

Method PT For All Labs
 Sample # 241111
 Gypsum

Magruder Fertilizer Proficiency Testing Program
 Regular PT Scheme
 Statistical Summary

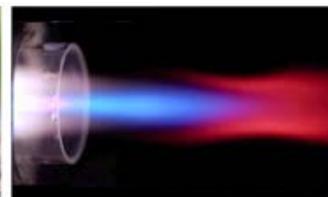
Methods: 94
 # Labs Reporting: 64
 Issue Date : 12/31/2024

Method Code	Analyte & Method Sample # 241111	# 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
010.12	Total N, Salicylic (%)	1		0.5690									
010.60	Total N, Combustion (%)	4	4	0.5973	0.0363	0.5973	0.4900	0.0363	0.0227	6.07%	0.17	0.0073	4.32%
010.99	Total N, Other (%)	1		0.5647									
020.50	Total P2O5, ICP (%)	5	2	0.0278	0.0410	0.0144		0.0079	0.0070	55.00%		0.0012	7.57%
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext.	2	2	0.0120	0.0028								
050.50	Soluble K2O, ICP (Oxalate) (%)	1		0.1145									
050.51	Soluble K2O, ICP (Citrate) (%)	1		0.3400									
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	1		0.3380									
050.99	Soluble K2O, Other (%)	3	3	0.0630	0.0147	0.0630	0.4100	0.0147	0.0106	23.34%	0.08	0.0036	6.06%
060.10	Water (Free), Vacuum Desiccation (%)	1		0.8721									
060.99	Water (Free), Other (%)	1		16.93									
101.00	Acid Soluble Ca, AA, inorganic 965.09 (21%)	4	4	21.18	0.3717	21.18	1.0000	0.3717	0.2323	1.76%	0.87	0.3089	2.17%
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	14	14	21.27	1.261	21.28	1.0000	1.420	0.4742	6.67%	3.31	0.3633	2.17%
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (21%)	4	4	21.55	1.180	21.55	1.0000	1.180	0.7378	5.48%	2.75	0.2368	2.15%
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	17	16	21.18	1.161	21.09	1.0000	1.063	0.3323	5.04%	2.48	0.3248	2.18%
101.70	Acid Soluble Ca, Titrimetric (21%)	3	3	21.00	0.3714	21.00	1.0000	0.3714	0.2680	1.77%	0.87	0.5167	2.18%
101.99	Acid Soluble Ca, Other (21%)	19	18	20.63	2.647	21.26	1.0000	0.8367	0.2465	3.94%	1.95	0.2916	2.17%
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	4	4	0.1025	0.0054	0.1025	0.2051	0.0054	0.0034	5.31%	0.06	0.0120	5.64%
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	3	3	0.0988	0.0467	0.0988	0.2049	0.0467	0.0337	47.28%	0.53	0.0099	5.67%
121.99	Acid Soluble Mg, Other (%)	3	3	0.1125	0.0167	0.1125	0.2056	0.0167	0.0121	14.86%	0.19	0.0054	5.56%
143.00	Elemental S, Gravimetric Sulfur - carbon disulfide soluble sulfu	2	1	0.2810	0.3833								
143.99	Elemental S, Other (%)	6	6	15.82	1.606	15.82		1.821	0.9292	11.51%		0.3828	2.51%
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	10	9	14.16	5.346	15.91		1.878	0.7824	11.80%		0.0701	2.51%
145.99	Sulfate S, HCl soluble, Other (%)	4	4	13.37	6.258	13.37		6.258	3.911	46.81%		0.3275	2.71%
148.00	Total S, Combustion (17%)	5	5	14.98	4.020	14.98	0.9490	4.020	2.247	26.84%	9.87	0.7125	2.58%
148.01	Total S, Gravimetric - sulfate and elemental (17%)	11	11	16.65	0.5523	16.65	1.0000	0.6263	0.2360	3.76%	1.46	0.1623	2.45%
148.07	Total S, ICP, test portion as in 2017.02 (17%)	15	15	16.30	0.8988	16.38	1.0000	0.8230	0.2656	5.02%	1.92	0.2111	2.47%
148.99	Total S, Other (17%)	14	13	16.34	2.098	16.90	1.0000	0.3097	0.1074	1.83%	0.72	0.2081	2.43%
149.04	S - HNO3 soluble, ICP (%)	5	5	16.01	3.196	16.01		3.196	1.787	19.96%		0.2834	2.50%

