



Method PT For All Labs

Sample # 231215

K2SO4/polihalide

Magruder Fertilizer Proficiency Testing Program

Regular PT Scheme Sample Doubles with K Scheme

Statistical Summary

Methods: 101

Labs Reporting: 68

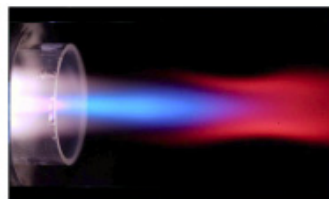
Issue Date : 01/31/2024

Method Code	Analyte & Method Sample # 231215	# 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)	Horwitz %RSD
001.99	Ammoniacal N, Other (%)	1		0.0664									
005.99	Urea N, Other (%)	1		0.1261									
010.60	Total N, Combustion (%)	3	2	0.0392	0.0340	0.0588	0.4900	0.0032	0.0028	5.42%	0.02	0.0085	6.13%
010.99	Total N, Other (%)	1		0.0372									
020.50	Total P2O5, ICP (%)	5	3	9.943	22.15	16.54		28.60	20.64	172.93%		0.3606	2.46%
020.99	Total P2O5, Other (%)	1		0.0090									
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext.	2	2	25.18	35.60								
048.99	Water Soluble P2O5, Other (%)	1		0.0082									
050.00	Soluble K2O, STPB Oxalate (50%)	10	10	50.88	0.5170	50.93	1.6693	0.4679	0.1849	0.92%	0.65	0.3252	1.40%
050.30	Soluble K2O, AA (Oxalate) (50%)	3	3	52.52	2.426	52.52	1.6852	2.426	1.751	4.62%	3.35	0.1440	1.38%
050.32	Soluble K2O, AA (Citrate-EDTA) (50%)	2	2	50.01	4.957								
050.50	Soluble K2O, ICP (Oxalate) (50%)	5	5	51.95	1.346	51.95	1.6795	1.346	0.7523	2.59%	1.87	0.5353	1.39%
050.51	Soluble K2O, ICP (Citrate) (50%)	4	4	51.83	1.710	51.83	1.6783	1.710	1.069	3.30%	2.37	0.4439	1.39%
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	11	11	50.43	1.131	50.46	1.6646	1.229	0.4632	2.44%	1.72	0.4540	1.41%
050.60	Soluble K2O, Flame Photometric (Oxalate) (50%)	1		46.66									
050.61	Soluble K2O, Flame Photometric (Citrate) (50%)	2	2	51.83	0.9546								
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (50%)	2	2	50.80	0.4207								
050.99	Soluble K2O, Other (50%)	30	29	50.94	1.797	50.98	1.6698	1.294	0.3003	2.54%	1.81	0.4370	1.40%
060.99	Water (Free), Other (%)	1		0.0445									
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	1		0.2150									
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	4	3	0.1001	0.0391	0.1002	0.2050	0.0478	0.0345	47.76%	0.54	0.0038	5.65%
101.99	Acid Soluble Ca, Other (%)	1		0.1353									
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	1		0.3250									
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (%)	1		0.3065									
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	4	4	0.3304	0.0261	0.3304	0.2165	0.0261	0.0163	7.90%	0.28	0.0046	4.73%
121.99	Acid Soluble Mg, Other (%)	2	2	0.3061	0.0046								
131.99	Water Soluble Mg, Other (%)	1		0.3092									
143.99	Elemental S, Other (%)	4	4	17.76	0.3138	17.76		0.3138	0.1962	1.77%		0.1881	2.37%
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	6	5	17.42	1.031	17.82		0.3252	0.1818	1.82%		0.0580	2.37%

