.60	Total Nitrogen, Combustion (21%)	0023	21.60	0.3820	21.15	0.1898	0.1566	58	2.37	OK	0
010.60	Total Nitrogen, Combustion (21%)	0368	21.62	0.0990	21.15	0.1898	0.1566	58	2.52	OK	0
010.60	Total Nitrogen, Combustion (21%)	0255	24.09	1.538	21.15	0.1898	0.1566	58	15.53	High	1
010.60	Total Nitrogen, Combustion (21%)	0422	13.82	0.2100	21.15	0.1898	0.1566	58	-38.62	Low	2
010.99	Total Nitrogen, Other (21%)	0481	20.02	0.1500	20.74	0.3931	0.0858	6	-1.65	OK	0
010.99	Total Nitrogen, Other (21%)	0524	20.53	0.0330	20.74	0.3931	0.0858	6	-0.48	OK	0
010.99	Total Nitrogen, Other (21%)	0520	20.79	0.1800	20.74	0.3931	0.0858	6	0.10	OK	0
010.99	Total Nitrogen, Other (21%)	0493	20.90	0.1000	20.74	0.3931	0.0858	6	0.35	OK	0
010.99	Total Nitrogen, Other (21%)	0519	21.04	0.0200	20.74	0.3931	0.0858	6	0.67	OK	0
010.99	Total Nitrogen, Other (21%)	0394	21.05	0.0320	20.74	0.3931	0.0858	6	0.69	OK	0
020.20	Total Phosphorus as P2O5, Spectrophotometric ... (%)	0292	0.0100	0.0000				1			0
020.50	Total Phosphorus as P2O5, ICP (%)	0524	0.0029	0.0004				1			0
020.50	Total Phosphorus as P2O5, ICP (%)	0421	0.0000	0.0000				1			4
020.50	Total Phosphorus as P2O5, ICP (%)	0527	< 0.05					1			5
020.50	Total Phosphorus as P2O5, ICP (%)	0547	< 0.1					1			5
020.99	Total Phosphorus as P2O5, Other (%)	0515	0.0014	0.0000				1			0
041.50	Direct Available Phosphorus as P2O5, ICP (%)	0325	0.0000	0.0000				0			4
041.60	Direct Available Phosphorus as P2O5, Citrate-... (%)	0354	< 0.01					0			5
050.51	Soluble Potassium as K2O, ICP (Citrate) (%)	0547	< 0.1					0			5
050.52	Soluble Potassium as K2O, ICP (Citrate-EDTA) (%)	0354	< 0.01					0			5

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			Value	Range	Rob Mean	Rob SD	R-bar				
050.99	Soluble Potassium as K2O, Other (%)	0389	0.0127	0.0018				2			0
050.99	Soluble Potassium as K2O, Other (%)	0524	0.0171	0.0029				2			0
050.99	Soluble Potassium as K2O, Other (%)	0325	0.0000	0.0000				2			4
050.99	Soluble Potassium as K2O, Other (%)	0421	0.0000	0.0000				2			4
050.99	Soluble Potassium as K2O, Other (%)	0527	< 0.05					2			5
060.00	Water (Free), Vacuum Oven (%)	0007	0.1200	0.0400				1			0
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 h... (%)	0518	0.7000	0.0400				1			0
060.99	Water (Free), Other (%)	0510	0.1928	0.0060				2			0
060.99	Water (Free), Other (%)	0009	0.7250	0.0500				2			0
101.30	Acid Soluble Calcium, ICP, test portion inorg... (%)	0354	0.0700	0.0000				1			0
101.33	Acid Soluble Calcium, ICP, 2017.02 (%)	0527	0.0208	0.0024				1			0
101.33	Acid Soluble Calcium, ICP, 2017.02 (%)	0421	0.0000	0.0000				1			4
101.99	Acid Soluble Calcium, Other (%)	0389	0.0231	0.0009				1			0
121.30	Acid Soluble Magnesium, ICP, test portion ino... (%)	0354	< 0.01					0			5
121.33	Acid Soluble Magnesium, ICP, 2017.02 (%)	0515	0.0095	0.0083				1			0
121.33	Acid Soluble Magnesium, ICP, 2017.02 (%)	0421	0.0000	0.0000				1			4
121.33	Acid Soluble Magnesium, ICP, 2017.02 (%)	0527	< 0.001					1			5
121.99	Acid Soluble Magnesium, Other (%)	0524	0.0007	0.0002	0.0043	0.0062	0.0028	3	-0.58		0
121.99	Acid Soluble Magnesium, Other (%)	0389	0.0008	0.0001	0.0043	0.0062	0.0028	3	-0.57		0
121.99	Acid Soluble Magnesium, Other (%)	0515	0.0116	0.0081	0.0043	0.0062	0.0028	3	1.15		0
143.00	Elemental Sulfur, Gravimetric Sulfur - carbon... (%)	0095	0.1900	0.1400				1			0
143.00	Elemental Sulfur, Gravimetric Sulfur - carbon... (%)	0485	0.0000	0.0000				1			4