Method Code	Analyte & Method Sample # 241111	# 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
149.99	S - HNO3 soluble, Other (%)	1		17.30									
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	2.214	3.501	16.01		3.196	3.995	19.96%		0.0400	10.54%
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	3	2	1.249	1.518	0.3730		0.1032	0.0913	27.68%		0.0620	18.56%
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	3	1	8.813	14.41	0.3730		0.1032	0.1290	27.68%		0.0310	18.56%
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	2	1	1.697	1.835								
151.99	Acid Soluble As, Other (ppm)	2	1	0.4000	0.1414								
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	2	1	0.0055	0.0064								
165.99	Acid Soluble B, Other (%)	4	3	0.0052	0.0055	0.0036	0.0035	0.0055	0.0040	152.85%	3.64	0.0001	9.32%
181.30	Acid Soluble Cd, ICP (ppm)	5	2	0.2896	0.4072	0.0991		0.0206	0.0183	20.84%		0.0027	22.00%
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	2	1	0.5625	0.6187								
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	3	0	0.3967	0.5310	0.0991		0.0206		20.84%		0.0010	22.00%
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	2	1	0.1165	0.0233								
181.99	Acid Soluble Cd, Other (ppm)	2	1	0.3100	0.2687								
191.30	Acid Soluble Cr, ICP (ppm)	5	4	8.751	2.861	9.689		2.247	1.404	23.19%		0.7511	11.37%
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	2	2	12.60	1.273								
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	3	3	12.84	8.407	12.84		8.407	6.067	65.50%		0.9107	10.89%
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	2	2	8.542	1.403								
191.99	Acid Soluble Cr, Other (ppm)	2	1	15.48	6.399								
202.30	Acid Soluble Co, ICP (ppm)	4	3	3.943	0.7961	3.591	2.0772	0.4536	0.3273	12.63%	0.51	0.3057	13.20%
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	2	2	2.375	0.8839								
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	4	3	2.999	0.6319	3.165	1.9496	0.6579	0.4748	20.78%	0.79	0.3215	13.45%
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	2	1	0.4945	0.5028								
202.99	Acid Soluble Co, Other (ppm)	2	2	4.448	3.391								
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	5	1	0.0022	0.0044	4.448	0.4498	3.391	4.239	76.24%	17.57	0.0220	3.20%
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	1		0.0002									
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	4	2	0.0002	0.0001	0.0003	0.0050	0.0001	0.0001	28.28%	0.03	0.0000	13.94%
221.99	Acid Soluble Cu, Other (%)	5	2	0.0052	0.0069	0.0004	0.0050	0.0001	0.0001	28.28%	0.05	0.0003	13.11%
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	3	3	0.0858	0.0043	0.0858	0.0136	0.0043	0.0031	5.02%	0.74	0.0077	5.79%
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	3	3	0.1024	0.0093	0.1024	0.0152	0.0093	0.0067	9.13%	1.43	0.0189	5.64%
241.99	Acid Soluble Fe, Other (%)	3	3	0.0825	0.0159	0.0825	0.0132	0.0159	0.0115	19.25%	2.79	0.0064	5.82%
251.30	Acid Soluble Pb, ICP (ppm)	5	2	2.471	2.923	0.5522		0.1934	0.1709	35.01%		0.0372	17.49%
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	2	1	2.365	2.312								
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	3	2	1.179	1.600	0.2682		0.3790	0.3350	141.34%		0.0116	19.50%
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	1		0.7000									
251.99	Acid Soluble Pb, Other (ppm)	2	1	0.9150	0.1202								
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	3	2	0.0053	0.0041	0.0030	0.0053	0.0000	0.0000	1.19%	0.02	0.0003	9.60%
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	2	2	0.0041	0.0002								
261.99	Acid Soluble Mn, Other (%)	2	2	0.0030	0.0004								
281.00	Acid Soluble Hg, AA (ppm)	1		0.5000									

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281.30	Acid Soluble Hg, ICP (ppm)	4	0	0.8378	0.9601	0.0030		0.0004		14.14%		0.0000	22.00%
281.99	Acid Soluble Hg, Other (ppm)	4	4	0.2153	0.0429	0.2153		0.0429	0.0268	19.91%		0.0127	20.16%
289.30	Acid Soluble Mo, ICP (ppm)	5	4	2.825	4.061	1.031	1.3094	0.7372	0.4608	71.47%	1.31	0.6237	15.92%
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	2	2	0.6725	0.4632								
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	3	0	0.9100	1.382	0.6725	1.2018	0.4632		68.87%	0.90	0.0550	16.98%
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	1		0.8500									
289.99	Acid Soluble Mo, Other (ppm)	1		0.2500									
291.30	Acid Soluble Ni, ICP (ppm)	6	5	3.755	0.8481	3.506		0.6590	0.3684	18.79%		0.1521	13.24%
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	2	2	5.375	1.591								
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	4	4	6.756	5.443	6.756		5.443	3.402	80.57%		2.167	12.00%
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	2	2	3.143	0.6258								
291.99	Acid Soluble Ni, Other (ppm)	2	1	1.775	2.510								
301.00	Acid Soluble Se, AA, test portion 2006.03 modified w/dual acid	1		2.950									
301.30	Acid Soluble Se, ICP (ppm)	2	1	4.530	2.432								
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	3	2	5.188	4.170	2.782		0.2160	0.1909	7.76%		0.1165	13.71%
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	2	1	3.126	4.406								
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	2	2	4.273	1.665								
301.99	Acid Soluble Se, Other (ppm)	3	2	1.623	1.489	2.435		0.6930	0.6125	28.46%		0.1700	13.99%
311.32	Sodium, ICP, 2006.03 test portion (%)	1		0.0020									
311.33	Sodium, ICP, test portion as in 2017.02 (%)	2	1	0.0138	0.0053								
311.99	Sodium, Other (%)	2	2	0.0120	0.0113								
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	4	3	0.0038	0.0042	0.0017	0.0052	0.0005	0.0003	26.65%	0.21	0.0000	10.41%
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	2	2	0.0011	0.0001								
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	5	5	0.0028	0.0041	0.0028	0.0053	0.0041	0.0023	148.33%	1.80	0.0001	9.71%
321.99	Acid Soluble Zn, Other (%)	5	4	0.0034	0.0039	0.0018	0.0052	0.0014	0.0009	81.32%	0.64	0.0025	10.40%