Method Code	Analyte & Method Sample # 231215	# 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
145.99	Sulfate S, HCl soluble, Other (%)	2	2	17.70	0.0990								
148.00	Total S, Combustion (17.5%)	8	8	17.45	0.5684	17.44	1.0000	0.5829	0.2576	3.34%	1.36	0.3319	2.39%
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	8	7	17.86	0.4712	17.76	1.0000	0.3473	0.1641	1.96%	0.81	0.1628	2.37%
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	13	12	17.78	0.6968	17.83	1.0000	0.6201	0.2238	3.48%	1.44	0.1392	2.37%
148.99	Total S, Other (17.5%)	13	13	18.20	0.8375	18.19	1.0000	0.9236	0.3202	5.08%	2.15	0.1200	2.34%
149.04	S - HNO3 soluble, ICP (%)	2	2	16.79	0.4632								
151.30	Acid Soluble As, ICP (ppm)	3	1	2.180	3.486	16.79		0.4632	0.5790	2.76%		0.0660	10.46%
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	2	1	1.675	1.874								
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	4	1	0.7650	0.6014	16.79		0.4632	0.5790	2.76%		0.0660	10.46%
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	1		0.3000									
151.99	Acid Soluble As, Other (ppm)	2	2	0.3726	0.0319								
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	1		0.0100									
165.99	Acid Soluble B, Other (%)	5	3	0.0059	0.0050	0.0028	0.0034	0.0039	0.0028	137.25%	2.65	0.0008	9.67%
171.99	Water Soluble B, Other (%)	1		0.0110									
181.30	Acid Soluble Cd, ICP (ppm)	3	2	1.583	1.466	1.449		2.047	1.809	141.27%		1.754	15.13%
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	2	0	0.5500	0.6364								
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	4	1	0.3035	0.4699	1.449		2.047	2.559	141.27%		0.0002	15.13%
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	1		0.1000									
181.99	Acid Soluble Cd, Other (ppm)	2	0	0.0750	0.0354								
190.00	Water Soluble Cl, Titrimetric (0.8%)	12	11	0.4080	0.2959	0.3996	0.0450	0.3502	0.1320	87.63%	18.15	0.0395	4.59%
190.99	Water Soluble Cl, Other (0.8%)	5	5	0.2913	0.3169	0.2913	0.0341	0.3169	0.1772	108.80%	21.64	0.0383	4.82%
191.30	Acid Soluble Cr, ICP (ppm)	2	2	7.300	5.431								
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	2	2	8.975	2.864								
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	4	3	8.264	3.863	10.19		0.4823	0.3481	4.73%		0.3110	11.28%
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	1		7.700									
191.99	Acid Soluble Cr, Other (ppm)	2	2	6.380	1.371								
202.30	Acid Soluble Co, ICP (ppm)	2	2	0.4785	0.0347								
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	3	2	0.7400	0.3079	0.6100	1.1830	0.2970	0.2625	48.69%	0.58	0.1200	17.23%
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	4	1	0.8900	1.111	0.6100	1.1830	0.2970	0.3712	48.69%	0.58	0.0600	17.23%
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	1		0.4000									
202.99	Acid Soluble Co, Other (ppm)	3	2	5.358	8.373	7.713	3.3138	10.34	9.141	134.09%	7.27	9.470	11.76%
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	2	1	0.0150	0.0212								
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	1		0.0002									
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	5	0	0.0001	0.0001	7.713	0.7763	10.34		134.09%	31.04	4.735	2.94%
221.99	Acid Soluble Cu, Other (%)	3	2	0.0003	0.0003	0.0003	0.0050	0.0003	0.0003	97.91%	0.15	0.0009	13.40%
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	1		0.0800									
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	4	4	0.0539	0.0029	0.0539	0.0104	0.0029	0.0018	5.33%	0.64	0.0007	6.21%
241.99	Acid Soluble Fe, Other (%)	2	2	0.0404	0.0010								
251.30	Acid Soluble Pb, ICP (ppm)	3	1	1.823	2.761	0.0404		0.0010	0.0013	2.54%		0.0008	22.00%
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	2	1	2.350	2.333								

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251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	4	1	1.119	1.309	0.0404		0.0010	0.0013	2.54%		0.0008	22.00%
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	1		1.000									
251.99	Acid Soluble Pb, Other (ppm)	2	2	0.6907	0.1546								
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	1		0.0100									
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	3	2	0.0007	0.0005	0.0010	0.0051	0.0000	0.0000	0.00%	0.00	0.0000	11.31%
261.99	Acid Soluble Mn, Other (%)	2	2	0.0008	0.0000								
281.30	Acid Soluble Hg, ICP (ppm)	3	0	1.084	1.010	0.0008		0.0000		4.29%		0.0001	22.00%
281.99	Acid Soluble Hg, Other (ppm)	3	1	0.0064	0.0054	0.0008		0.0000	0.0000	4.29%		0.0001	22.00%
289.30	Acid Soluble Mo, ICP (ppm)	2	1	0.0525	0.0742								
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	2	1	0.6500	0.4950								
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	4	1	0.6975	1.209	0.0008	1.0002	0.0000	0.0000	4.29%	0.00	0.0001	22.00%
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	1		0.2000									
289.99	Acid Soluble Mo, Other (ppm)	2	1	1.250	1.202								
291.30	Acid Soluble Ni, ICP (ppm)	2	1	1.479	1.302								
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	2	1	0.8500	0.2121								
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	3	1	1.147	1.263	0.0008		0.0000	0.0000	4.29%		0.0001	22.00%
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	1		2.100									
291.99	Acid Soluble Ni, Other (ppm)	3	2	8.292	12.27	11.60		15.35	13.57	132.28%		7.235	11.06%
301.30	Acid Soluble Se, ICP (ppm)	2	1	0.8307	1.159								
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	2	0	5.150	6.859								
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	2	0	0.5050	0.7000								
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	1		1.300									
301.99	Acid Soluble Se, Other (ppm)	3	0	0.3267	0.3408	11.60		15.35		132.28%		0.1000	11.06%
311.33	Sodium, ICP, test portion as in 2017.02 (%)	3	3	0.0995	0.0278	0.0995	0.0150	0.0278	0.0200	27.92%	4.33	0.0020	5.66%
311.99	Sodium, Other (%)	3	3	0.1325	0.0246	0.1325	0.0183	0.0246	0.0178	18.58%	3.14	0.0116	5.42%
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	2	2	0.0108	0.0011								
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	2	1	0.0004	0.0001								
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	4	0	0.0005	0.0004	0.0108	0.0061	0.0011		9.87%	0.41	0.0005	7.91%
321.99	Acid Soluble Zn, Other (%)	3	3	0.0003	0.0002	0.0003	0.0050	0.0002	0.0001	60.62%	0.09	0.0002	13.35%
325.30	Water Soluble Zn, ICP (%)	1		0.0005									
325.99	Water Soluble Zn, Other (%)	1		0.0006									
431.99	Soluble Si in nonliquids, Other (%)	1		0.0209									

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. The Horwitz %RSD is calculated using the Thompson Modification, Analyst,2000,125,385-386.