143.99	Elemental Sulfur, Other (%)	0472	21.20	0.0000	23.41	1.657	0.1366	5	-1.34		0
143.99	Elemental Sulfur, Other (%)	0389	22.15	0.1000	23.41	1.657	0.1366	5	-0.76		0
143.99	Elemental Sulfur, Other (%)	0481	24.11	0.1400	23.41	1.657	0.1366	5	0.42		0
143.99	Elemental Sulfur, Other (%)	0291	24.56	0.0100	23.41	1.657	0.1366	5	0.69		0
143.99	Elemental Sulfur, Other (%)	0255	25.05	0.4330	23.41	1.657	0.1366	5	0.99		0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0444	24.24	0.0800	24.62	0.3147	0.0737	12	-1.21	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0498	24.30	0.2000	24.62	0.3147	0.0737	12	-1.02	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0510	24.41	0.0206	24.62	0.3147	0.0737	12	-0.67	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0544	24.46	0.0100	24.62	0.3147	0.0737	12	-0.53	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0095	24.50	0.0900	24.62	0.3147	0.0737	12	-0.40	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0177	24.53	0.1087	24.62	0.3147	0.0737	12	-0.29	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0405	24.56	0.0600	24.62	0.3147	0.0737	12	-0.20	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0522	24.61	0.0400	24.62	0.3147	0.0737	12	-0.04	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0485	24.89	0.0853	24.62	0.3147	0.0737	12	0.86	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0027	24.92	0.0100	24.62	0.3147	0.0737	12	0.93	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0550	24.96	0.0000	24.62	0.3147	0.0737	12	1.07	NA	0
145.00	Sulfate Sulfur, HCl soluble, Gravimetric Sulf... (%)	0220	25.49	0.1800	24.62	0.3147	0.0737	12	2.76	NA	0
145.99	Sulfate Sulfur, HCl soluble, Other (%)	0539	24.05	0.1000				1			0
148.00	Total Sulfur, Combustion (24%)	0131	23.40	0.3300	24.42	0.7100	0.3500	8	-1.33	Low	0
148.00	Total Sulfur, Combustion (24%)	0555	23.98	0.0100	24.42	0.7100	0.3500	8	-0.58	OK	0
148.00	Total Sulfur, Combustion (24%)	0029	24.19	0.3900	24.42	0.7100	0.3500	8	-0.31	OK	0

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			Value	Range	Rob Mean	Rob SD	R-bar				
148.00	Total Sulfur, Combustion (24%)	0114	24.28	0.0600	24.42	0.7100	0.3500	8	-0.19	OK	0
148.00	Total Sulfur, Combustion (24%)	0025	24.39	0.3700	24.42	0.7100	0.3500	8	-0.05	OK	0
148.00	Total Sulfur, Combustion (24%)	0049	24.77	0.0400	24.42	0.7100	0.3500	8	0.45	OK	0
148.00	Total Sulfur, Combustion (24%)	0451	25.00	0.4000	24.42	0.7100	0.3500	8	0.74	OK	0
148.00	Total Sulfur, Combustion (24%)	0157	25.40	1.200	24.42	0.7100	0.3500	8	1.26	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0534	23.56	0.4200	24.41	0.4370	0.2410	14	-1.93	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0231	23.95	0.1000	24.41	0.4370	0.2410	14	-1.04	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0371	23.99	0.0900	24.41	0.4370	0.2410	14	-0.96	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0230	24.10	0.6000	24.41	0.4370	0.2410	14	-0.70	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0444	24.16	0.5600	24.41	0.4370	0.2410	14	-0.56	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0073	24.18	0.0300	24.41	0.4370	0.2410	14	-0.53	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0177	24.53	0.1087	24.41	0.4370	0.2410	14	0.29	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0405	24.58	0.0600	24.41	0.4370	0.2410	14	0.40	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0513	