



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 93

Sample # 241215

Regular PT Scheme Sample Doubles with K Scheme

Labs Reporting: 74

Potash

Statistical Summary

Issue Date : 01/31/2025

Method Code	Analyte & Method Sample # 241215	# 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		0.0278									
005.99	Urea N, Other (%)	1		0.0662									
010.12	Total N, Salicylic (%)	1		0.0070									
010.60	Total N, Combustion (%)	3	3	0.0418	0.0276	0.0418	0.4900	0.0276	0.0199	65.93%	0.13	0.0495	6.45%
010.99	Total N, Other (%)	1		0.0370									
020.50	Total P2O5, ICP (%)	4	2	0.0286	0.0479	0.0066		0.0074	0.0065	111.42%		0.0002	8.52%
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext.	2	1	0.0100	0.0000								
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (%)	1		1.000									
050.00	Soluble K2O, STPB Oxalate (60%)	11	11	60.36	0.6764	60.40	1.7840	0.6737	0.2539	1.12%	0.88	0.1497	1.29%
050.30	Soluble K2O, AA (Oxalate) (60%)	1		62.15									
050.32	Soluble K2O, AA (Citrate-EDTA) (60%)	1		39.60									
050.50	Soluble K2O, ICP (Oxalate) (60%)	7	6	60.47	1.224	60.22	1.7822	1.090	0.5563	1.81%	1.43	0.2262	1.29%
050.51	Soluble K2O, ICP (Citrate) (60%)	4	4	60.25	2.126	60.25	1.7825	2.126	1.329	3.53%	2.78	0.5717	1.29%
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	10	9	59.46	2.113	59.67	1.7751	1.533	0.6387	2.57%	2.01	0.2586	1.29%
050.61	Soluble K2O, Flame Photometric (Citrate) (60%)	1		61.45									
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (60%)	4	4	61.30	0.3923	61.30	1.7930	0.3923	0.2452	0.64%	0.51	1.288	1.28%
050.99	Soluble K2O, Other (60%)	36	36	60.44	1.949	60.29	1.7829	1.078	0.2247	1.79%	1.41	0.4646	1.29%
060.20	Water (Free), Karl Fischer (%)	2	2	0.1423	0.0032								
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g samp	2	2	0.1103	0.0279								
060.99	Water (Free), Other (%)	5	4	0.0757	0.0581	0.0696		0.0652	0.0408	93.68%		0.0040	5.97%
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	3	3	0.0858	0.0104	0.0858	0.2043	0.0104	0.0075	12.11%	0.12	0.0090	5.79%
101.99	Acid Soluble Ca, Other (%)	2	2	0.0834	0.0020								
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	3	3	0.0650	0.0044	0.0650	0.2033	0.0044	0.0031	6.71%	0.05	0.0000	6.04%
121.99	Acid Soluble Mg, Other (%)	3	3	0.0631	0.0040	0.0631	0.2032	0.0040	0.0029	6.30%	0.05	0.0003	6.06%
131.99	Water Soluble Mg, Other (%)	1		0.0376									
148.99	Total S, Other (%)	4	4	0.0439	0.0371	0.0439	0.2022	0.0371	0.0232	84.63%	0.43	0.0070	6.40%
149.04	S - HNO3 soluble, ICP (%)	1		0.0257									
151.00	Acid Soluble As, AA, test portion 2006.03 modified w/dual acid	1		0.5000									
151.30	Acid Soluble As, ICP (ppm)	3	1	2.131	3.568	0.0439		0.0371	0.0464	84.63%		0.0005	22.00%