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Sample # 231215

Regular PT Scheme Sample Doubles with K Scheme

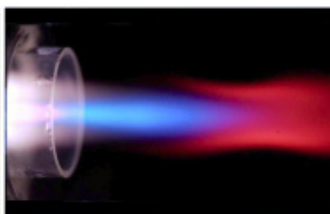
K₂SO₄/polihalide

Method Precision Report

Issue Date : 01/31/2024

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
050.00	Soluble K ₂ O, STPB Oxalate (50%)	10	9	51.01	0.3508	0.3026	0.2512	0.3932	0.59%	0.49%	0.77%	1.566
050.50	Soluble K ₂ O, ICP (Oxalate) (50%)	5	5	51.95	1.346	1.305	0.4644	1.385	2.51%	0.89%	2.67%	2.983
050.52	Soluble K ₂ O, ICP (Citrate-EDTA) (50%)	11	10	50.29	1.078	1.049	0.3504	1.106	2.09%	0.70%	2.20%	3.156
050.99	Soluble K ₂ O, Other (50%)	30	26	50.78	1.373	1.353	0.3319	1.393	2.66%	0.65%	2.74%	4.197
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	6	5	17.82	0.3252	0.3235	0.0476	0.3270	1.82%	0.27%	1.83%	6.863
148.00	Total S, Combustion (17.5%)	8	7	17.46	0.6129	0.5963	0.2005	0.6291	3.41%	1.15%	3.60%	3.138
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	8	7	17.73	0.3508	0.3340	0.1519	0.3669	1.88%	0.86%	2.07%	2.415
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	13	11	17.92	0.5040	0.4953	0.1315	0.5125	2.76%	0.73%	2.86%	3.896
148.99	Total S, Other (17.5%)	13	12	18.23	0.8677	0.8653	0.0911	0.8701	4.75%	0.50%	4.77%	9.556
190.00	Water Soluble Cl, Titrimetric (0.8%)	12	11	0.3996	0.3088	0.3077	0.0372	0.3099	76.99%	9.32%	77.55%	8.323

Notes: Precision data calculated when 5 or more Tests included.