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 # 241111

Regular PT Scheme

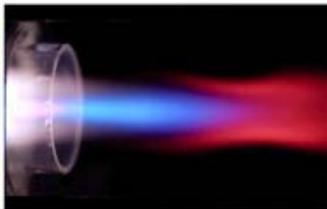
Gypsum

Method Precision Report

Issue Date : 12/31/2024

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
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	14	13	21.44	1.136	1.111	0.3369	1.161	5.18%	1.57%	5.41%	3.446
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	17	15	21.03	1.138	1.118	0.2990	1.157	5.32%	1.42%	5.50%	3.871
101.99	Acid Soluble Ca, Other (21%)	19	17	21.13	1.680	1.664	0.3302	1.696	7.87%	1.56%	8.03%	5.138
143.99	Elemental S, Other (%)	6	6	15.82	1.606	1.587	0.3426	1.624	10.04%	2.17%	10.27%	4.740
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	10	8	13.59	5.909	5.909	0.0457	5.909	43.47%	0.34%	43.48%	129.3
148.01	Total S, Gravimetric - sulfate and elemental (17%)	11	10	16.66	0.5819	0.5604	0.2214	0.6026	3.36%	1.33%	3.62%	2.721
148.07	Total S, ICP, test portion as in 2017.02 (17%)	15	15	16.30	0.8988	0.8875	0.2010	0.9100	5.45%	1.23%	5.58%	4.526
148.99	Total S, Other (17%)	14	12	16.91	0.4771	0.4670	0.1381	0.4870	2.76%	0.82%	2.88%	3.527
291.30	Acid Soluble Ni, ICP (ppm)	6	5	3.506	0.6590	0.6517	0.1380	0.6662	18.59%	3.94%	19.00%	4.827