Method Code	Analyte & Method Sample # 241215	# 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
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	2	1	1.600	1.980								
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	3	1	5.160	4.538	0.0439		0.0371	0.0464	84.63%		0.0005	22.00%
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	2	1	1.493	1.686								
151.99	Acid Soluble As, Other (ppm)	4	2	0.3361	0.1898	0.1723		0.0251	0.0222	14.57%		0.0825	20.84%
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	2	0	0.0050	0.0071								
165.99	Acid Soluble B, Other (%)	1		0.0001									
181.30	Acid Soluble Cd, ICP (ppm)	5	1	0.2735	0.4180	0.1723		0.0251	0.0314	14.57%		0.0250	20.84%
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	2	1	0.5500	0.6364								
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	3	0	2.063	2.575	0.1723		0.0251		14.57%		0.0250	20.84%
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	2	0	0.1165	0.0233								
181.99	Acid Soluble Cd, Other (ppm)	4	2	0.1639	0.2274	0.0528		0.0668	0.0591	126.68%		0.0030	22.00%
190.00	Water Soluble Cl, Titrimetric (%)	16	16	46.87	0.6735	46.90	1.0000	0.6913	0.2160	1.47%	1.61	0.2812	1.46%
190.99	Water Soluble Cl, Other (%)	7	6	47.51	1.689	46.97	1.0000	0.9096	0.4642	1.94%	2.12	0.1234	1.46%
191.30	Acid Soluble Cr, ICP (ppm)	4	3	1.722	2.242	0.6294		0.6154	0.4441	97.78%		0.0354	17.15%
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	2	1	0.9325	0.0955								
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	3	1	3.655	1.261	0.6294		0.6154	0.7693	97.78%		0.0072	17.15%
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	2	1	1.257	1.636								
191.99	Acid Soluble Cr, Other (ppm)	4	3	5.711	9.532	0.9478		0.4238	0.3059	44.72%		0.2257	16.13%
202.30	Acid Soluble Co, ICP (ppm)	3	2	0.5898	0.5721	0.2597	1.0779	0.0266	0.0235	10.25%	0.06	0.0649	19.60%
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	2	0	0.5500	0.6364								
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	3	0	2.587	2.371	0.2597	1.0779	0.0266		10.25%	0.06	0.0530	19.60%
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	2	0	0.1195	0.0276								
202.99	Acid Soluble Co, Other (ppm)	3	1	2.618	3.919	0.2597	1.0779	0.0266	0.0333	10.25%	0.06	0.0530	19.60%
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	4	1	0.0027	0.0049	0.2597	0.0310	0.0266	0.0333	10.25%	2.00	0.0530	4.90%
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	1		0.0002									
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	4	1	0.0008	0.0011	0.2597	0.0310	0.0266	0.0333	10.25%	2.00	0.0530	4.90%
221.99	Acid Soluble Cu, Other (%)	4	1	0.0027	0.0049	0.2597	0.0310	0.0266	0.0333	10.25%	2.00	0.0530	4.90%
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	3	3	0.0555	0.0338	0.0555	0.0106	0.0338	0.0244	60.82%	7.45	0.0075	6.18%
241.99	Acid Soluble Fe, Other (%)	3	3	0.0719	0.0089	0.0719	0.0122	0.0089	0.0064	12.31%	1.69	0.0017	5.94%
251.30	Acid Soluble Pb, ICP (ppm)	5	2	2.348	3.026	0.2452		0.0293	0.0259	11.94%		0.0561	19.77%
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	2	1	2.275	2.440								
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	3	1	3.125	1.816	0.2452		0.0293	0.0366	11.94%		0.0310	19.77%
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	2	0	0.4580	0.3422								
251.99	Acid Soluble Pb, Other (ppm)	3	2	0.7017	0.3940	0.5525		0.4207	0.3719	76.15%		0.0550	17.49%
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	2	1	0.0053	0.0067								
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (%)	1		0.0010									
261.99	Acid Soluble Mn, Other (%)	3	3	0.0005	0.0000	0.0005	0.0051	0.0000	0.0000	5.41%	0.01	0.0001	12.43%
281.00	Acid Soluble Hg, AA (ppm)	1		0.5000									
281.30	Acid Soluble Hg, ICP (ppm)	4	1	0.8388	0.9589	0.0005		0.0000	0.0000	5.41%		0.0001	22.00%
281.99	Acid Soluble Hg, Other (ppm)	5	1	0.0407	0.0580	0.0005		0.0000	0.0000	5.41%		0.0001	22.00%

Method Code	Analyte & Method Sample # 241215	# 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
289.30	Acid Soluble Mo, ICP (ppm)	2	1	0.0678	0.0958								
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	2	0	0.6500	0.4950								
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	3	0	2.577	2.386	0.0005	1.0002	0.0000		5.41%	0.00	0.0001	22.00%
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	2	0	0.1390	0.0552								
289.99	Acid Soluble Mo, Other (ppm)	1		0.3000									
291.30	Acid Soluble Ni, ICP (ppm)	5	4	1.413	2.009	0.5158		0.1356	0.0848	26.30%		0.1615	17.67%
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	2	1	1.150	0.2121								
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	3	0	2.587	2.371	0.5158		0.1356		26.30%		0.0750	17.67%
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	2	0	0.1900	0.0141								
291.99	Acid Soluble Ni, Other (ppm)	2	1	0.7500	1.061								
301.30	Acid Soluble Se, ICP (ppm)	2	1	3.132	4.409								
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	3	1	3.492	5.637	0.5158		0.1356	0.1695	26.30%		0.0750	17.67%
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	1		2.671									
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	2	0	0.7130	0.6887								
301.99	Acid Soluble Se, Other (ppm)	3	1	0.2333	0.2517	0.5158		0.1356	0.1695	26.30%		0.0750	17.67%
311.00	Sodium, AA (%)	1		1.049									
311.30	Sodium, Flame Photometric (%)	4	4	1.209	0.1933	1.209	0.1259	0.1933	0.1208	15.99%	3.58	0.0425	3.89%
311.32	Sodium, ICP, 2006.03 test portion (%)	1		1.000									
311.33	Sodium, ICP, test portion as in 2017.02 (%)	8	8	1.053	0.0869	1.053	0.1103	0.0986	0.0436	9.36%	2.08	0.0345	3.97%
311.99	Sodium, Other (%)	12	12	1.090	0.3620	1.024	0.1074	0.0645	0.0233	6.30%	1.40	0.0461	3.99%
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	4	2	0.0030	0.0047	0.0009	0.0051	0.0008	0.0007	87.91%	0.37	0.0006	11.45%
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	1		0.0003									
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	4	1	0.0008	0.0011	0.0009	0.0051	0.0008	0.0010	87.91%	0.37	0.0001	11.45%
321.99	Acid Soluble Zn, Other (%)	3	0	0.0034	0.0057	0.0009	0.0051	0.0008		87.91%	0.37	0.0001	11.45%