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 101

Sample # 231215

Regular PT Scheme Sample Doubles with K Scheme

Labs Reporting: 68

K₂SO₄/polihalide

Lab Values

Issue Date : 01/31/2024

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
001.99	Ammoniacal N, Other (%)	0524	0.0664	0.0167				1			0
005.99	Urea N, Other (%)	0524	0.1261	0.0062				1			0
010.60	Total N, Combustion (%)	0354	0.0565	0.0050				2			0
010.60	Total N, Combustion (%)	0588	0.0610	0.0120				2			0
010.60	Total N, Combustion (%)	0422	0.0000	0.0000				2			4
010.99	Total N, Other (%)	0524	0.0372	0.0002				1			0
020.50	Total P ₂ O ₅ , ICP (%)	0524	0.0084	0.0008	16.54	28.60	0.3606	3	-0.58		0
020.50	Total P ₂ O ₅ , ICP (%)	0588	0.0435	0.0090	16.54	28.60	0.3606	3	-0.58		0
020.50	Total P ₂ O ₅ , ICP (%)	0543	49.57	1.072	16.54	28.60	0.3606	3	1.15		0
020.50	Total P ₂ O ₅ , ICP (%)	0422	0.0000	0.0000	16.54	28.60	0.3606	3			4
020.50	Total P ₂ O ₅ , ICP (%)	0527	< 0.1		16.54	28.60	0.3606	3			5
020.99	Total P ₂ O ₅ , Other (%)	0572	0.0090	0.0010				1			0
041.21	Direct Available P ₂ O ₅ , Spectrophotometric, Citrate-EDTA Ext. (	0354	0.0110	0.0020				2			0
041.21	Direct Available P ₂ O ₅ , Spectrophotometric, Citrate-EDTA Ext. (	0095	50.35	2.120				2			0
048.99	Water Soluble P ₂ O ₅ , Other (%)	0572	0.0082	0.0018				1			0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0485	49.75	1.100	50.93	0.4679	0.3252	10	-2.34	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0619	50.50	0.6000	50.93	0.4679	0.3252	10	-0.85	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0220	50.73	0.0200	50.93	0.4679	0.3252	10	-0.39	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0405	50.73	0.0400	50.93	0.4679	0.3252	10	-0.39	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0231	50.87	0.1100	50.93	0.4679	0.3252	10	-0.13	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0494	50.99	0.1500	50.93	0.4679	0.3252	10	0.11	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0055	51.10	0.3000	50.93	0.4679	0.3252	10	0.34	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0049	51.12	0.0900	50.93	0.4679	0.3252	10	0.37	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0102	51.44	0.6000	50.93	0.4679	0.3252	10	1.02	OK	0
050.00	Soluble K ₂ O, STPB Oxalate (50%)	0114	51.60	0.5300	50.93	0.4679	0.3252	10	1.32	OK	0
050.30	Soluble K ₂ O, AA (Oxalate) (50%)	0558	50.21	0.1520	52.52	2.426	0.1440	3	-0.95		0
050.30	Soluble K ₂ O, AA (Oxalate) (50%)	0073	52.31	0.0900	52.52	2.426	0.1440	3	-0.09		0
050.30	Soluble K ₂ O, AA (Oxalate) (50%)	0580	55.05	0.1900	52.52	2.426	0.1440	3	1.04		0
050.32	Soluble K ₂ O, AA (Citrate-EDTA) (50%)	0472	46.50	0.0000				2			0
050.32	Soluble K ₂ O, AA (Citrate-EDTA) (50%)	0185	53.51	0.5800				2			0
050.50	Soluble K ₂ O, ICP (Oxalate) (50%)	0106	50.48	1.260	51.95	1.346	0.5353	5	-1.09		0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
050.50	Soluble K2O, ICP (Oxalate) (50%)	0055	50.86	0.3450	51.95	1.346	0.5353	5	-0.81		0
050.50	Soluble K2O, ICP (Oxalate) (50%)	0324	51.75	0.5000	51.95	1.346	0.5353	5	-0.15		0
050.50	Soluble K2O, ICP (Oxalate) (50%)	0292	53.18	0.1500	51.95	1.346	0.5353	5	0.91		0
050.50	Soluble K2O, ICP (Oxalate) (50%)	0422	53.48	0.4217	51.95	1.346	0.5353	5	1.14		0
050.51	Soluble K2O, ICP (Citrate) (50%)	0368	49.88	0.1718	51.83	1.710	0.4439	4	-1.14		0
050.51	Soluble K2O, ICP (Citrate) (50%)	0007	51.15	1.100	51.83	1.710	0.4439	4	-0.40		0
050.51	Soluble K2O, ICP (Citrate) (50%)	0291	52.43	0.0600	51.83	1.710	0.4439	4	0.35		0
050.51	Soluble K2O, ICP (Citrate) (50%)	0521	53.87	0.0000	51.83	1.710	0.4439	4	1.19		0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0485	48.35	0.5000	50.46	1.229	0.4540	11	-1.60	Low	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0354	49.45	0.3000	50.46	1.229	0.4540	11	-0.77	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0023	49.75	0.0010	50.46	1.229	0.4540	11	-0.54	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0025	49.85	0.1000	50.46	1.229	0.4540	11	-0.46	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0423	49.90	0.1630	50.46	1.229	0.4540	11	-0.42	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0043	50.17	0.4700	50.46	1.229	0.4540	11	-0.22	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0136	50.65	1.030	50.46	1.229	0.4540	11	0.14	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0494	51.28	0.1100	50.46	1.229	0.4540	11	0.62	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0137	51.69	0.7100	50.46	1.229	0.4540	11	0.93	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0360	51.81	0.5300	50.46	1.229	0.4540	11	1.03	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (50%)	0049	51.89	1.680	50.46	1.229	0.4540	11	1.09	OK	0
050.60	Soluble K2O, Flame Photometric (Oxalate) (50%)	0510	46.66	0.5609				1			0
050.61	Soluble K2O, Flame Photometric (Citrate) (50%)	0535	51.15	0.3000				2			0
050.61	Soluble K2O, Flame Photometric (Citrate) (50%)	0035	52.50	0.6000				2			0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (50%)	0029	50.51	1.110				2			0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (50%)	0535	51.10	0.2000				2			0
050.99	Soluble K2O, Other (50%)	0389	47.00	0.2000	50.98	1.294	0.4370	29	-3.07	Low	0