24.59	0.0700	24.41	0.4370	0.2410	14	0.41	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0029	24.59	0.0200	24.41	0.4370	0.2410	14	0.42	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0055	24.63	0.4000	24.41	0.4370	0.2410	14	0.51	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0095	24.69	0.2300	24.41	0.4370	0.2410	14	0.64	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0485	24.89	0.0853	24.41	0.4370	0.2410	14	1.12	OK	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (24%)	0324	25.20	0.6000	24.41	0.4370	0.2410	14	1.82	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0515	16.47	1.244	24.01	0.6116	0.3354	15	-12.33	Low	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0542	21.65	1.110	24.01	0.6116	0.3354	15	-3.87	Low	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0292	22.61	0.5600	24.01	0.6116	0.3354	15	-2.29	Low	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0394	23.81	0.1400	24.01	0.6116	0.3354	15	-0.33	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0040	23.95	0.5000	24.01	0.6116	0.3354	15	-0.10	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0486	24.01	0.0600	24.01	0.6116	0.3354	15	-0.01	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0546	24.06	0.2370	24.01	0.6116	0.3354	15	0.08	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0023	24.09	0.0910	24.01	0.6116	0.3354	15	0.13	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0043	24.21	0.2700	24.01	0.6116	0.3354	15	0.31	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0177	24.27	0.0004	24.01	0.6116	0.3354	15	0.41	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0483	24.30	0.4000	24.01	0.6116	0.3354	15	0.47	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0102	24.31	0.0000	24.01	0.6116	0.3354	15	0.49	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0421	24.45	0.1000	24.01	0.6116	0.3354	15	0.71	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0527	24.67	0.0181	24.01	0.6116	0.3354	15	1.07	OK	0
148.07	Total Sulfur, ICP, test portion as in 2017.02... (24%)	0402	24.79	0.3000	24.01	0.6116	0.3354	15	1.27	OK	0
148.99	Total Sulfur, Other (24%)	0377	23.16	0.2600	24.33	0.4802	0.1908	15	-2.43	Low	0
148.99	Total Sulfur, Other (24%)	0493	23.90	0.1000	24.33	0.4802	0.1908	15	-0.89	OK	0
148.99	Total Sulfur, Other (24%)	0433	23.98	0.0030	24.33	0.4802	0.1908	15	-0.72	OK	0
148.99	Total Sulfur, Other (24%)	0556	24.05	0.5000	24.33	0.4802	0.1908	15	-0.58	OK	0
148.99	Total Sulfur, Other (24%)	0419	24.09	0.0800	24.33	0.4802	0.1908	15	-0.49	OK	0
148.99	Total Sulfur, Other (24%)	0354	24.10	0.0000	24.33	0.4802	0.1908	15	-0.48	OK	0
148.99	Total Sulfur, Other (24%)	0520	24.12	0.0300	24.33	0.4802	0.1908	15	-0.44	OK	0
148.99	Total Sulfur, Other (24%)	0096	24.23	0.0200	24.33	0.4802	0.1908	15	-0.20	OK	0
148.99	Total Sulfur, Other (24%)	0422	24.32	0.4700	24.33	0.4802	0.1908	15	-0.03	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
148.99	Total Sulfur, Other (24%)	0501	24.43	0.2600	24.33	0.4802	0.1908	15	0.21	OK	0
148.99	Total Sulfur, Other (24%)	0368	24.52	0.2312	24.33	0.4802	0.1908	15	0.41	OK	0
148.99	Total Sulfur, Other (24%)	0523	24.63	0.1000	24.33	0.4802	0.1908	15	0.63	OK	0
148.99	Total Sulfur, Other (24%)	0476	24.85	0.3675	24.33	0.4802	0.1908	15	1.09	OK	0
148.99	Total Sulfur, Other (24%)	0553	25.10	0.2400	24.33	0.4802	0.1908	15	1.61	OK	0