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



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 94

Sample # 241111

Regular PT Scheme

Labs Reporting: 64

Gypsum

Lab Values

Issue Date : 12/31/2024

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				
010.12	Total N, Salicylic (%)	0568	0.5690	0.0000				1			0
010.60	Total N, Combustion (%)	0527	0.5620	0.0180	0.5973	0.0363	0.0073	4	-0.97		0
010.60	Total N, Combustion (%)	0422	0.5700	0.0000	0.5973	0.0363	0.0073	4	-0.75		0
010.60	Total N, Combustion (%)	0354	0.6265	0.0010	0.5973	0.0363	0.0073	4	0.81		0
010.60	Total N, Combustion (%)	0588	0.6305	0.0030	0.5973	0.0363	0.0073	4	0.92		0
010.99	Total N, Other (%)	0524	0.5647	0.0152				1			0
020.50	Total P2O5, ICP (%)	0524	0.0088	0.0012				2			0
020.50	Total P2O5, ICP (%)	0472	0.0200	0.0000				2			0
020.50	Total P2O5, ICP (%)	0422	0.0000	0.0000				2			4
020.50	Total P2O5, ICP (%)	0527	< 0.01					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				2			0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (0354	0.0140	0.0060				2			0
050.50	Soluble K2O, ICP (Oxalate) (%)	0422	0.1145	0.0030				1			0
050.51	Soluble K2O, ICP (Citrate) (%)	0568	0.3400	0.0000				1			0
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	0354	0.3380	0.5440				1			0
050.99	Soluble K2O, Other (%)	0524	0.0539	0.0005	0.0630	0.0147	0.0036	3	-0.62		0
050.99	Soluble K2O, Other (%)	0527	0.0553	0.0023	0.0630	0.0147	0.0036	3	-0.53		0
050.99	Soluble K2O, Other (%)	0588	0.0800	0.0080	0.0630	0.0147	0.0036	3	1.15		0
060.10	Water (Free), Vacuum Desiccation (%)	0510	0.8721	0.0013				1			0
060.99	Water (Free), Other (%)	0513	16.93	0.0500				1			0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (21%)	0553	20.78	0.4900	21.18	0.3717	0.3089	4	-1.09		0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (21%)	0510	20.96	0.0357	21.18	0.3717	0.3089	4	-0.59		0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (21%)	0073	21.44	0.2100	21.18	0.3717	0.3089	4	0.69		0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (21%)	0485	21.55	0.5000	21.18	0.3717	0.3089	4	1.00		0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0377	19.08	1.510	21.28	1.420	0.3633	14	-1.55	Low	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0255	19.59	1.310	21.28	1.420	0.3633	14	-1.19	Low	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0568	19.70	0.0000	21.28	1.420	0.3633	14	-1.11	Low	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0451	20.92	0.3100	21.28	1.420	0.3633	14	-0.25	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0513	20.94	0.1200	21.28	1.420	0.3633	14	-0.24	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0324	20.95	0.7000	21.28	1.420	0.3633	14	-0.23	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				
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0354	21.00	0.2000	21.28	1.420	0.3633	14	-0.19	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0035	21.45	0.5000	21.28	1.420	0.3633	14	0.12	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0422	21.47	0.2100	21.28	1.420	0.3633	14	0.13	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0619	21.60	0.4000	21.28	1.420	0.3633	14	0.23	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0444	22.04	0.1900	21.28	1.420	0.3633	14	0.53	OK	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0291	22.77	0.0100	21.28	1.420	0.3633	14	1.05	High	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0049	23.05	0.1900	21.28	1.420	0.3633	14	1.25	High	0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (21%)	0234	23.27	0.2600	21.28	1.420	0.3633	14	1.40	High	0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (21%)	0220	20.25	0.3000	21.55	1.180	0.2368	4	-1.10		0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (21%)	0423	21.28	0.2870	21.55	1.180	0.2368	4	-0.23		0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (21%)	0095	21.56	0.1700	21.55	1.180	0.2368	4	0.01		0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (21%)	0452	23.11	0.1900	21.55	1.180	0.2368	4	1.32		0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0102	18.70	0.2100	21.09	1.063	0.3248	16	-2.25	Low	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0055	20.05	0.1550	21.09	1.063	0.3248	16	-0.98	Low	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0040	20.08	0.7200	21.09	1.063	0.3248	16	-0.95	Low	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0494	20.11	0.5699	21.09	1.063	0.3248	16	-0.93	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0037	20.47	0.5645	21.09	1.063	0.3248	16	-0.59	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0136	20.75	0.1000	21.09	1.063	0.3248	16	-0.32	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0292	20.79	0.0700	21.09	1.063	0.3248	16	-0.29	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0177	20.82	0.0369	21.09	1.063	0.3248	16	-0.25	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0527	21.14	0.0053	21.09	1.063	0.3248	16	0.04	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0543	21.35	0.0300	21.09	1.063	0.3248	16	0.24	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0394	21.53	0.0310	21.09	1.063	0.3248	16	0.41	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0025	21.75	1.500	21.09	1.063	0.3248	16	0.62	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0588	21.91	0.5000	21.09	1.063	0.3248	16	0.77	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0421	21.98	1.080	21.09	1.063	0.3248	16	0.84	OK	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0472	22.58	0.1300	21.09	1.063	0.3248	16	1.39	High	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0521	23.28	0.0000	21.09	1.063	0.3248	16	2.05	High	0