050.99	Soluble K2O, Other (50%)	0534	49.25	0.5000	50.98	1.294	0.4370	29	-1.33	Low	0
050.99	Soluble K2O, Other (50%)	0615	49.40	0.4000	50.98	1.294	0.4370	29	-1.22	OK	0
050.99	Soluble K2O, Other (50%)	0433	49.95	0.4600	50.98	1.294	0.4370	29	-0.79	OK	0
050.99	Soluble K2O, Other (50%)	0451	49.98	0.5200	50.98	1.294	0.4370	29	-0.77	OK	0
050.99	Soluble K2O, Other (50%)	0177	49.98	0.0610	50.98	1.294	0.4370	29	-0.77	OK	0
050.99	Soluble K2O, Other (50%)	0538	50.00	0.2000	50.98	1.294	0.4370	29	-0.75	OK	0
050.99	Soluble K2O, Other (50%)	0255	50.00	0.1200	50.98	1.294	0.4370	29	-0.75	OK	0
050.99	Soluble K2O, Other (50%)	0584	50.07	0.2200	50.98	1.294	0.4370	29	-0.70	OK	0
050.99	Soluble K2O, Other (50%)	0577	50.38	0.1100	50.98	1.294	0.4370	29	-0.46	OK	0
050.99	Soluble K2O, Other (50%)	0619	50.50	0.6000	50.98	1.294	0.4370	29	-0.37	OK	0
050.99	Soluble K2O, Other (50%)	0234	50.55	0.3000	50.98	1.294	0.4370	29	-0.33	OK	0
050.99	Soluble K2O, Other (50%)	0533	50.63	0.6200	50.98	1.294	0.4370	29	-0.27	OK	0
050.99	Soluble K2O, Other (50%)	0600	50.70	0.2000	50.98	1.294	0.4370	29	-0.21	OK	0
050.99	Soluble K2O, Other (50%)	0535	50.75	0.5000	50.98	1.294	0.4370	29	-0.17	OK	0
050.99	Soluble K2O, Other (50%)	0498	51.05	0.7000	50.98	1.294	0.4370	29	0.06	OK	0
050.99	Soluble K2O, Other (50%)	0612	51.14	1.110	50.98	1.294	0.4370	29	0.12	OK	0
050.99	Soluble K2O, Other (50%)	0614	51.15	0.1000	50.98	1.294	0.4370	29	0.13	OK	0
050.99	Soluble K2O, Other (50%)	0561	51.16	0.3600	50.98	1.294	0.4370	29	0.14	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
050.99	Soluble K2O, Other (50%)	0524	51.21	0.1409	50.98	1.294	0.4370	29	0.18	OK	0
050.99	Soluble K2O, Other (50%)	0307	51.70	5.000	50.98	1.294	0.4370	29	0.56	OK	0
050.99	Soluble K2O, Other (50%)	0563	51.80	0.8000	50.98	1.294	0.4370	29	0.64	OK	0
050.99	Soluble K2O, Other (50%)	0532	51.81	0.1700	50.98	1.294	0.4370	29	0.64	OK	0
050.99	Soluble K2O, Other (50%)	0587	51.87	0.2200	50.98	1.294	0.4370	29	0.69	OK	0
050.99	Soluble K2O, Other (50%)	0260	52.73	5.070	50.98	1.294	0.4370	29	1.35	High	0
050.99	Soluble K2O, Other (50%)	0527	52.84	0.0085	50.98	1.294	0.4370	29	1.44	High	0
050.99	Soluble K2O, Other (50%)	0605	52.86	0.4800	50.98	1.294	0.4370	29	1.46	High	0
050.99	Soluble K2O, Other (50%)	0588	54.26	0.8500	50.98	1.294	0.4370	29	2.53	High	0
050.99	Soluble K2O, Other (50%)	0572	56.25	2.119	50.98	1.294	0.4370	29	4.08	High	0
050.99	Soluble K2O, Other (50%)	0042	47.21	8.660	50.98	1.294	0.4370	29	-2.91	Low	1
060.99	Water (Free), Other (%)	0510	0.0445	0.0070				1			0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0354	0.2150	0.0300				1			0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0472	0.0450	0.0100	0.1002	0.0478	0.0038	3	-1.15		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0494	0.1252	0.0003	0.1002	0.0478	0.0038	3	0.52		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0630	0.1303	0.0010	0.1002	0.0478	0.0038	3	0.63		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0527	< 0.1		0.1002	0.0478	0.0038	3			5
101.99	Acid Soluble Ca, Other (%)	0572	0.1353	0.0003				1			0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0354	0.3250	0.0300				1			0
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (%)	0423	0.3065	0.0010				1			0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0494	0.3036	0.0014	0.3304	0.0261	0.0046	4	-1.03		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0630	0.3194	0.0038	0.3304	0.0261	0.0046	4	-0.42		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0527	0.3335	0.0032	0.3304	0.0261	0.0046	4	0.12		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0472	0.3650	0.0100	0.3304	0.0261	0.0046	4	1.33		0
121.99	Acid Soluble Mg, Other (%)	0524	0.3028	0.0102				2			0
121.99	Acid Soluble Mg, Other (%)	0572	0.3093	0.0124				2			0
131.99	Water Soluble Mg, Other (%)	0572	0.3092	0.0153				1			0
143.99	Elemental S, Other (%)	0368	17.46	0.4644	17.76	0.3138	0.1881	4	-0.95		0
143.99	Elemental S, Other (%)	0255	17.53	0.0700	17.76	0.3138	0.1881	4	-0.74		0
143.99	Elemental S, Other (%)	0291	17.95	0.0300	17.76	0.3138	0.1881	4	0.60		0
143.99	Elemental S, Other (%)	0389	18.10	0.0000	17.76	0.3138	0.1881	4	1.09		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0106	17.37	0.0900	17.82	0.3252	0.0580	5	-1.23		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0535	17.75	0.1000	17.82	0.3252	0.0580	5	-0.20		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0405	17.85	0.0100	17.82	0.3252	0.0580	5	0.06		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0584	17.88	0.0600	17.82	0.3252	0.0580	5	0.15		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0561	18.28	0.0300	17.82	0.3252	0.0580	5	1.21		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0498	15.40	0.8000	17.82	0.3252	0.0580	5	-6.50		1
145.99	Sulfate S, HCl soluble, Other (%)	0600	17.63	0.1400				2			0
145.99	Sulfate S, HCl soluble, Other (%)	0532	17.77	0.1200				2			0
148.00	Total S, Combustion (17.5%)	0521	16.50	0.0000	17.44	0.5829	0.3319	8	-1.48	OK	0
148.00	Total S, Combustion (17.5%)	0049	17.10	0.0600	17.44	0.5829	0.3319	8	-0.54	OK	0
148.00	Total S, Combustion (17.5%)	0073	17.29	0.4600	17.44	0.5829	0.3319	8	-0.24	OK	0
148.00	Total S, Combustion (17.5%)	0025	17.37	1.001	17.44	0.5829	0.3319	8	-0.11	OK	0