148.99	Total Sulfur, Other (24%)	0482	25.30	0.2000	24.33	0.4802	0.1908	15	2.02	OK	0
148.99	Total Sulfur, Other (24%)	0307	24.38	2.270	24.33	0.4802	0.1908	15	0.10	OK	1
149.02	Sulfur - HNO3 soluble, Turbidimetric, modific... (%)	0518	23.93	0.2500				1			0
149.04	Sulfur - HNO3 soluble, ICP (%)	0524	22.35	0.0229	23.32	0.8875	0.1376	3	-1.09		0
149.04	Sulfur - HNO3 soluble, ICP (%)	0423	23.51	0.3800	23.32	0.8875	0.1376	3	0.22		0
149.04	Sulfur - HNO3 soluble, ICP (%)	0519	24.10	0.0100	23.32	0.8875	0.1376	3	0.87		0
151.00	Acid Soluble Arsenic , AA, test portion 2006... (ppm)	0550	< 0.08					0			5
151.30	Acid Soluble Arsenic , ICP (ppm)	0255	0.1295	0.0210	328.5	568.3	103.7	3	-0.58		0
151.30	Acid Soluble Arsenic , ICP (ppm)	0524	0.7535	0.1650	328.5	568.3	103.7	3	-0.58		0
151.30	Acid Soluble Arsenic , ICP (ppm)	0555	984.7	310.9	328.5	568.3	103.7	3	1.15		0
151.30	Acid Soluble Arsenic , ICP (ppm)	0405	< 1		328.5	568.3	103.7	3			5
151.33	Acid Soluble Arsenic , ICP, 2017.02 (ppm)	0527	< 0.0001					0			5
151.33	Acid Soluble Arsenic , ICP, 2017.02 (ppm)	0117	< 10					0			5
151.34	Acid Soluble Arsenic , ICP, EPA 3050B/6010C (ppm)	0368	0.1839	0.3677				0			4
151.34	Acid Soluble Arsenic , ICP, EPA 3050B/6010C (ppm)	0547	< 10					0			5
151.99	Acid Soluble Arsenic , Other (ppm)	0519	1.020	0.0200				1			0
151.99	Acid Soluble Arsenic , Other (ppm)	0520	< 0.04					1			5
151.99	Acid Soluble Arsenic , Other (ppm)	0481	< 0.5					1			5
151.99	Acid Soluble Arsenic , Other (ppm)	0220	< 1					1			5
165.30	Acid Soluble Boron , ICP, test portion in 98... (%)	0542	0.0009	0.0000				1			0
165.30	Acid Soluble Boron , ICP, test portion in 98... (%)	0354	< 0.01					1			5
165.99	Acid Soluble Boron , Other (%)	0421	0.0000	0.0000				0			4
165.99	Acid Soluble Boron , Other (%)	0527	< 0.05					0			5
181.00	Acid Soluble Cadmium , AA, test portion 2006... (ppm)	0550	0.1248	0.0000				1			0
181.30	Acid Soluble Cadmium , ICP (ppm)	0394	0.0020	0.0020	5.315	11.82	2.716	5	-0.39		0
181.30	Acid Soluble Cadmium , ICP (ppm)	0524	0.0070	0.0016	5.315	11.82	2.716	5	-0.39		0
181.30	Acid Soluble Cadmium , ICP (ppm)	0255	0.0140	0.0080	5.315	11.82	2.716	5	-0.39		0
181.30	Acid Soluble Cadmium , ICP (ppm)	0419	0.0926	0.0883	5.315	11.82	2.716	5	-0.39		0
181.30	Acid Soluble Cadmium , ICP (ppm)	0555	26.46	13.48	5.315	11.82	2.716	5	1.56		0
181.30	Acid Soluble Cadmium , ICP (ppm)	0405	< 0.01		5.315	11.82	2.716	5			5
181.30	Acid Soluble Cadmium , ICP (ppm)	0389	< 0.05		5.315	11.82	2.716	5			5
181.33	Acid Soluble Cadmium , ICP, 2017.02 (ppm)	0515	0.0000	0.0000				0			4
181.33	Acid Soluble Cadmium , ICP, 2017.02 (ppm)	0527	< 0.0001					0			5
181.33	Acid Soluble Cadmium , ICP, 2017.02 (ppm)	0117	< 5					0			5
181.34	Acid Soluble Cadmium , ICP, EPA 3050B/6010C (ppm)	0515	0.0000	0.0000				0			4
181.34	Acid Soluble Cadmium , ICP, EPA 3050B/6010C (ppm)	0368	0.0085	0.0170				0			4
181.34	Acid Soluble Cadmium , ICP, EPA 3050B/6010C (ppm)	0547	< 0.5					0			5
181.99	Acid Soluble Cadmium , Other (ppm)	0220	0.4000	0.2000				2			0

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			Value	Range	Rob Mean	Rob SD	R-bar				
181.99	Acid Soluble Cadmium , Other (ppm)	0519	0.4050	0.0100				2			0
181.99	Acid Soluble Cadmium , Other (ppm)	0520	< 0.04					2			5
181.99	Acid Soluble Cadmium , Other (ppm)	0481	< 0.5					2			5
191.00	Acid Soluble Chromium , AA, test portion 200... (ppm)	0550	0.5493	0.0000				1			0