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 # 241215

Regular PT Scheme Sample Doubles with K Scheme

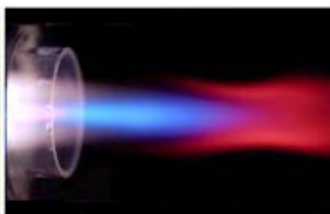
Potash

Method Precision Report

Issue Date : 01/31/2025

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 (60%)	11	10	60.29	0.6615	0.6525	0.1542	0.6705	1.08%	0.26%	1.11%	4.347
050.50	Soluble K ₂ O, ICP (Oxalate) (60%)	7	6	60.18	1.042	1.028	0.2374	1.055	1.71%	0.39%	1.75%	4.445
050.52	Soluble K ₂ O, ICP (Citrate-EDTA) (60%)	10	8	59.96	1.113	1.102	0.2249	1.124	1.84%	0.38%	1.88%	4.999
050.99	Soluble K ₂ O, Other (60%)	36	31	60.26	1.049	0.9923	0.4792	1.102	1.65%	0.80%	1.83%	2.300
190.00	Water Soluble Cl, Titrimetric (%)	16	16	46.87	0.6735	0.6384	0.3034	0.7068	1.36%	0.65%	1.51%	2.330
190.99	Water Soluble Cl, Other (%)	7	5	46.92	0.9588	0.9573	0.0756	0.9603	2.04%	0.16%	2.05%	12.70
311.33	Sodium, ICP, test portion as in 2017.02 (%)	8	8	1.053	0.0869	0.0848	0.0271	0.0890	8.05%	2.58%	8.46%	3.283
311.99	Sodium, Other (%)	12	11	0.9992	0.1900	0.1875	0.0434	0.1925	18.77%	4.35%	19.26%	4.432