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			Value	Range	Rob Mean	Rob SD	Rob R-bar				
148.00	Total S, Combustion (17.5%)	0029	17.47	0.1400	17.44	0.5829	0.3319	8	0.04	OK	0
148.00	Total S, Combustion (17.5%)	0533	17.53	0.4300	17.44	0.5829	0.3319	8	0.13	OK	0
148.00	Total S, Combustion (17.5%)	0114	17.90	0.2300	17.44	0.5829	0.3319	8	0.71	OK	0
148.00	Total S, Combustion (17.5%)	0451	18.45	0.3000	17.44	0.5829	0.3319	8	1.58	High	0
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	0580	17.09	0.4300	17.76	0.3473	0.1628	7	-1.75	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	0538	17.50	0.1000	17.76	0.3473	0.1628	7	-0.67	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	0534	17.76	0.0500	17.76	0.3473	0.1628	7	0.00	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	0102	17.80	0.0800	17.76	0.3473	0.1628	7	0.11	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	0231	17.83	0.0600	17.76	0.3473	0.1628	7	0.19	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	0055	18.07	0.2750	17.76	0.3473	0.1628	7	0.82	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	0485	18.10	0.2000	17.76	0.3473	0.1628	7	0.90	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17.5%)	0324	18.70	1.200	17.76	0.3473	0.1628	7	2.46	OK	1
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0472	16.04	0.0600	17.83	0.6201	0.1392	12	-2.88	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0494	17.10	0.0834	17.83	0.6201	0.1392	12	-1.17	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0527	17.58	0.0144	17.83	0.6201	0.1392	12	-0.40	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0136	17.63	0.0900	17.83	0.6201	0.1392	12	-0.33	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0177	17.65	0.1462	17.83	0.6201	0.1392	12	-0.28	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0292	17.67	0.0900	17.83	0.6201	0.1392	12	-0.26	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0612	17.84	0.2200	17.83	0.6201	0.1392	12	0.02	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0040	17.90	0.4000	17.83	0.6201	0.1392	12	0.12	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0563	17.96	0.1100	17.83	0.6201	0.1392	12	0.20	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0543	18.46	0.1770	17.83	0.6201	0.1392	12	1.02	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0619	18.50	0.2000	17.83	0.6201	0.1392	12	1.08	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0043	18.87	0.2100	17.83	0.6201	0.1392	12	1.67	High	0
148.07	Total S, ICP, test portion as in 2017.02 (17.5%)	0260	17.97	1.380	17.83	0.6201	0.1392	12	0.23	OK	1
148.99	Total S, Other (17.5%)	0035	17.00	0.2000	18.19	0.9236	0.1200	13	-1.28	Low	0
148.99	Total S, Other (17.5%)	0577	17.47	0.2500	18.19	0.9236	0.1200	13	-0.78	OK	0
148.99	Total S, Other (17.5%)	0354	17.65	0.1000	18.19	0.9236	0.1200	13	-0.58	OK	0
148.99	Total S, Other (17.5%)	0558	17.66	0.0641	18.19	0.9236	0.1200	13	-0.57	OK	0
148.99	Total S, Other (17.5%)	0535	17.75	0.1000	18.19	0.9236	0.1200	13	-0.47	OK	0
148.99	Total S, Other (17.5%)	0597	17.85	0.5100	18.19	0.9236	0.1200	13	-0.37	OK	0
148.99	Total S, Other (17.5%)	0605	17.90	0.0300	18.19	0.9236	0.1200	13	-0.31	OK	0
148.99	Total S, Other (17.5%)	0023	18.11	0.0320	18.19	0.9236	0.1200	13	-0.08	OK	0
148.99	Total S, Other (17.5%)	0433	18.14	0.1100	18.19	0.9236	0.1200	13	-0.05	OK	0
148.99	Total S, Other (17.5%)	0619	18.50	0.2000	18.19	0.9236	0.1200	13	0.34	OK	0
148.99	Total S, Other (17.5%)	0220	19.33	0.0300	18.19	0.9236	0.1200	13	1.23	High	0
148.99	Total S, Other (17.5%)	0422	19.51	0.1000	18.19	0.9236	0.1200	13	1.43	High	0
148.99	Total S, Other (17.5%)	0572	19.73	0.0863	18.19	0.9236	0.1200	13	1.67	High	0
149.04	S - HNO3 soluble, ICP (%)	0524	16.46	0.5093				2			0
149.04	S - HNO3 soluble, ICP (%)	0423	17.12	0.0660				2			0
151.30	Acid Soluble As, ICP (ppm)	0524	0.3394	0.0260				1			0
151.30	Acid Soluble As, ICP (ppm)	0255	0.0000	0.0000				1			4
151.30	Acid Soluble As, ICP (ppm)	0605	< 6.2					1			5

