

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 210812

18-46-0 DAP

Statistical Summary

Methods: 115

Labs Reporting: 92

Issue Date : 09/30/2021

Method Code	Analyte & Method Sample # 210812	# 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
001.10	Ammoniacal N, Magnesium Oxide Method (%)	5	5	17.39	0.9580	17.39		0.9580	0.5356	5.51%		0.7560	2.40%
001.99	Ammoniacal N, Other (%)	30	29	16.72	4.562	17.81		0.2497	0.0580	1.40%		0.0835	2.37%
002.99	Nitrate N, Other (%)	1		18.10									
010.11	Total N, Modified Comprehensive (18%)	2	2	17.90	0.0707								
010.12	Total N, Salicylic (18%)	2	2	17.69	0.0530								
010.60	Total N, Combustion (18%)	57	55	17.71	0.9959	17.89	0.6983	0.2596	0.0438	1.45%	0.87	0.1090	2.36%
010.99	Total N, Other (18%)	13	13	17.97	0.3089	17.97	0.6995	0.3323	0.1152	1.85%	1.11	0.1638	2.36%
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	5	5	46.66	0.3598	46.66		0.3598	0.2011	0.77%		0.2740	1.46%
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	16	15	45.17	6.526	46.66		0.5724	0.1847	1.23%		0.1645	1.46%
020.40	Total P2O5, Automated (%)	1		45.93									
020.50	Total P2O5, ICP (%)	17	16	45.75	2.241	46.18		1.248	0.3901	2.70%		0.4397	1.47%
020.99	Total P2O5, Other (%)	6	6	47.55	2.025	47.55		2.296	1.172	4.83%		0.4397	1.45%
030.10	Citrate Insoluble P2O5, Gravimetric Quinolinium MolybdoP (%)	1		46.51									
030.20	Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP (%)	1		0.0100									
030.99	Citrate Insoluble P2O5, Other (%)	1		46.01									
040.20	Indirect Available P2O5, Spectrophotometric (46%)	1		47.16									
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	5	5	46.57	0.7449	46.57	1.0086	0.7449	0.4164	1.60%	1.72	0.1490	1.47%
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	8	8	46.56	0.7619	46.75	1.0112	0.3403	0.1504	0.73%	0.78	0.1263	1.46%
041.20	Direct Available P2O5, Spectrophotometric (46%)	3	3	45.89	0.9893	45.89	0.9978	0.9893	0.7140	2.16%	2.31	0.8300	1.48%
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	11	11	45.76	1.910	46.05	1.0008	1.126	0.4243	2.44%	2.62	0.2907	1.47%
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)	3	3	47.63	1.107	47.63	1.0244	1.107	0.7987	2.32%	2.52	0.8067	1.45%
041.50	Direct Available P2O5, ICP (46%)	5	5	46.43	0.7466	46.43	1.0065	0.7466	0.4174	1.61%	1.73	0.4655	1.47%
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	7	7	46.62	0.9307	46.38	1.0057	0.4235	0.2001	0.91%	0.98	0.6929	1.47%
041.99	Direct Available P2O5, Other (46%)	13	13	46.12	0.4002	46.05	1.0007	0.2461	0.0853	0.53%	0.57	0.1131	1.47%
048.10	Water Soluble P2O5, Gravimetric Quinolinium (%)	1		43.92									
048.20	Water Soluble P2O5, Spectrophotometric (%)	1		39.38									
048.50	Water Soluble P2O5, ICP (%)	1		44.38									
048.99	Water Soluble P2O5, Other (%)	4	4	43.77	1.793	43.77		1.793	1.120	4.10%		0.2675	1.51%
050.32	Soluble K2O, AA (Citrate-EDTA) (%)	1		0.1950									
050.50	Soluble K2O, ICP (Oxalate) (%)	1		0.1705									
050.51	Soluble K2O, ICP (Citrate) (%)	1		0.1600									
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	3	3	0.1995	0.0520	0.1995	0.4100	0.0520	0.0375	26.05%	0.30	0.0023	5.10%
050.99	Soluble K2O, Other (%)	7	5	0.3738	0.6376	0.5033	0.4100	0.7316	0.4090	145.36%	4.16	0.0626	4.44%