191.30	Acid Soluble Chromium , ICP (ppm)	0523	0.3900	0.0460	0.7173	0.3996	0.0709	6	-0.73	NA	0
191.30	Acid Soluble Chromium , ICP (ppm)	0524	0.4200	0.0400	0.7173	0.3996	0.0709	6	-0.66	NA	0
191.30	Acid Soluble Chromium , ICP (ppm)	0389	0.5505	0.0290	0.7173	0.3996	0.0709	6	-0.37	NA	0
191.30	Acid Soluble Chromium , ICP (ppm)	0394	0.7140	0.0500	0.7173	0.3996	0.0709	6	-0.01	NA	0
191.30	Acid Soluble Chromium , ICP (ppm)	0419	0.9128	0.1805	0.7173	0.3996	0.0709	6	0.44	NA	0
191.30	Acid Soluble Chromium , ICP (ppm)	0444	1.540	0.0800	0.7173	0.3996	0.0709	6	1.83	NA	0
191.30	Acid Soluble Chromium , ICP (ppm)	0555	0.0000	0.0000	0.7173	0.3996	0.0709	6			4
191.30	Acid Soluble Chromium , ICP (ppm)	0405	< 1		0.7173	0.3996	0.0709	6			5
191.33	Acid Soluble Chromium , ICP, 2017.02 (ppm)	0527	0.6339	0.0568				2			0
191.33	Acid Soluble Chromium , ICP, 2017.02 (ppm)	0515	3.603	3.017				2			0
191.34	Acid Soluble Chromium , ICP, EPA 3050B/6010C... (ppm)	0368	0.6078	0.0271				2			0
191.34	Acid Soluble Chromium , ICP, EPA 3050B/6010C... (ppm)	0515	1.844	2.396				2			0
191.34	Acid Soluble Chromium , ICP, EPA 3050B/6010C... (ppm)	0547	< 1					2			5
191.99	Acid Soluble Chromium , Other (ppm)	0520	0.2300	0.1000	0.7250	0.5712	0.2033	3	-0.87		0
191.99	Acid Soluble Chromium , Other (ppm)	0519	0.5950	0.0100	0.7250	0.5712	0.2033	3	-0.23		0
191.99	Acid Soluble Chromium , Other (ppm)	0220	1.350	0.5000	0.7250	0.5712	0.2033	3	1.09		0
191.99	Acid Soluble Chromium , Other (ppm)	0481	< 20		0.7250	0.5712	0.2033	3			5
202.30	Acid Soluble Cobalt , ICP (ppm)	0523	0.0743	0.0139	0.0848	0.0104	0.0111	3	-1.02		0
202.30	Acid Soluble Cobalt , ICP (ppm)	0524	0.0852	0.0134	0.0848	0.0104	0.0111	3	0.04		0
202.30	Acid Soluble Cobalt , ICP (ppm)	0389	0.0950	0.0060	0.0848	0.0104	0.0111	3	0.98		0
202.30	Acid Soluble Cobalt , ICP (ppm)	0555	0.0000	0.0000	0.0848	0.0104	0.0111	3			4
202.30	Acid Soluble Cobalt , ICP (ppm)	0405	< 0.01		0.0848	0.0104	0.0111	3			5
202.33	Acid Soluble Cobalt , ICP, 2017.02 (ppm)	0550	0.1500	0.0000				2			0
202.33	Acid Soluble Cobalt , ICP, 2017.02 (ppm)	0546	0.1945	0.1470				2			0
202.33	Acid Soluble Cobalt , ICP, 2017.02 (ppm)	0515	0.0000	0.0000				2			4
202.33	Acid Soluble Cobalt , ICP, 2017.02 (ppm)	0527	< 0.0001					2			5
202.34	Acid Soluble Cobalt , ICP, EPA 3050B/6010C (ppm)	0515	0.0000	0.0000				0			4
202.34	Acid Soluble Cobalt , ICP, EPA 3050B/6010C (ppm)	0368	0.0957	0.1914				0			4
202.34	Acid Soluble Cobalt , ICP, EPA 3050B/6010C (ppm)	0547	< 1					0			5
202.99	Acid Soluble Cobalt , Other (ppm)	0255	0.0855	0.0030				2			0
202.99	Acid Soluble Cobalt , Other (ppm)	0519	0.2505	0.0010				2			0
202.99	Acid Soluble Cobalt , Other (ppm)	0520	< 0.04					2			5
202.99	Acid Soluble Cobalt , Other (ppm)	0220	< 0.1					2			5
202.99	Acid Soluble Cobalt , Other (ppm)	0481	< 20					2			5
221.00	Acid Soluble Copper , AA, inorganic 965.09 (%)	0550	0.0016	0.0000				1			0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0255	0.0020	0.0020				2			0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0444	495.0	10.00				2			0
221.30	Acid Soluble Copper , ICP, test portion inor... (%)	0354	< 0.01					2			5
221.32	Acid Soluble Copper , ICP, test portion 2006... (%)	0394	0.0001	0.0000				2			0

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			Value	Range	Rob Mean	Rob SD	R-bar				
221.32	Acid Soluble Copper , ICP, test portion 2006... (%)	0220	0.0004	0.0001				2			0