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151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0220	0.3500	0.1000				1			0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0405	< 3					1			5
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0563	0.6400	0.0200				1			0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0527	< 0.0001					1			5
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0136	< 1					1			5
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0494	< 1.42					1			5
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0368	< 0.3					0			5
151.99	Acid Soluble As, Other (ppm)	0220	0.3500	0.1000				2			0
151.99	Acid Soluble As, Other (ppm)	0572	0.3951	0.0076				2			0
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0354	0.0100	0.0000				1			0
165.99	Acid Soluble B, Other (%)	0524	0.0002	0.0000	0.0028	0.0039	0.0008	3	-0.68		0
165.99	Acid Soluble B, Other (%)	0423	0.0010	0.0000	0.0028	0.0039	0.0008	3	-0.47		0
165.99	Acid Soluble B, Other (%)	0494	0.0073	0.0008	0.0028	0.0039	0.0008	3	1.15		0
165.99	Acid Soluble B, Other (%)	0527	< 0.01		0.0028	0.0039	0.0008	3			5
165.99	Acid Soluble B, Other (%)	0572	< 0.011		0.0028	0.0039	0.0008	3			5
171.99	Water Soluble B, Other (%)	0572	< 0.011					0			5
181.30	Acid Soluble Cd, ICP (ppm)	0524	0.0015	0.0002				2			0
181.30	Acid Soluble Cd, ICP (ppm)	0255	2.897	3.507				2			0
181.30	Acid Soluble Cd, ICP (ppm)	0605	< 1.85					2			5
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0220	< 0.1					0			5
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0405	< 1					0			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0563	0.0440	0.0040				1			0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0527	< 0.0001					1			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0494	< 0.17					1			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0136	< 1					1			5
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0368	< 0.1					0			5
181.99	Acid Soluble Cd, Other (ppm)	0572	< 0.05					0			5
181.99	Acid Soluble Cd, Other (ppm)	0220	< 0.1					0			5
190.00	Water Soluble Cl, Titrimetric (0.8%)	0220	0.0450	0.0100	0.3996	0.3502	0.0395	11	-1.01	Low	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0422	0.1095	0.0090	0.3996	0.3502	0.0395	11	-0.83	Low	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0494	0.1165	0.0050	0.3996	0.3502	0.0395	11	-0.81	Low	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0498	0.2150	0.0300	0.3996	0.3502	0.0395	11	-0.53	Low	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0619	0.2250	0.0300	0.3996	0.3502	0.0395	11	-0.50	Low	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0600	0.2500	0.1000	0.3996	0.3502	0.0395	11	-0.43	Low	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0561	0.3400	0.0800	0.3996	0.3502	0.0395	11	-0.17	Low	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0577	0.6900	0.0400	0.3996	0.3502	0.0395	11	0.83	High	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0533	0.7650	0.0100	0.3996	0.3502	0.0395	11	1.04	High	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0538	0.7900	0.0200	0.3996	0.3502	0.0395	11	1.11	High	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0535	0.8500	0.1000	0.3996	0.3502	0.0395	11	1.29	High	0
190.00	Water Soluble Cl, Titrimetric (0.8%)	0405	< 0.5		0.3996	0.3502	0.0395	11			5
190.99	Water Soluble Cl, Other (0.8%)	0451	0.0765	0.0010	0.2913	0.3169	0.0383	5	-0.68		0
190.99	Water Soluble Cl, Other (0.8%)	0023	0.1350	0.0220	0.2913	0.3169	0.0383	5	-0.49		0
190.99	Water Soluble Cl, Other (0.8%)	0292	0.1700	0.0000	0.2913	0.3169	0.0383	5	-0.38		0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
190.99	Water Soluble Cl, Other (0.8%)	0619	0.2250	0.0300	0.2913	0.3169	0.0383	5	-0.21		0
190.99	Water Soluble Cl, Other (0.8%)	0535	0.8500	0.1000	0.2913	0.3169	0.0383	5	1.76		0
191.30	Acid Soluble Cr, ICP (ppm)	0524	3.460	0.0257				2			0
191.30	Acid Soluble Cr, ICP (ppm)	0605	11.14	0.7200				2			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0220	6.950	0.3000				2			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0405	11.00	0.0000				2			0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0527	9.687	0.2531	10.19	0.4823	0.3110	3	-1.03		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0563	10.22	0.3800	10.19	0.4823	0.3110	3	0.07		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0494	10.65	0.3000	10.19	0.4823	0.3110	3	0.96		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0136	< 2.5		10.19	0.4823	0.3110	3			5
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0368	7.700	3.200				1			0
191.99	Acid Soluble Cr, Other (ppm)	0572	5.411	0.2525				2			0
191.99	Acid Soluble Cr, Other (ppm)	0220	7.350	0.3000				2			0
202.30	Acid Soluble Co, ICP (ppm)	0524	0.4540	0.0860				2			0
202.30	Acid Soluble Co, ICP (ppm)	0605	0.5030	0.0360				2			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0220	0.4000	0.0000				2			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0423	0.8200	0.1200				2			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0405	< 1					2			5
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0563	0.3600	0.0400				1			0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0527	< 0.0001					1			5
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0494	< 0.7					1			5
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0136	< 2.5					1			5
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0368	0.4000	0.0000				1			0
202.99	Acid Soluble Co, Other (ppm)	0220	0.4000	0.0000				2			0
202.99	Acid Soluble Co, Other (ppm)	0255	15.03	9.470				2			0
202.99	Acid Soluble Co, Other (ppm)	0572	< 0.65					2			5
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0354	0.0300	0.0000				1			0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0255	0.0000	0.0000				1			4
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0405	< 0.0002					0			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0106	0.0000	0.0000				0			4
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0527	< 0.0001					0			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0563	< 0.0001					0			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0136	< 0.0002					0			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0494	< 0.0002					0			5
221.99	Acid Soluble Cu, Other (%)	0524	0.0001	0.0000				2			0
221.99	Acid Soluble Cu, Other (%)	0368	0.0006	0.0009				2			0
221.99	Acid Soluble Cu, Other (%)	0572	< 0.0001					2			5
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0354	0.0800	0.0000				1			0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0472	0.0500	0.0000	0.0539	0.0029	0.0007	4	-1.36		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0527	0.0535	0.0010	0.0539	0.0029	0.0007	4	-0.14		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0630	0.0558	0.0001	0.0539	0.0029	0.0007	4	0.64		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0494	0.0564	0.0009	0.0539	0.0029	0.0007	4	0.85		0
241.99	Acid Soluble Fe, Other (%)	0572	0.0397	0.0008				2			0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
241.99	Acid Soluble Fe, Other (%)	0524	0.0412	0.0023				2			0
251.30	Acid Soluble Pb, ICP (ppm)	0524	0.4702	0.0336				1			0
251.30	Acid Soluble Pb, ICP (ppm)	0255	0.0000	0.0000				1			4
251.30	Acid Soluble Pb, ICP (ppm)	0605	< 5					1			5
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0220	0.7000	0.0000				1			0
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0405	< 4					1			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0563	0.5650	0.0500				1			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0527	< 0.0001					1			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0494	< 0.91					1			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0136	< 3					1			5
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0368	1.000	0.4000				1			0
251.99	Acid Soluble Pb, Other (ppm)	0572	0.5814	0.0371				2			0
251.99	Acid Soluble Pb, Other (ppm)	0220	0.8000	0.0000				2			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0354	0.0100	0.0000				1			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0527	0.0010	0.0000				2			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0563	0.0010	0.0000				2			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0494	< 0.0001					2			5
261.99	Acid Soluble Mn, Other (%)	0572	0.0008	0.0000				2			0
261.99	Acid Soluble Mn, Other (%)	0524	0.0009	0.0001				2			0
281.30	Acid Soluble Hg, ICP (ppm)	0527	< 0.001					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0605	< 1.25					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0405	< 2					0			5
281.99	Acid Soluble Hg, Other (ppm)	0524	0.0002	0.0000				1			0
281.99	Acid Soluble Hg, Other (ppm)	0572	< 0.009					1			5
281.99	Acid Soluble Hg, Other (ppm)	0220	< 0.01					1			5
289.30	Acid Soluble Mo, ICP (ppm)	0524	0.1049	0.0466				1			0
289.30	Acid Soluble Mo, ICP (ppm)	0255	0.0000	0.0000				1			4
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0220	0.3000	0.0000				1			0
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0405	< 1					1			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0563	0.2900	0.1200				1			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0106	0.0000	0.0000				1			4
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0527	< 0.0001					1			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0136	< 2.5					1			5
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0368	0.2000	0.0000				1			0
289.99	Acid Soluble Mo, Other (ppm)	0220	0.4000	0.0000				1			0
289.99	Acid Soluble Mo, Other (ppm)	0572	< 2.1					1			5
291.30	Acid Soluble Ni, ICP (ppm)	0524	0.5581	0.0160				1			0
291.30	Acid Soluble Ni, ICP (ppm)	0605	< 2.4					1			5
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0220	0.7000	0.0000				1			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0405	< 1					1			5
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0563	0.9400	0.0600				1			0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0527	< 0.0001					1			5
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0136	< 2.5					1			5