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



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 93

Sample # 241215

Regular PT Scheme Sample Doubles with K Scheme

Labs Reporting: 74

Potash

Lab Values

Issue Date : 01/31/2025

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	0.0278	0.0003				1			0
005.99	Urea N, Other (%)	0524	0.0662	0.0074				1			0
010.12	Total N, Salicylic (%)	0568	0.0070	0.0000				1			0
010.60	Total N, Combustion (%)	0422	0.0100	0.0000	0.0418	0.0276	0.0495	3	-1.15		0
010.60	Total N, Combustion (%)	0588	0.0570	0.0040	0.0418	0.0276	0.0495	3	0.55		0
010.60	Total N, Combustion (%)	0354	0.0585	0.0950	0.0418	0.0276	0.0495	3	0.60		0
010.99	Total N, Other (%)	0524	0.0370	0.0088				1			0
020.50	Total P2O5, ICP (%)	0524	0.0014	0.0000				2			0
020.50	Total P2O5, ICP (%)	0422	0.0118	0.0002				2			0
020.50	Total P2O5, ICP (%)	0542	< 0.0012					2			5
020.50	Total P2O5, ICP (%)	0588	< 0.1					2			5
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0568	0.0100	0.0000				1			0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0354	< 0.01					1			5
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (%)	0034	< 1					0			5
050.00	Soluble K2O, STPB Oxalate (60%)	0102	58.96	0.0000	60.40	0.6737	0.1497	11	-2.01	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0049	59.44	0.1400	60.40	0.6737	0.1497	11	-1.34	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0626	60.02	0.0400	60.40	0.6737	0.1497	11	-0.53	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0619	60.20	0.2000	60.40	0.6737	0.1497	11	-0.28	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0072	60.42	0.0740	60.40	0.6737	0.1497	11	0.02	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0444	60.53	0.0100	60.40	0.6737	0.1497	11	0.17	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0231	60.53	0.1000	60.40	0.6737	0.1497	11	0.18	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0055	60.87	0.1300	60.40	0.6737	0.1497	11	0.64	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0405	60.93	0.1000	60.40	0.6737	0.1497	11	0.73	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0073	61.00	0.6100	60.40	0.6737	0.1497	11	0.82	OK	0
050.00	Soluble K2O, STPB Oxalate (60%)	0494	61.13	0.8100	60.40	0.6737	0.1497	11	1.00	OK	0
050.30	Soluble K2O, AA (Oxalate) (60%)	0040	62.15	0.5000				1			0
050.32	Soluble K2O, AA (Citrate-EDTA) (60%)	0472	39.60	1.800				1			0
050.50	Soluble K2O, ICP (Oxalate) (60%)	0055	58.35	0.0850	60.22	1.090	0.2262	6	-1.53	Low	0
050.50	Soluble K2O, ICP (Oxalate) (60%)	0169	59.95	0.1000	60.22	1.090	0.2262	6	-0.22	OK	0
050.50	Soluble K2O, ICP (Oxalate) (60%)	0324	60.05	0.7000	60.22	1.090	0.2262	6	-0.13	OK	0
050.50	Soluble K2O, ICP (Oxalate) (60%)	0444	60.39	0.3400	60.22	1.090	0.2262	6	0.14	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			#	Magruder PT	Method IA	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar	Tests	Z Score	Status	
050.50	Soluble K2O, ICP (Oxalate) (60%)	0422	61.04	0.1566	60.22	1.090	0.2262	6	0.67	OK	0
050.50	Soluble K2O, ICP (Oxalate) (60%)	0292	61.29	0.1700	60.22	1.090	0.2262	6	0.87	OK	0
050.50	Soluble K2O, ICP (Oxalate) (60%)	0086	62.21	1.934	60.22	1.090	0.2262	6	1.63	High	1
050.51	Soluble K2O, ICP (Citrate) (60%)	0568	57.30	0.0000	60.25	2.126	0.5717	4	-1.39		0
050.51	Soluble K2O, ICP (Citrate) (60%)	0007	60.39	0.4100	60.25	2.126	0.5717	4	0.07		0
050.51	Soluble K2O, ICP (Citrate) (60%)	0368	60.97	1.225	60.25	2.126	0.5717	4	0.34		0
050.51	Soluble K2O, ICP (Citrate) (60%)	0291	62.33	0.0800	60.25	2.126	0.5717	4	0.98		0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0543	54.17	0.0760	59.67	1.533	0.2586	9	-3.31	Low	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0354	58.15	0.1000	59.67	1.533	0.2586	9	-0.92	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0043	58.76	0.0000	59.67	1.533	0.2586	9	-0.55	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0423	59.48	0.1700	59.67	1.533	0.2586	9	-0.12	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0023	60.30	0.5990	59.67	1.533	0.2586	9	0.38	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0377	60.37	0.5200	59.67	1.533	0.2586	9	0.42	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0485	60.40	0.2000	59.67	1.533	0.2586	9	0.44	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0177	60.58	0.1050	59.67	1.533	0.2586	9	0.55	OK	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0136	61.65	0.3000	59.67	1.533	0.2586	9	1.19	High	0