221.33	Acid Soluble Copper , ICP, 2017.02 (%)	0515	0.0008	0.0003				2			0
221.33	Acid Soluble Copper , ICP, 2017.02 (%)	0555	136.7	50.33				2			0
221.33	Acid Soluble Copper , ICP, 2017.02 (%)	0421	0.0000	0.0000				2			4
221.33	Acid Soluble Copper , ICP, 2017.02 (%)	0527	< 0.0001					2			5
221.99	Acid Soluble Copper , Other (%)	0389	0.0003	0.0001	0.0004	0.0002	0.0001	3	-0.67		0
221.99	Acid Soluble Copper , Other (%)	0515	0.0004	0.0001	0.0004	0.0002	0.0001	3	-0.22		0
221.99	Acid Soluble Copper , Other (%)	0419	0.0006	0.0000	0.0004	0.0002	0.0001	3	0.90		0
221.99	Acid Soluble Copper , Other (%)	0368	0.0000	0.0000	0.0004	0.0002	0.0001	3			4
221.99	Acid Soluble Copper , Other (%)	0519	< 0.0001		0.0004	0.0002	0.0001	3			5
221.99	Acid Soluble Copper , Other (%)	0547	< 0.0001		0.0004	0.0002	0.0001	3			5
221.99	Acid Soluble Copper , Other (%)	0481	< 0.001		0.0004	0.0002	0.0001	3			5
241.30	Acid Soluble Iron , ICP, test portion inorgan... (%)	0354	< 0.01					0			5
241.33	Acid Soluble Iron , ICP, 2017.02 (%)	0527	0.0018	0.0009				2			0
241.33	Acid Soluble Iron , ICP, 2017.02 (%)	0515	0.0735	0.0460				2			0
241.33	Acid Soluble Iron , ICP, 2017.02 (%)	0421	0.0000	0.0000				2			4
241.99	Acid Soluble Iron , Other (%)	0524	0.0018	0.0000	0.1245	0.2123	0.2405	3	-0.58		0
241.99	Acid Soluble Iron , Other (%)	0389	0.0021	0.0000	0.1245	0.2123	0.2405	3	-0.58		0
241.99	Acid Soluble Iron , Other (%)	0515	0.3697	0.7216	0.1245	0.2123	0.2405	3	1.15		0
241.99	Acid Soluble Iron , Other (%)	0027	< 0.002		0.1245	0.2123	0.2405	3			5
251.00	Acid Soluble Lead , AA, test portion 2006.03... (ppm)	0550	0.7741	0.0000				1			0
251.30	Acid Soluble Lead , ICP (ppm)	0255	0.0205	0.0090	0.0665	0.0562	0.0078	4	-0.70		0
251.30	Acid Soluble Lead , ICP (ppm)	0524	0.0243	0.0040	0.0665	0.0562	0.0078	4	-0.64		0
251.30	Acid Soluble Lead , ICP (ppm)	0523	0.0818	0.0112	0.0665	0.0562	0.0078	4	0.23		0
251.30	Acid Soluble Lead , ICP (ppm)	0394	0.1395	0.0070	0.0665	0.0562	0.0078	4	1.10		0
251.30	Acid Soluble Lead , ICP (ppm)	0555	0.0000	0.0000	0.0665	0.0562	0.0078	4			4
251.30	Acid Soluble Lead , ICP (ppm)	0389	< 0.05		0.0665	0.0562	0.0078	4			5
251.30	Acid Soluble Lead , ICP (ppm)	0405	< 0.2		0.0665	0.0562	0.0078	4			5
251.33	Acid Soluble Lead , ICP, 2017.02 (ppm)	0515	0.0000	0.0000				0			4
251.33	Acid Soluble Lead , ICP, 2017.02 (ppm)	0527	< 0.0001					0			5
251.33	Acid Soluble Lead , ICP, 2017.02 (ppm)	0117	< 5					0			5
251.34	Acid Soluble Lead , ICP, EPA 3050B/6010C (ppm)	0368	0.0000	0.0000				0			4
251.34	Acid Soluble Lead , ICP, EPA 3050B/6010C (ppm)	0515	0.0000	0.0000				0			4
251.34	Acid Soluble Lead , ICP, EPA 3050B/6010C (ppm)	0547	< 5					0			5
251.99	Acid Soluble Lead , Other (ppm)	0481	1.280	0.1400				2			0
251.99	Acid Soluble Lead , Other (ppm)	0519	2.088	0.0050				2			0
251.99	Acid Soluble Lead , Other (ppm)	0520	< 0.06					2			5
251.99	Acid Soluble Lead , Other (ppm)	0220	< 1					2			5
261.30	Acid Soluble Manganese , ICP, test portion 9... (%)	0354	< 0.01					0			5
261.34	Acid Soluble Manganese , ICP, test portion 2... (%)	0542	0.0004	0.0000				1			0
261.35	Acid Soluble Manganese , ICP, 2017.02 (%)	0421	0.0000	0.0000				0			4
261.35	Acid Soluble Manganese , ICP, 2017.02 (%)	0515	0.0000	0.0000				0			4
261.35	Acid Soluble Manganese , ICP, 2017.02 (%)	0527	< 0.0001					0			5

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			Value	Range	Rob Mean	Rob SD	R-bar				