101.33	Acid Soluble Ca, ICP, 2017.02 (21%)	0515	22.86	2.190	21.09	1.063	0.3248	16	1.66	High	1
101.70	Acid Soluble Ca, Titrimetric (21%)	0481	20.61	1.280	21.00	0.3714	0.5167	3	-1.05		0
101.70	Acid Soluble Ca, Titrimetric (21%)	0626	21.04	0.1700	21.00	0.3714	0.5167	3	0.10		0
101.70	Acid Soluble Ca, Titrimetric (21%)	0564	21.35	0.1000	21.00	0.3714	0.5167	3	0.95		0
101.99	Acid Soluble Ca, Other (21%)	0542	11.88	3.964	21.26	0.8367	0.2916	18	-11.22	Low	0
101.99	Acid Soluble Ca, Other (21%)	0042	15.35	1.530	21.26	0.8367	0.2916	18	-7.07	Low	0
101.99	Acid Soluble Ca, Other (21%)	0481	20.08	0.1700	21.26	0.8367	0.2916	18	-1.42	Low	0
101.99	Acid Soluble Ca, Other (21%)	0029	20.62	0.0200	21.26	0.8367	0.2916	18	-0.77	OK	0
101.99	Acid Soluble Ca, Other (21%)	0531	20.85	0.1000	21.26	0.8367	0.2916	18	-0.49	OK	0
101.99	Acid Soluble Ca, Other (21%)	0537	20.87	0.1400	21.26	0.8367	0.2916	18	-0.47	OK	0
101.99	Acid Soluble Ca, Other (21%)	0635	20.92	0.0600	21.26	0.8367	0.2916	18	-0.41	OK	0
101.99	Acid Soluble Ca, Other (21%)	0561	21.29	0.1800	21.26	0.8367	0.2916	18	0.03	OK	0
101.99	Acid Soluble Ca, Other (21%)	0605	21.51	0.0980	21.26	0.8367	0.2916	18	0.29	OK	0
101.99	Acid Soluble Ca, Other (21%)	0368	21.55	0.6007	21.26	0.8367	0.2916	18	0.34	OK	0
101.99	Acid Soluble Ca, Other (21%)	0619	21.60	0.4000	21.26	0.8367	0.2916	18	0.40	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				
101.99	Acid Soluble Ca, Other (21%)	0584	21.61	0.3300	21.26	0.8367	0.2916	18	0.41	OK	0
101.99	Acid Soluble Ca, Other (21%)	0517	21.70	0.2000	21.26	0.8367	0.2916	18	0.52	OK	0
101.99	Acid Soluble Ca, Other (21%)	0023	21.71	0.1180	21.26	0.8367	0.2916	18	0.53	OK	0
101.99	Acid Soluble Ca, Other (21%)	0231	21.90	0.0000	21.26	0.8367	0.2916	18	0.76	OK	0
101.99	Acid Soluble Ca, Other (21%)	0389	21.90	0.2000	21.26	0.8367	0.2916	18	0.76	OK	0
101.99	Acid Soluble Ca, Other (21%)	0494	22.09	0.2970	21.26	0.8367	0.2916	18	0.99	OK	0
101.99	Acid Soluble Ca, Other (21%)	0027	23.70	0.6700	21.26	0.8367	0.2916	18	2.91	High	0
101.99	Acid Soluble Ca, Other (21%)	0515	20.86	8.040	21.26	0.8367	0.2916	18	-0.48	OK	1
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0422	0.0980	0.0000	0.1025	0.0054	0.0120	4	-0.83		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0568	0.0990	0.0000	0.1025	0.0054	0.0120	4	-0.64		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0035	0.1030	0.0120	0.1025	0.0054	0.0120	4	0.09		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0354	0.1100	0.0000	0.1025	0.0054	0.0120	4	1.38		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0472	0.0450	0.0100	0.0988	0.0467	0.0099	3	-1.15		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0527	0.1224	0.0010	0.0988	0.0467	0.0099	3	0.51		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0515	0.1290	0.0186	0.0988	0.0467	0.0099	3	0.65		0
121.99	Acid Soluble Mg, Other (%)	0524	0.0955	0.0007	0.1125	0.0167	0.0054	3	-1.02		0
121.99	Acid Soluble Mg, Other (%)	0542	0.1132	0.0049	0.1125	0.0167	0.0054	3	0.04		0
121.99	Acid Soluble Mg, Other (%)	0515	0.1289	0.0105	0.1125	0.0167	0.0054	3	0.98		0
143.00	Elemental S, Gravimetric Sulfur - carbon disulfide soluble sulfur	0405	0.5520	0.0280				1			0
143.00	Elemental S, Gravimetric Sulfur - carbon disulfide soluble sulfur	0485	< 0.01					1			5
143.99	Elemental S, Other (%)	0537	13.80	0.1900	15.82	1.821	0.3828	6	-0.99	NA	0
143.99	Elemental S, Other (%)	0531	13.85	0.1000	15.82	1.821	0.3828	6	-0.96	NA	0
143.99	Elemental S, Other (%)	0291	16.41	0.0100	15.82	1.821	0.3828	6	0.29	NA	0
143.99	Elemental S, Other (%)	0255	16.50	0.9800	15.82	1.821	0.3828	6	0.33	NA	0
143.99	Elemental S, Other (%)	0389	16.70	0.0000	15.82	1.821	0.3828	6	0.43	NA	0
143.99	Elemental S, Other (%)	0368	17.65	0.6340	15.82	1.821	0.3828	6	0.89	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0537	4.040	0.1000	15.91	1.878	0.0701	9	-5.83	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0531	4.050	0.1000	15.91	1.878	0.0701	9	-5.83	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0626	15.92	0.0500	15.91	1.878	0.0701	9	0.00	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0027	16.35	0.2900	15.91	1.878	0.0701	9	0.22	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0029	16.50	0.0200	15.91	1.878	0.0701	9	0.29	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0405	16.74	0.0000	15.91	1.878	0.0701	9	0.41	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0561	16.90	0.0100	15.91	1.878	0.0701	9	0.49	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0564	17.24	0.0200	15.91	1.878	0.0701	9	0.66	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0635	17.35	0.1000	15.91	1.878	0.0701	9	0.71	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0485	16.50	0.8000	15.91	1.878	0.0701	9	0.29	NA	1
145.99	Sulfate S, HCl soluble, Other (%)	0531	4.050	0.1000	13.37	6.258	0.3275	4	-1.49		0
145.99	Sulfate S, HCl soluble, Other (%)	0444	15.43	0.1700	13.37	6.258	0.3275	4	0.33		0
145.99	Sulfate S, HCl soluble, Other (%)	0553	16.85	0.9400	13.37	6.258	0.3275	4	0.56		0
145.99	Sulfate S, HCl soluble, Other (%)	0619	17.15	0.1000	13.37	6.258	0.3275	4	0.60		0
148.00	Total S, Combustion (17%)	0131	7.865	2.610	14.98	4.020	0.7125	5	-1.77		0
148.00	Total S, Combustion (17%)	0049	15.81	0.0900	14.98	4.020	0.7125	5	0.21		0
148.00	Total S, Combustion (17%)	0626	16.88	0.0500	14.98	4.020	0.7125	5	0.47		0