050.52	Soluble K2O, ICP (Citrate-EDTA) (60%)	0494	60.71	2.130	59.67	1.533	0.2586	9	0.62	OK	1
050.61	Soluble K2O, Flame Photometric (Citrate) (60%)	0035	61.45	0.1000				1			0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (60%)	0037	61.00	0.2500	61.30	0.3923	1.288	4	-0.78		0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (60%)	0034	61.14	0.3505	61.30	0.3923	1.288	4	-0.41		0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (60%)	0095	61.19	2.540	61.30	0.3923	1.288	4	-0.28		0
050.62	Soluble K2O, Flame Photometric (Citrate-EDTA) (60%)	0029	61.88	2.010	61.30	0.3923	1.288	4	1.47		0
050.99	Soluble K2O, Other (60%)	0515	55.35	1.390	60.29	1.078	0.4646	36	-4.59	Low	0
050.99	Soluble K2O, Other (60%)	0553	58.04	1.890	60.29	1.078	0.4646	36	-2.09	Low	0
050.99	Soluble K2O, Other (60%)	0389	58.67	0.0200	60.29	1.078	0.4646	36	-1.51	OK	0
050.99	Soluble K2O, Other (60%)	0524	59.01	1.064	60.29	1.078	0.4646	36	-1.19	OK	0
050.99	Soluble K2O, Other (60%)	0421	59.15	0.1000	60.29	1.078	0.4646	36	-1.06	OK	0
050.99	Soluble K2O, Other (60%)	0481	59.16	0.2300	60.29	1.078	0.4646	36	-1.06	OK	0
050.99	Soluble K2O, Other (60%)	0255	59.16	0.1810	60.29	1.078	0.4646	36	-1.05	OK	0
050.99	Soluble K2O, Other (60%)	0521	59.44	0.0000	60.29	1.078	0.4646	36	-0.79	OK	0
050.99	Soluble K2O, Other (60%)	0234	59.65	0.8000	60.29	1.078	0.4646	36	-0.60	OK	0
050.99	Soluble K2O, Other (60%)	0615	59.75	0.3000	60.29	1.078	0.4646	36	-0.50	OK	0
050.99	Soluble K2O, Other (60%)	0531	59.85	0.1000	60.29	1.078	0.4646	36	-0.41	OK	0
050.99	Soluble K2O, Other (60%)	0626	59.98	0.0500	60.29	1.078	0.4646	36	-0.30	OK	0
050.99	Soluble K2O, Other (60%)	0577	60.00	0.4800	60.29	1.078	0.4646	36	-0.27	OK	0
050.99	Soluble K2O, Other (60%)	0619	60.20	0.2000	60.29	1.078	0.4646	36	-0.09	OK	0
050.99	Soluble K2O, Other (60%)	0635	60.23	0.0500	60.29	1.078	0.4646	36	-0.06	OK	0
050.99	Soluble K2O, Other (60%)	0605	60.23	0.1720	60.29	1.078	0.4646	36	-0.06	OK	0
050.99	Soluble K2O, Other (60%)	0517	60.25	0.3000	60.29	1.078	0.4646	36	-0.04	OK	0
050.99	Soluble K2O, Other (60%)	0584	60.29	0.2600	60.29	1.078	0.4646	36	0.00	OK	0
050.99	Soluble K2O, Other (60%)	0451	60.30	0.1800	60.29	1.078	0.4646	36	0.01	OK	0
050.99	Soluble K2O, Other (60%)	0564	60.33	0.0500	60.29	1.078	0.4646	36	0.03	OK	0
050.99	Soluble K2O, Other (60%)	0600	60.38	0.2500	60.29	1.078	0.4646	36	0.08	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			#	Magruder PT	Method IA	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar	Tests	Z Score	Status	
050.99	Soluble K2O, Other (60%)	0513	60.40	0.1600	60.29	1.078	0.4646	36	0.10	OK	0
050.99	Soluble K2O, Other (60%)	0588	60.44	2.810	60.29	1.078	0.4646	36	0.13	OK	0
050.99	Soluble K2O, Other (60%)	0612	60.47	2.870	60.29	1.078	0.4646	36	0.16	OK	0
050.99	Soluble K2O, Other (60%)	0394	60.55	0.5500	60.29	1.078	0.4646	36	0.24	OK	0
050.99	Soluble K2O, Other (60%)	0042	60.65	0.5000	60.29	1.078	0.4646	36	0.33	OK	0
050.99	Soluble K2O, Other (60%)	0611	60.65	0.1000	60.29	1.078	0.4646	36	0.33	OK	0
050.99	Soluble K2O, Other (60%)	0559	60.85	0.0100	60.29	1.078	0.4646	36	0.51	OK	0
050.99	Soluble K2O, Other (60%)	0527	60.94	0.1548	60.29	1.078	0.4646	36	0.60	OK	0
050.99	Soluble K2O, Other (60%)	0433	61.23	0.4300	60.29	1.078	0.4646	36	0.86	OK	0
050.99	Soluble K2O, Other (60%)	0561	61.75	0.0200	60.29	1.078	0.4646	36	1.35	OK	0
050.99	Soluble K2O, Other (60%)	0371	61.79	0.5900	60.29	1.078	0.4646	36	1.38	OK	0
050.99	Soluble K2O, Other (60%)	0537	61.80	2.170	60.29	1.078	0.4646	36	1.39	OK	0
050.99	Soluble K2O, Other (60%)	0307	63.25	3.300	60.29	1.078	0.4646	36	2.74	High	0
050.99	Soluble K2O, Other (60%)	0572	63.36	1.510	60.29	1.078	0.4646	36	2.84	High	0
050.99	Soluble K2O, Other (60%)	0542	68.50	0.4110	60.29	1.078	0.4646	36	7.61	High	0
060.20	Water (Free), Karl Fischer (%)	0626	0.1400	0.0000				2			0
060.20	Water (Free), Karl Fischer (%)	0513	0.1445	0.0070				2			0
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g sample)	0394	0.0905	0.0030				2			0
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g sample)	0626	0.1300	0.0000				2			0
060.99	Water (Free), Other (%)	0136	0.0110	0.0010	0.0696	0.0652	0.0040	4	-0.90		0
060.99	Water (Free), Other (%)	0405	0.0225	0.0010	0.0696	0.0652	0.0040	4	-0.72		0