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0368	2.100	2.000				1			0
291.99	Acid Soluble Ni, Other (ppm)	0220	0.7500	0.1000				2			0
291.99	Acid Soluble Ni, Other (ppm)	0255	22.46	14.37				2			0
291.99	Acid Soluble Ni, Other (ppm)	0572	< 1.67					2			5
301.30	Acid Soluble Se, ICP (ppm)	0524	0.0114	0.0015				1			0
301.30	Acid Soluble Se, ICP (ppm)	0605	< 1.65					1			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0220	< 0.3					0			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0405	< 10					0			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0527	< 0.01					0			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0494	< 1					0			5
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0368	< 1.3					0			5
301.99	Acid Soluble Se, Other (ppm)	0255	0.0000	0.0000				0			4
301.99	Acid Soluble Se, Other (ppm)	0220	< 0.3					0			5
301.99	Acid Soluble Se, Other (ppm)	0572	< 0.68					0			5
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0423	0.0680	0.0020	0.0995	0.0278	0.0020	3	-1.13		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0494	0.1101	0.0002	0.0995	0.0278	0.0020	3	0.38		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	0.1205	0.0039	0.0995	0.0278	0.0020	3	0.75		0
311.99	Sodium, Other (%)	0572	0.1125	0.0048	0.1325	0.0246	0.0116	3	-0.81		0
311.99	Sodium, Other (%)	0535	0.1250	0.0100	0.1325	0.0246	0.0116	3	-0.30		0
311.99	Sodium, Other (%)	0354	0.1600	0.0200	0.1325	0.0246	0.0116	3	1.12		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0354	0.0100	0.0000				2			0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0255	0.0115	0.0010				2			0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0220	0.0005	0.0001				1			0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0405	< 0.0003					1			5
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0106	0.0000	0.0000				0			4
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0136	< 0.0003					0			5
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0494	< 0.0005					0			5
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0527	< 0.001					0			5
321.99	Acid Soluble Zn, Other (%)	0524	0.0001	0.0000	0.0003	0.0002	0.0002	3	-1.15		0
321.99	Acid Soluble Zn, Other (%)	0368	0.0005	0.0001	0.0003	0.0002	0.0002	3	0.58		0
321.99	Acid Soluble Zn, Other (%)	0572	0.0005	0.0003	0.0003	0.0002	0.0002	3	0.58		0
325.30	Water Soluble Zn, ICP (%)	0368	0.0005	0.0001				1			0
325.99	Water Soluble Zn, Other (%)	0572	0.0006	0.0003				1			0
431.99	Soluble Si in nonliquids, Other (%)	0572	0.0209	0.0020				1			0

Interpreting Z Scores and Flags:

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.

Notes:

*Robust statistics not used if < 6 labs used in calculations, in this case Values and Z Scores are grayed out and should be interpreted with extreme caution. Identical duplicates not included in calculation of Rob R-bar. IA Status describes where your result is relative to the Assigned Value $\pm$ IA. Red indicates Higher or Lower and Green indicates within the IA range about the Robust mean. Method codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for