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			Value	Range	Rob Mean	Rob SD	Rob R-bar				
148.00	Total S, Combustion (17%)	0451	16.95	0.1000	14.98	4.020	0.7125	5	0.49		0
148.00	Total S, Combustion (17%)	0405	17.40	0.0000	14.98	4.020	0.7125	5	0.60		0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0102	15.80	0.0400	16.65	0.6263	0.1623	11	-1.27	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0073	15.85	0.0400	16.65	0.6263	0.1623	11	-1.20	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0324	16.35	0.9000	16.65	0.6263	0.1623	11	-0.45	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0231	16.38	0.0600	16.65	0.6263	0.1623	11	-0.40	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0029	16.50	0.0200	16.65	0.6263	0.1623	11	-0.22	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0485	16.60	1.000	16.65	0.6263	0.1623	11	-0.08	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0157	16.70	0.2000	16.65	0.6263	0.1623	11	0.07	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0055	17.00	0.2100	16.65	0.6263	0.1623	11	0.51	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0405	17.29	0.0200	16.65	0.6263	0.1623	11	0.96	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0564	17.31	0.0200	16.65	0.6263	0.1623	11	0.99	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (17%)	0584	17.38	0.2800	16.65	0.6263	0.1623	11	1.09	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0515	14.32	0.1600	16.38	0.8230	0.2111	15	-2.51	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0421	14.70	0.4000	16.38	0.8230	0.2111	15	-2.05	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0394	15.38	0.2310	16.38	0.8230	0.2111	15	-1.22	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0494	16.01	0.1509	16.38	0.8230	0.2111	15	-0.46	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0444	16.22	0.1700	16.38	0.8230	0.2111	15	-0.20	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0472	16.22	0.0400	16.38	0.8230	0.2111	15	-0.20	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0177	16.27	0.1864	16.38	0.8230	0.2111	15	-0.14	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0040	16.30	0.4000	16.38	0.8230	0.2111	15	-0.10	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0513	16.69	0.1100	16.38	0.8230	0.2111	15	0.37	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0543	16.74	0.6400	16.38	0.8230	0.2111	15	0.43	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0035	16.85	0.5000	16.38	0.8230	0.2111	15	0.57	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0452	17.15	0.2000	16.38	0.8230	0.2111	15	0.93	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0619	17.15	0.1000	16.38	0.8230	0.2111	15	0.93	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0527	17.22	0.0620	16.38	0.8230	0.2111	15	1.02	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (17%)	0292	17.28	0.0100	16.38	0.8230	0.2111	15	1.08	OK	0
148.99	Total S, Other (17%)	0354	15.85	0.3000	16.90	0.3097	0.2081	13	-3.37	Low	0
148.99	Total S, Other (17%)	0422	16.58	0.0000	16.90	0.3097	0.2081	13	-1.02	OK	0
148.99	Total S, Other (17%)	0494	16.60	0.0996	16.90	0.3097	0.2081	13	-0.97	OK	0
148.99	Total S, Other (17%)	0377	16.68	0.8700	16.90	0.3097	0.2081	13	-0.71	OK	0
148.99	Total S, Other (17%)	0577	16.87	0.0800	16.90	0.3097	0.2081	13	-0.08	OK	0
148.99	Total S, Other (17%)	0136	16.90	0.0000	16.90	0.3097	0.2081	13	0.02	OK	0
148.99	Total S, Other (17%)	0531	16.90	0.2000	16.90	0.3097	0.2081	13	0.02	OK	0
148.99	Total S, Other (17%)	0537	16.92	0.2700	16.90	0.3097	0.2081	13	0.06	OK	0
148.99	Total S, Other (17%)	0220	16.94	0.0600	16.90	0.3097	0.2081	13	0.15	OK	0
148.99	Total S, Other (17%)	0023	17.07	0.3030	16.90	0.3097	0.2081	13	0.56	OK	0
148.99	Total S, Other (17%)	0619	17.15	0.1000	16.90	0.3097	0.2081	13	0.82	OK	0
148.99	Total S, Other (17%)	0605	17.25	0.1020	16.90	0.3097	0.2081	13	1.15	OK	0
148.99	Total S, Other (17%)	0043	17.90	0.3500	16.90	0.3097	0.2081	13	3.23	OK	0
148.99	Total S, Other (17%)	0542	9.219	3.583	16.90	0.3097	0.2081	13	-24.78	Low	1
149.04	S - HNO3 soluble, ICP (%)	0524	10.33	0.5734	16.01	3.196	0.2834	5	-1.78		0