261.99	Acid Soluble Manganese , Other (%)	0515	0.0000	0.0000				0			4
261.99	Acid Soluble Manganese , Other (%)	0027	< 0.002					0			5
281.00	Acid Soluble Mercury , AA (ppm)	0550	< 0.001					0			5
281.00	Acid Soluble Mercury , AA (ppm)	0534	< 0.05					0			5
281.30	Acid Soluble Mercury , ICP (ppm)	0515	0.0000	0.0000				0			4
281.30	Acid Soluble Mercury , ICP (ppm)	0527	0.0000	0.0000				0			4
281.30	Acid Soluble Mercury , ICP (ppm)	0405	< 0.01					0			5
281.99	Acid Soluble Mercury , Other (ppm)	0519	0.0200	0.0000				1			0
281.99	Acid Soluble Mercury , Other (ppm)	0520	< 0.01					1			5
281.99	Acid Soluble Mercury , Other (ppm)	0009	< 0.044					1			5
281.99	Acid Soluble Mercury , Other (ppm)	0481	< 0.5					1			5
289.00	Acid Soluble Molybdenum , AA, test portion 2... (ppm)	0550	26.70	0.0000				1			0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0524	0.0385	0.0015	8.792	11.38	0.7949	5	-0.67		0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0419	1.173	0.0240	8.792	11.38	0.7949	5	-0.58		0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0255	2.239	0.9480	8.792	11.38	0.7949	5	-0.50		0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0519	14.01	0.0010	8.792	11.38	0.7949	5	0.40		0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0096	26.50	3.000	8.792	11.38	0.7949	5	1.36		0
289.30	Acid Soluble Molybdenum , ICP (ppm)	0555	8.690	17.38	8.792	11.38	0.7949	5			4
289.30	Acid Soluble Molybdenum , ICP (ppm)	0405	< 0.05		8.792	11.38	0.7949	5			5
289.33	Acid Soluble Molybdenum , ICP, 2017.02 (ppm)	0546	0.1680	0.0540				1			0
289.33	Acid Soluble Molybdenum , ICP, 2017.02 (ppm)	0527	< 0.0001					1			5
289.34	Acid Soluble Molybdenum , ICP, EPA 3050B/601... (ppm)	0368	0.1306	0.2612				0			4
289.34	Acid Soluble Molybdenum , ICP, EPA 3050B/601... (ppm)	0547	< 1					0			5
289.99	Acid Soluble Molybdenum , Other (ppm)	0220	1.000	0.4000				1			0
289.99	Acid Soluble Molybdenum , Other (ppm)	0481	< 125					1			5
291.00	Acid Soluble Nickel , AA, test portion 2006.... (ppm)	0550	< 0.6					0			5
291.30	Acid Soluble Nickel , ICP (ppm)	0524	0.2534	0.0258	0.8882	0.8491	0.0402	5	-0.65		0
291.30	Acid Soluble Nickel , ICP (ppm)	0389	0.3175	0.0010	0.8882	0.8491	0.0402	5	-0.59		0
291.30	Acid Soluble Nickel , ICP (ppm)	0394	0.4020	0.0320	0.8882	0.8491	0.0402	5	-0.50		0
291.30	Acid Soluble Nickel , ICP (ppm)	0444	1.240	0.0400	0.8882	0.8491	0.0402	5	0.36		0
291.30	Acid Soluble Nickel , ICP (ppm)	0419	2.228	0.1020	0.8882	0.8491	0.0402	5	1.38		0
291.30	Acid Soluble Nickel , ICP (ppm)	0555	11.93	23.85	0.8882	0.8491	0.0402	5			4
291.30	Acid Soluble Nickel , ICP (ppm)	0405	< 0.5		0.8882	0.8491	0.0402	5			5
291.33	Acid Soluble Nickel , ICP, 2017.02 (ppm)	0515	1.452	0.6484				1			0
291.33	Acid Soluble Nickel , ICP, 2017.02 (ppm)	0527	< 0.0001					1			5
291.33	Acid Soluble Nickel , ICP, 2017.02 (ppm)	0117	< 5					1			5
291.34	Acid Soluble Nickel , ICP, EPA 3050B/6010C (ppm)	0368	0.3905	0.0280				2			0
291.34	Acid Soluble Nickel , ICP, EPA 3050B/6010C (ppm)	0515	2.113	3.245				2			0
291.34	Acid Soluble Nickel , ICP, EPA 3050B/6010C (ppm)	0547	< 1					2			5
291.99	Acid Soluble Nickel , Other (ppm)	0255	1.204	0.3250	1.262	0.0934	0.2840	4	-0.63		0
291.99	Acid Soluble Nickel , Other (ppm)	0520	1.205	0.0100	1.262	0.0934	0.2840	4	-0.61		0
291.99	Acid Soluble Nickel , Other (ppm)	0519	1.241	0.0010	1.262	0.0934	0.2840	4	-0.23		0