060.99	Water (Free), Other (%)	0572	0.0950	0.0100	0.0696	0.0652	0.0040	4	0.39		0
060.99	Water (Free), Other (%)	0009	0.1500	0.0000	0.0696	0.0652	0.0040	4	1.23		0
060.99	Water (Free), Other (%)	0481	< 0.1		0.0696	0.0652	0.0040	4			5
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0568	0.0740	0.0000	0.0858	0.0104	0.0090	3	-1.14		0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0354	0.0900	0.0000	0.0858	0.0104	0.0090	3	0.40		0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0035	0.0935	0.0090	0.0858	0.0104	0.0090	3	0.74		0
101.99	Acid Soluble Ca, Other (%)	0572	0.0820	0.0020				2			0
101.99	Acid Soluble Ca, Other (%)	0542	0.0849	0.0011				2			0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0568	0.0620	0.0000	0.0650	0.0044	0.0000	3	-0.69		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0371	0.0630	0.0000	0.0650	0.0044	0.0000	3	-0.46		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0354	0.0700	0.0000	0.0650	0.0044	0.0000	3	1.15		0
121.99	Acid Soluble Mg, Other (%)	0524	0.0592	0.0001	0.0631	0.0040	0.0003	3	-0.99		0
121.99	Acid Soluble Mg, Other (%)	0572	0.0630	0.0000	0.0631	0.0040	0.0003	3	-0.02		0
121.99	Acid Soluble Mg, Other (%)	0542	0.0671	0.0004	0.0631	0.0040	0.0003	3	1.01		0
131.99	Water Soluble Mg, Other (%)	0572	0.0376	0.0014				1			0
148.99	Total S, Other (%)	0422	0.0104	0.0005	0.0439	0.0371	0.0070	4	-0.90		0
148.99	Total S, Other (%)	0354	0.0300	0.0200	0.0439	0.0371	0.0070	4	-0.37		0
148.99	Total S, Other (%)	0542	0.0384	0.0062	0.0439	0.0371	0.0070	4	-0.15		0
148.99	Total S, Other (%)	0572	0.0967	0.0011	0.0439	0.0371	0.0070	4	1.42		0
149.04	S - HNO3 soluble, ICP (%)	0524	0.0257	0.0021				1			0
151.00	Acid Soluble As, AA, test portion 2006.03 modified w/dual acid	0626	< 0.5					0			5
151.30	Acid Soluble As, ICP (ppm)	0524	0.1424	0.0118				1			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				
151.30	Acid Soluble As, ICP (ppm)	0255	0.0000	0.0000				1			4
151.30	Acid Soluble As, ICP (ppm)	0605	< 6.25					1			5
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0086	0.1995	0.0130				1			0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0405	< 3					1			5
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0515	4.479	0.0550				1			0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0136	< 1					1			5
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0117	< 10					1			5
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0515	2.685	3.118				1			0
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0368	< 0.3					1			5
151.99	Acid Soluble As, Other (ppm)	0371	0.1545	0.0250				2			0
151.99	Acid Soluble As, Other (ppm)	0572	0.1900	0.1400				2			0
151.99	Acid Soluble As, Other (ppm)	0220	< 0.5					2			5
151.99	Acid Soluble As, Other (ppm)	0481	< 0.5					2			5
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0371	0.0000	0.0000				0			4
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0354	< 0.01					0			5
165.99	Acid Soluble B, Other (%)	0542	< 0.0001					0			5
181.30	Acid Soluble Cd, ICP (ppm)	0524	0.0176	0.0130				1			0
181.30	Acid Soluble Cd, ICP (ppm)	0255	0.0000	0.0000				1			4
181.30	Acid Soluble Cd, ICP (ppm)	0394	< 0.1					1			5
181.30	Acid Soluble Cd, ICP (ppm)	0605	< 0.25					1			5
181.30	Acid Soluble Cd, ICP (ppm)	0626	< 1					1			5
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0220	0.1000	0.0000				1			0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0405	< 1					1			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0515	< 0.19					0			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0136	< 1					0			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0117	< 5					0			5
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0368	< 0.1					0			5
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0515	< 0.133					0			5
181.99	Acid Soluble Cd, Other (ppm)	0371	0.0055	0.0030				2			0
181.99	Acid Soluble Cd, Other (ppm)	0220	0.1000	0.0000				2			0
181.99	Acid Soluble Cd, Other (ppm)	0572	< 0.05					2			5
181.99	Acid Soluble Cd, Other (ppm)	0481	< 0.5					2			5
190.00	Water Soluble Cl, Titrimetric (%)	0394	45.52	0.5100	46.90	0.6913	0.2812	16	-2.00	Low	0
190.00	Water Soluble Cl, Titrimetric (%)	0422	45.68	0.7662	46.90	0.6913	0.2812	16	-1.76	Low	0