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149.04	S - HNO3 soluble, ICP (%)	0423	17.15	0.0800	16.01	3.196	0.2834	5	0.36		0
149.04	S - HNO3 soluble, ICP (%)	0521	17.27	0.0000	16.01	3.196	0.2834	5	0.39		0
149.04	S - HNO3 soluble, ICP (%)	0619	17.30	0.2000	16.01	3.196	0.2834	5	0.40		0
149.04	S - HNO3 soluble, ICP (%)	0588	18.02	0.2800	16.01	3.196	0.2834	5	0.63		0
149.99	S - HNO3 soluble, Other (%)	0619	17.30	0.2000				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	0.3909	0.0141				1			0
151.30	Acid Soluble As, ICP (ppm)	0255	0.0000	0.0000				1			4
151.30	Acid Soluble As, ICP (ppm)	0605	< 6.25					1			5
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0220	0.3000	0.0000				2			0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0086	0.4460	0.0620				2			0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0405	< 3					2			5
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0515	25.44	2.520				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
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0515	2.995	3.377				1			0
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0368	< 0.4					1			5
151.99	Acid Soluble As, Other (ppm)	0220	0.3000	0.0000				1			0
151.99	Acid Soluble As, Other (ppm)	0481	< 0.5					1			5
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0422	0.0010	0.0000				1			0
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0354	< 0.01					1			5
165.99	Acid Soluble B, Other (%)	0542	0.0004	0.0000	0.0036	0.0055	0.0001	3	-0.58		0
165.99	Acid Soluble B, Other (%)	0524	0.0005	0.0001	0.0036	0.0055	0.0001	3	-0.57		0
165.99	Acid Soluble B, Other (%)	0472	0.0100	0.0000	0.0036	0.0055	0.0001	3	1.15		0
165.99	Acid Soluble B, Other (%)	0527	< 0.01		0.0036	0.0055	0.0001	3			5
181.30	Acid Soluble Cd, ICP (ppm)	0394	0.0845	0.0010				2			0
181.30	Acid Soluble Cd, ICP (ppm)	0524	0.1137	0.0044				2			0
181.30	Acid Soluble Cd, ICP (ppm)	0255	0.0000	0.0000				2			4
181.30	Acid Soluble Cd, ICP (ppm)	0605	< 0.25					2			5
181.30	Acid Soluble Cd, ICP (ppm)	0626	< 1					2			5
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0220	0.1250	0.0100				1			0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0405	< 1					1			5
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0527	< 0.0001					0			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
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0368	0.1000	0.0000				1			0
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0515	< 0.133					1			5
181.99	Acid Soluble Cd, Other (ppm)	0220	0.1200	0.0000				1			0
181.99	Acid Soluble Cd, Other (ppm)	0481	< 0.5					1			5
191.30	Acid Soluble Cr, ICP (ppm)	0524	7.566	0.0253	9.689	2.247	0.7511	4	-0.95		0
191.30	Acid Soluble Cr, ICP (ppm)	0035	8.075	0.6700	9.689	2.247	0.7511	4	-0.72		0
191.30	Acid Soluble Cr, ICP (ppm)	0394	10.84	0.7040	9.689	2.247	0.7511	4	0.51		0
191.30	Acid Soluble Cr, ICP (ppm)	0605	12.28	1.605	9.689	2.247	0.7511	4	1.15		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				
191.30	Acid Soluble Cr, ICP (ppm)	0626	< 5		9.689	2.247	0.7511	4			5
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0220	11.70	0.4000				2			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0405	13.50	1.000				2			0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0136	6.300	0.6000	12.84	8.407	0.9107	3	-0.78		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0527	9.887	0.4721	12.84	8.407	0.9107	3	-0.35		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0515	22.32	1.660	12.84	8.407	0.9107	3	1.13		0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0368	7.550	4.700				2			0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0515	9.535	1.343				2			0
191.99	Acid Soluble Cr, Other (ppm)	0220	10.95	0.1000				1			0
191.99	Acid Soluble Cr, Other (ppm)	0481	< 20					1			5
202.30	Acid Soluble Co, ICP (ppm)	0605	3.084	0.3110	3.591	0.4536	0.3057	3	-1.12		0
202.30	Acid Soluble Co, ICP (ppm)	0524	3.731	0.2710	3.591	0.4536	0.3057	3	0.31		0
202.30	Acid Soluble Co, ICP (ppm)	0542	3.958	0.3350	3.591	0.4536	0.3057	3	0.81		0
202.30	Acid Soluble Co, ICP (ppm)	0626	< 5		3.591	0.4536	0.3057	3			5
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0220	1.750	0.1000				2			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0405	3.000	0.0000				2			0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0527	2.427	0.3607	3.165	0.6579	0.3215	3	-1.12		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0037	3.380	0.0329	3.165	0.6579	0.3215	3	0.33		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0515	3.690	0.5710	3.165	0.6579	0.3215	3	0.80		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0136	< 2.5		3.165	0.6579	0.3215	3			5
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0368	0.8500	0.1000				1			0
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0515	< 0.139					1			5
202.99	Acid Soluble Co, Other (ppm)	0220	2.050	0.1000				2			0
202.99	Acid Soluble Co, Other (ppm)	0255	6.846	0.0220				2			0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0035	0.0003	0.0000				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 (%)	0422	0.0000	0.0000				1			4
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0626	< 0.0005					1			5
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 (%)	0527	0.0002	0.0000				2			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0515	0.0003	0.0000				2			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0136	< 0.0002					2			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0394	< 0.0002					2			5
221.99	Acid Soluble Cu, Other (%)	0524	0.0003	0.0000				2			0
221.99	Acid Soluble Cu, Other (%)	0515	0.0005	0.0003				2			0
221.99	Acid Soluble Cu, Other (%)	0368	0.0000	0.0000				2			4
221.99	Acid Soluble Cu, Other (%)	0481	< 0.01					2			5
221.99	Acid Soluble Cu, Other (%)	0542	< 0.015					2			5
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0035	0.0820	0.0120	0.0858	0.0043	0.0077	3	-0.89		0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0354	0.0850	0.0100	0.0858	0.0043	0.0077	3	-0.19		0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0422	0.0905	0.0010	0.0858	0.0043	0.0077	3	1.08		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0515	0.0920	0.0319	0.1024	0.0093	0.0189	3	-1.12		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				
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0527	0.1052	0.0058	0.1024	0.0093	0.0189	3	0.30		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0472	0.1100	0.0000	0.1024	0.0093	0.0189	3	0.81		0
241.99	Acid Soluble Fe, Other (%)	0524	0.0661	0.0002	0.0825	0.0159	0.0064	3	-1.03		0
241.99	Acid Soluble Fe, Other (%)	0515	0.0835	0.0149	0.0825	0.0159	0.0064	3	0.06		0
241.99	Acid Soluble Fe, Other (%)	0542	0.0978	0.0040	0.0825	0.0159	0.0064	3	0.97		0
251.30	Acid Soluble Pb, ICP (ppm)	0394	0.4155	0.0730				2			0