291.99	Acid Soluble Nickel , Other (ppm)	0220	1.400	0.8000	1.262	0.0934	0.2840	4	1.47		0

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			Value	Range	Rob Mean	Rob SD	R-bar				
291.99	Acid Soluble Nickel , Other (ppm)	0481	< 10		1.262	0.0934	0.2840	4			5
301.00	Acid Soluble Selenium , AA, test portion 200... (ppm)	0550	< 0.08					0			5
301.30	Acid Soluble Selenium , ICP (ppm)	0524	0.9050	0.1300				1			0
301.30	Acid Soluble Selenium , ICP (ppm)	0555	0.0000	0.0000				1			4
301.30	Acid Soluble Selenium , ICP (ppm)	0405	< 1					1			5
301.33	Acid Soluble Selenium , ICP, 2017.02 (ppm)	0515	0.4515	0.8432				1			0
301.33	Acid Soluble Selenium , ICP, 2017.02 (ppm)	0527	< 0.001					1			5
301.34	Acid Soluble Selenium , ICP, EPA 3050B/6010C... (ppm)	0368	0.4460	0.8919				0			4
301.34	Acid Soluble Selenium , ICP, EPA 3050B/6010C... (ppm)	0515	0.9960	1.992				0			4
301.34	Acid Soluble Selenium , ICP, EPA 3050B/6010C... (ppm)	0547	< 10					0			5
301.99	Acid Soluble Selenium , Other (ppm)	0519	0.2005	0.0010				2			0
301.99	Acid Soluble Selenium , Other (ppm)	0255	0.5685	0.1130				2			0
301.99	Acid Soluble Selenium , Other (ppm)	0520	< 0.04					2			5
301.99	Acid Soluble Selenium , Other (ppm)	0481	< 0.15					2			5
301.99	Acid Soluble Selenium , Other (ppm)	0220	< 0.3					2			5
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	< 0.001					0			5
311.99	Sodium, Other (%)	0354	0.0200	0.0000				1			0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (%)	0553	0.0006	0.0000				2			0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (%)	0550	0.0079	0.0000				2			0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (%)	0444	1,325	30.00				1			0
321.30	Acid Soluble Zinc , ICP, test portion inorga... (%)	0354	< 0.01					1			5
321.32	Acid Soluble Zinc , ICP, test portion 2006.0... (%)	0394	0.0004	0.0001				2			0
321.32	Acid Soluble Zinc , ICP, test portion 2006.0... (%)	0542	0.0004	0.0000				2			0
321.33	Acid Soluble Zinc , ICP, 2017.02 (%)	0421	0.0000	0.0000				0			4
321.33	Acid Soluble Zinc , ICP, 2017.02 (%)	0515	0.0000	0.0000				0			4
321.33	Acid Soluble Zinc , ICP, 2017.02 (%)	0527	< 0.001					0			5
321.99	Acid Soluble Zinc , Other (%)	0389	0.0001	0.0000	0.0005	0.0005	0.0002	4	-0.71		0
321.99	Acid Soluble Zinc , Other (%)	0524	0.0001	0.0000	0.0005	0.0005	0.0002	4	-0.71		0
321.99	Acid Soluble Zinc , Other (%)	0419	0.0008	0.0003	0.0005	0.0005	0.0002	4	0.44		0
321.99	Acid Soluble Zinc , Other (%)	0220	0.0011	0.0003	0.0005	0.0005	0.0002	4	0.98		0
321.99	Acid Soluble Zinc , Other (%)	0368	0.0000	0.0000	0.0005	0.0005	0.0002	4			4
321.99	Acid Soluble Zinc , Other (%)	0515	0.0000	0.0000	0.0005	0.0005	0.0002	4			4
321.99	Acid Soluble Zinc , Other (%)	0519	< 0.0001		0.0005	0.0005	0.0002	4			5
321.99	Acid Soluble Zinc , Other (%)	0547	< 0.0002		0.0005	0.0005	0.0002	4			5
321.99	Acid Soluble Zinc , Other (%)	0481	< 0.001		0.0005	0.0005	0.0002	4			5
321.99	Acid Soluble Zinc , Other (%)	0027	< 0.002		0.0005	0.0005	0.0002	4			5
325.30	Water Soluble Zinc , ICP (%)	0555	40.00	80.00				0			4

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are grey and included for information only. IA Status describes where your result is relative to the Assigned Value ± IA. Red indicates Higher or Lower, Green indicates within the IA range. Method codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.