190.00	Water Soluble Cl, Titrimetric (%)	0553	46.00	1.000	46.90	0.6913	0.2812	16	-1.30	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0029	46.49	0.1510	46.90	0.6913	0.2812	16	-0.59	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0531	46.55	0.1000	46.90	0.6913	0.2812	16	-0.51	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0572	46.78	0.3000	46.90	0.6913	0.2812	16	-0.17	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0537	46.90	0.2300	46.90	0.6913	0.2812	16	-0.01	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0600	46.98	0.3600	46.90	0.6913	0.2812	16	0.12	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0564	47.00	0.2000	46.90	0.6913	0.2812	16	0.14	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0513	47.12	0.1400	46.90	0.6913	0.2812	16	0.32	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0605	47.17	0.0600	46.90	0.6913	0.2812	16	0.39	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				
190.00	Water Soluble Cl, Titrimetric (%)	0619	47.25	0.1000	46.90	0.6913	0.2812	16	0.51	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0444	47.45	0.1000	46.90	0.6913	0.2812	16	0.80	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0563	47.62	0.8100	46.90	0.6913	0.2812	16	1.03	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0405	47.64	0.0300	46.90	0.6913	0.2812	16	1.06	OK	0
190.00	Water Soluble Cl, Titrimetric (%)	0626	47.74	0.2300	46.90	0.6913	0.2812	16	1.21	OK	0
190.99	Water Soluble Cl, Other (%)	0389	45.44	0.1600	46.97	0.9096	0.1234	6	-1.50	Low	0
190.99	Water Soluble Cl, Other (%)	0531	46.55	0.1000	46.97	0.9096	0.1234	6	-0.41	OK	0
190.99	Water Soluble Cl, Other (%)	0029	47.08	0.7500	46.97	0.9096	0.1234	6	0.10	OK	0
190.99	Water Soluble Cl, Other (%)	0619	47.25	0.1000	46.97	0.9096	0.1234	6	0.27	OK	0
190.99	Water Soluble Cl, Other (%)	0611	47.45	0.1000	46.97	0.9096	0.1234	6	0.47	OK	0
190.99	Water Soluble Cl, Other (%)	0626	47.90	0.0400	46.97	0.9096	0.1234	6	0.91	OK	0
190.99	Water Soluble Cl, Other (%)	0136	50.90	2.600	46.97	0.9096	0.1234	6	3.85	High	1
191.30	Acid Soluble Cr, ICP (ppm)	0524	0.0566	0.0072	0.6294	0.6154	0.0354	3	-0.93		0
191.30	Acid Soluble Cr, ICP (ppm)	0394	0.5515	0.0590	0.6294	0.6154	0.0354	3	-0.13		0
191.30	Acid Soluble Cr, ICP (ppm)	0605	1.280	0.0400	0.6294	0.6154	0.0354	3	1.06		0
191.30	Acid Soluble Cr, ICP (ppm)	0626	< 5		0.6294	0.6154	0.0354	3			5
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0220	0.8650	0.0300				1			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0405	< 1					1			5
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0515	3.466	0.3700				1			0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0136	< 2.5					1			5
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0117	< 5					1			5
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0515	2.413	3.730				1			0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0368	< 0.1					1			5
191.99	Acid Soluble Cr, Other (ppm)	0371	0.4585	0.0270	0.9478	0.4238	0.2257	3	-1.15		0
191.99	Acid Soluble Cr, Other (ppm)	0572	1.185	0.2500	0.9478	0.4238	0.2257	3	0.56		0
191.99	Acid Soluble Cr, Other (ppm)	0220	1.200	0.4000	0.9478	0.4238	0.2257	3	0.59		0
191.99	Acid Soluble Cr, Other (ppm)	0481	< 20		0.9478	0.4238	0.2257	3			5
202.30	Acid Soluble Co, ICP (ppm)	0524	0.2409	0.0767				2			0
202.30	Acid Soluble Co, ICP (ppm)	0542	0.2785	0.0530				2			0
202.30	Acid Soluble Co, ICP (ppm)	0605	< 1.25					2			5
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0220	< 0.1					0			5
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0405	< 1					0			5
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0515	< 0.26					0			5
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0136	< 2.5					0			5
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0117	< 5					0			5
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0368	< 0.1					0			5
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0515	< 0.139					0			5
202.99	Acid Soluble Co, Other (ppm)	0255	7.134	1.851				1			0
202.99	Acid Soluble Co, Other (ppm)	0220	< 0.1					1			5
202.99	Acid Soluble Co, Other (ppm)	0572	< 0.62					1			5
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0035	0.0004	0.0003				1			0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0255	0.0000	0.0000				1			4
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0371	0.0005	0.0010				1			4