251.30	Acid Soluble Pb, ICP (ppm)	0524	0.6890	0.0013				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	0.7300	0.1200				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	0.0002	0.0001				2			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0527	0.5362	0.0230				2			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0136	< 3					2			5
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0368	< 0.7					0			5
251.99	Acid Soluble Pb, Other (ppm)	0220	0.8300	0.0600				1			0
251.99	Acid Soluble Pb, Other (ppm)	0481	< 1					1			5
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0035	0.0030	0.0003				2			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0422	0.0030	0.0000				2			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0354	< 0.01					2			5
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0527	0.0040	0.0001				2			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0515	0.0043	0.0004				2			0
261.99	Acid Soluble Mn, Other (%)	0524	0.0027	0.0000				2			0
261.99	Acid Soluble Mn, Other (%)	0542	0.0033	0.0000				2			0
281.00	Acid Soluble Hg, AA (ppm)	0481	< 0.5					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0527	< 0.001					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0515	< 0.1					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)	0086	0.1795	0.0150	0.2153	0.0429	0.0127	4	-0.84		0
281.99	Acid Soluble Hg, Other (ppm)	0626	0.1895	0.0050	0.2153	0.0429	0.0127	4	-0.60		0
281.99	Acid Soluble Hg, Other (ppm)	0524	0.2174	0.0009	0.2153	0.0429	0.0127	4	0.05		0
281.99	Acid Soluble Hg, Other (ppm)	0220	0.2750	0.0300	0.2153	0.0429	0.0127	4	1.39		0
289.30	Acid Soluble Mo, ICP (ppm)	0524	0.1379	0.0612	1.031	0.7372	0.6237	4	-1.21		0
289.30	Acid Soluble Mo, ICP (ppm)	0234	1.000	0.0000	1.031	0.7372	0.6237	4	-0.04		0
289.30	Acid Soluble Mo, ICP (ppm)	0255	1.045	1.270	1.031	0.7372	0.6237	4	0.02		0
289.30	Acid Soluble Mo, ICP (ppm)	0542	1.943	0.5400	1.031	0.7372	0.6237	4	1.24		0
289.30	Acid Soluble Mo, ICP (ppm)	0626	< 10		1.031	0.7372	0.6237	4			5
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0220	0.3450	0.1100				2			0
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0405	1.000	0.0000				2			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0527	< 0.0001					0			5
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0515	< 0.23					0			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				
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0136	< 2.5					0			5
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0368	0.8500	0.1000				1			0
289.99	Acid Soluble Mo, Other (ppm)	0220	0.2500	0.0000				1			0
291.30	Acid Soluble Ni, ICP (ppm)	0035	2.525	0.3500	3.506	0.6590	0.1521	5	-1.30		0
291.30	Acid Soluble Ni, ICP (ppm)	0394	3.339	0.2350	3.506	0.6590	0.1521	5	-0.22		0
291.30	Acid Soluble Ni, ICP (ppm)	0524	3.482	0.0227	3.506	0.6590	0.1521	5	-0.03		0
291.30	Acid Soluble Ni, ICP (ppm)	0605	3.926	0.0610	3.506	0.6590	0.1521	5	0.56		0
291.30	Acid Soluble Ni, ICP (ppm)	0542	4.261	0.0920	3.506	0.6590	0.1521	5	1.00		0
291.30	Acid Soluble Ni, ICP (ppm)	0626	< 5		3.506	0.6590	0.1521	5			5
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0220	4.250	0.1000				2			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0405	6.500	3.000				2			0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0527	3.463	0.0858	6.756	5.443	2.167	4	-0.60		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0136	3.650	0.3000	6.756	5.443	2.167	4	-0.57		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0037	5.059	1.083	6.756	5.443	2.167	4	-0.31		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0515	14.85	7.200	6.756	5.443	2.167	4	1.49		0
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0368	2.700	0.0000				2			0
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0515	3.585	2.274				2			0
291.99	Acid Soluble Ni, Other (ppm)	0220	3.550	0.1000				1			0
291.99	Acid Soluble Ni, Other (ppm)	0255	0.0000	0.0000				1			4
301.00	Acid Soluble Se, AA, test portion 2006.03 modified w/dual acid	0626	2.950	0.1000				1			0
301.30	Acid Soluble Se, ICP (ppm)	0524	2.810	0.1179				1			0
301.30	Acid Soluble Se, ICP (ppm)	0605	< 6.25					1			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0086	2.630	0.1030				2			0
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0220	2.935	0.1300				2			0
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0405	< 10					2			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0515	6.242	0.3690				1			0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0527	< 0.01					1			5
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0515	3.096	0.4870				2			0
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0368	5.450	1.700				2			0
301.99	Acid Soluble Se, Other (ppm)	0481	1.945	0.2500				2			0
301.99	Acid Soluble Se, Other (ppm)	0220	2.925	0.0900				2			0
301.99	Acid Soluble Se, Other (ppm)	0255	0.0000	0.0000				2			4
311.32	Sodium, ICP, 2006.03 test portion (%)	0422	0.0020	0.0000				1			0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0035	0.0175	0.0090				1			0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	< 0.01					1			5
311.99	Sodium, Other (%)	0542	0.0041	0.0003				2			0
311.99	Sodium, Other (%)	0354	0.0200	0.0200				2			0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0035	0.0012	0.0000	0.0017	0.0005	0.0000	3	-1.15		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0255	0.0020	0.0000	0.0017	0.0005	0.0000	3	0.58		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0422	0.0020	0.0000	0.0017	0.0005	0.0000	3	0.58		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0354	< 0.01		0.0017	0.0005	0.0000	3			5
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0405	0.0010	0.0001				2			0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0220	0.0012	0.0001				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				
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0394	0.0002	0.0000	0.0028	0.0041	0.0001	5	-0.63		0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0136	0.0010	0.0001	0.0028	0.0041	0.0001	5	-0.44		0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0515	0.0012	0.0001	0.0028	0.0041	0.0001	5	-0.39		0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0527	0.0015	0.0001	0.0028	0.0041	0.0001	5	-0.32		0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0472	0.0100	0.0000	0.0028	0.0041	0.0001	5	1.78		0
321.99	Acid Soluble Zn, Other (%)	0542	0.0007	0.0001	0.0018	0.0014	0.0025	4	-0.77		0
321.99	Acid Soluble Zn, Other (%)	0524	0.0010	0.0001	0.0018	0.0014	0.0025	4	-0.56		0
321.99	Acid Soluble Zn, Other (%)	0515	0.0016	0.0030	0.0018	0.0014	0.0025	4	-0.11		0
321.99	Acid Soluble Zn, Other (%)	0368	0.0038	0.0066	0.0018	0.0014	0.0025	4	1.44		0
321.99	Acid Soluble Zn, Other (%)	0481	< 0.01		0.0018	0.0014	0.0025	4			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 ± 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