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				
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0354	< 0.01					1			5
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0405	< 0.0002					0			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0515	0.0003	0.0001				1			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0136	< 0.0002					1			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0394	< 0.0002					1			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0117	< 0.0025					1			5
221.99	Acid Soluble Cu, Other (%)	0515	0.0004	0.0002				1			0
221.99	Acid Soluble Cu, Other (%)	0368	0.0000	0.0000				1			4
221.99	Acid Soluble Cu, Other (%)	0542	< 0.0002					1			5
221.99	Acid Soluble Cu, Other (%)	0481	< 0.01					1			5
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0371	0.0170	0.0080	0.0555	0.0338	0.0075	3	-1.14		0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0035	0.0695	0.0070	0.0555	0.0338	0.0075	3	0.41		0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0354	0.0800	0.0000	0.0555	0.0338	0.0075	3	0.73		0
241.99	Acid Soluble Fe, Other (%)	0572	0.0655	0.0030	0.0719	0.0089	0.0017	3	-0.72		0
241.99	Acid Soluble Fe, Other (%)	0524	0.0682	0.0002	0.0719	0.0089	0.0017	3	-0.42		0
241.99	Acid Soluble Fe, Other (%)	0542	0.0820	0.0020	0.0719	0.0089	0.0017	3	1.14		0
251.30	Acid Soluble Pb, ICP (ppm)	0394	0.2245	0.0310				2			0
251.30	Acid Soluble Pb, ICP (ppm)	0524	0.2659	0.0812				2			0
251.30	Acid Soluble Pb, ICP (ppm)	0255	0.0000	0.0000				2			4
251.30	Acid Soluble Pb, ICP (ppm)	0626	< 5					2			5
251.30	Acid Soluble Pb, ICP (ppm)	0605	< 6.25					2			5
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0220	0.5500	0.1000				1			0
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0405	< 4					1			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0515	1.375	0.2480				1			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0136	< 3					1			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0117	< 5					1			5
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0515	< 0.216					0			5
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0368	< 0.7					0			5
251.99	Acid Soluble Pb, Other (ppm)	0572	0.2550	0.0100				2			0
251.99	Acid Soluble Pb, Other (ppm)	0220	0.8500	0.1000				2			0
251.99	Acid Soluble Pb, Other (ppm)	0481	< 1					2			5
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0035	0.0005	0.0000				1			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0354	< 0.01					1			5
261.32	Acid Soluble Mn, ICP, test portion inorganic 965.09 (%)	0371	0.0010	0.0000				1			0
261.99	Acid Soluble Mn, Other (%)	0524	0.0005	0.0000	0.0005	0.0000	0.0001	3	-1.15		0
261.99	Acid Soluble Mn, Other (%)	0542	0.0006	0.0001	0.0005	0.0000	0.0001	3	0.58		0
261.99	Acid Soluble Mn, Other (%)	0572	0.0006	0.0001	0.0005	0.0000	0.0001	3	0.58		0
281.00	Acid Soluble Hg, AA (ppm)	0481	< 0.5					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0371	0.0050	0.0020				1			0
281.30	Acid Soluble Hg, ICP (ppm)	0515	< 0.1					1			5
281.30	Acid Soluble Hg, ICP (ppm)	0605	< 1.25					1			5
281.30	Acid Soluble Hg, ICP (ppm)	0405	< 2					1			5
281.99	Acid Soluble Hg, Other (ppm)	0524	0.0004	0.0002				1			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				
281.99	Acid Soluble Hg, Other (ppm)	0572	< 0.009					1			5
281.99	Acid Soluble Hg, Other (ppm)	0220	< 0.01					1			5
281.99	Acid Soluble Hg, Other (ppm)	0009	< 0.044					1			5
281.99	Acid Soluble Hg, Other (ppm)	0086	< 0.14					1			5
289.30	Acid Soluble Mo, ICP (ppm)	0542	0.1355	0.0950				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	< 0.3					0			5
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0405	< 1					0			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0515	< 0.23					0			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0136	< 2.5					0			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0117	< 5					0			5
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0368	0.1000	0.2000				0			4
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0515	< 0.178					0			5
289.99	Acid Soluble Mo, Other (ppm)	0220	< 0.3					0			5
291.30	Acid Soluble Ni, ICP (ppm)	0542	0.3800	0.1140	0.5158	0.1356	0.1615	4	-1.00		0
291.30	Acid Soluble Ni, ICP (ppm)	0394	0.4265	0.0750	0.5158	0.1356	0.1615	4	-0.66		0
291.30	Acid Soluble Ni, ICP (ppm)	0371	0.5865	0.1970	0.5158	0.1356	0.1615	4	0.52		0
291.30	Acid Soluble Ni, ICP (ppm)	0605	0.6700	0.2600	0.5158	0.1356	0.1615	4	1.14		0
291.30	Acid Soluble Ni, ICP (ppm)	0626	< 5		0.5158	0.1356	0.1615	4			5
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0220	1.300	0.4000				1			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0405	< 1					1			5
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0515	< 0.26					0			5
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0136	< 2.5					0			5
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0117	< 5					0			5
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0515	< 0.18					0			5
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0368	< 0.2					0			5
291.99	Acid Soluble Ni, Other (ppm)	0220	1.500	0.6000				1			0
291.99	Acid Soluble Ni, Other (ppm)	0255	0.0000	0.0000				1			4
301.30	Acid Soluble Se, ICP (ppm)	0524	0.0149	0.0041				1			0
301.30	Acid Soluble Se, ICP (ppm)	0605	< 6.25					1			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0220	0.3350	0.0300				1			0
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0086	< 0.14					1			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0405	< 10					1			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0515	2.671	0.0960				1			0
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0515	< 0.226					0			5
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0368	< 1.2					0			5
301.99	Acid Soluble Se, Other (ppm)	0220	0.2000	0.0000				1			0
301.99	Acid Soluble Se, Other (ppm)	0255	0.0000	0.0000				1			4
301.99	Acid Soluble Se, Other (ppm)	0481	< 0.5					1			5
311.00	Sodium, AA (%)	0405	1.049	0.0170				1			0
311.30	Sodium, Flame Photometric (%)	0513	1.030	0.0200	1.209	0.1933	0.0425	4	-0.92		0
311.30	Sodium, Flame Photometric (%)	0626	1.055	0.0100	1.209	0.1933	0.0425	4	-0.80		0
311.30	Sodium, Flame Photometric (%)	0531	1.350	0.1000	1.209	0.1933	0.0425	4	0.73		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				
311.30	Sodium, Flame Photometric (%)	0537	1.400	0.0400	1.209	0.1933	0.0425	4	0.99		0
311.32	Sodium, ICP, 2006.03 test portion (%)	0444	1.000	0.0200				1			0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0515	0.9460	0.0711	1.053	0.0986	0.0345	8	-0.99	OK	0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0043	0.9940	0.0600	1.053	0.0986	0.0345	8	-0.55	OK	0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0394	0.9958	0.0107	1.053	0.0986	0.0345	8	-0.53	OK	0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0117	1.018	0.0141	1.053	0.0986	0.0345	8	-0.33	OK	0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0035	1.020	0.0200	1.053	0.0986	0.0345	8	-0.31	OK	0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	1.112	0.0218	1.053	0.0986	0.0345	8	0.55	OK	0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0037	1.138	0.0439	1.053	0.0986	0.0345	8	0.79	OK	0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0136	1.200	0.0000	1.053	0.0986	0.0345	8	1.36	High	0
311.99	Sodium, Other (%)	0611	0.5200	0.0000	1.024	0.0645	0.0461	12	-7.81	Low	0
311.99	Sodium, Other (%)	0572	0.9820	0.0020	1.024	0.0645	0.0461	12	-0.65	OK	0
311.99	Sodium, Other (%)	0255	0.9865	0.0390	1.024	0.0645	0.0461	12	-0.58	OK	0
311.99	Sodium, Other (%)	0542	0.9905	0.0230	1.024	0.0645	0.0461	12	-0.52	OK	0
311.99	Sodium, Other (%)	0368	0.9968	0.0730	1.024	0.0645	0.0461	12	-0.42	OK	0
311.99	Sodium, Other (%)	0481	1.010	0.0200	1.024	0.0645	0.0461	12	-0.22	OK	0
311.99	Sodium, Other (%)	0389	1.015	0.0100	1.024	0.0645	0.0461	12	-0.14	OK	0
311.99	Sodium, Other (%)	0515	1.030	0.1273	1.024	0.0645	0.0461	12	0.10	OK	0
311.99	Sodium, Other (%)	0354	1.045	0.0700	1.024	0.0645	0.0461	12	0.32	OK	0
311.99	Sodium, Other (%)	0605	1.065	0.0500	1.024	0.0645	0.0461	12	0.63	OK	0
311.99	Sodium, Other (%)	0531	1.350	0.1000	1.024	0.0645	0.0461	12	5.05	High	0
311.99	Sodium, Other (%)	0485	2.085	0.0100	1.024	0.0645	0.0461	12	16.44	High	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0035	0.0004	0.0001				2			0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0255	0.0015	0.0010				2			0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0371	0.0000	0.0000				2			4
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0354	< 0.01					2			5
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0405	< 0.0003					0			5
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0515	0.0002	0.0000				1			0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0394	< 0.0002					1			5
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0136	< 0.0003					1			5
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0117	< 0.0025					1			5
321.99	Acid Soluble Zn, Other (%)	0368	0.0000	0.0000				0			4
321.99	Acid Soluble Zn, Other (%)	0542	< 0.0002					0			5
321.99	Acid Soluble Zn, Other (%)	0481	< 0.01					0			5

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