Method Code	Analyte & Method Sample # 210812	# 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
060.00	Water (Free), Vacuum Oven (%)	1		0.6350									
101.00	Acid Soluble Ca, AA, inorganic 965.09 (%)	1		0.0330									
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	3	3	0.2117	0.0074	0.2117	0.2106	0.0074	0.0053	3.48%	0.08	0.0033	5.05%
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (%)	1		0.2100									
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	3	3	0.2142	0.0761	0.2142	0.2107	0.0761	0.0549	35.50%	0.84	0.0091	5.04%
101.99	Acid Soluble Ca, Other (%)	1		0.1700									
121.00	Acid Soluble Mg, AA, inorganic 965.09 (%)	1		0.8275									
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	3	3	0.7487	0.1059	0.7487	0.2374	0.1059	0.0764	14.14%	1.04	0.0173	4.18%
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (%)	1		0.7665									
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	3	3	1.221	0.7437	1.221	0.2611	0.7437	0.5367	60.90%	6.64	0.0346	3.88%
121.99	Acid Soluble Mg, Other (%)	3	3	1.024	0.4722	1.024	0.2512	0.4722	0.3408	46.13%	4.38	0.0175	3.99%
143.99	Elemental S, Other (%)	1		2.335									
145.99	Sulfate S, HCl soluble, Other (%)	1		2.420									
146.00	Total S in Liquid, Gravimetric - sulfate, sulfite, thiosulfate, a... (%)	1		2.575									
148.07	Total S, ICP, test portion as in 2017.02 (%)	6	5	1.903	0.6242	2.121	0.3061	0.3595	0.2009	16.95%	2.74	0.0142	3.57%
148.99	Total S, Other (%)	1		2.390									
149.04	S - HNO3 soluble, ICP (%)	2	2	2.470	0.1485								
151.00	Acid Soluble As, AA, test portion 2006.03 modified w/dual acid (ppm)	1		0.2850									
151.30	Acid Soluble As, ICP (ppm)	4	3	0.9483	0.6500	1.264		0.1848	0.1334	14.62%		0.2018	15.44%
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	5	4	2.134	2.584	2.668		2.646	1.654	99.19%		0.1220	13.80%
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	2	1	7.730	10.51								
151.99	Acid Soluble As, Other (ppm)	2	2	1.213	0.4066								
165.00	Acid Soluble B, Spectrophotometric (%)	1		0.0120									
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	2	2	0.0200	0.0000								
165.99	Acid Soluble B, Other (%)	6	5	0.0080	0.0018	0.0081	0.0042	0.0020	0.0011	24.38%	1.09	0.0001	8.26%
181.00	Acid Soluble Cd, AA, test portion 2006.03 modified w/dual acid (ppm)	1		18.30									
181.30	Acid Soluble Cd, ICP (ppm)	10	10	25.57	1.955	25.57		2.217	0.8764	8.67%		0.4717	9.82%
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	5	5	30.03	2.579	30.03		2.579	1.442	8.59%		0.4746	9.59%
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	2	2	43.65	19.59								
181.99	Acid Soluble Cd, Other (ppm)	2	2	27.12	1.305								
190.00	Water Soluble Cl, Titrimetric (%)	1		0.1000									
191.30	Acid Soluble Cr, ICP (ppm)	8	8	178.6	12.38	178.6		14.04	6.205	7.86%		4.092	7.33%
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	5	5	185.1	11.62	185.1		11.62	6.494	6.28%		6.169	7.29%
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	2	2	238.1	75.08								
191.99	Acid Soluble Cr, Other (ppm)	2	2	164.0	24.79								
202.30	Acid Soluble Co, ICP (ppm)	3	3	1.297	0.4160	1.297	1.3891	0.4160	0.3002	32.08%	0.70	0.0234	15.38%
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	4	3	1.683	2.225	0.5775	1.1733	0.3026	0.2184	52.40%	0.60	0.0519	17.37%
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	3	3	7.806	12.33	7.806	3.3417	12.33	8.896	157.92%	8.59	3.358	11.74%
202.99	Acid Soluble Co, Other (ppm)	3	2	0.4905	0.1788	0.3875	1.1163	0.0177	0.0156	4.56%	0.04	0.1250	18.45%
221.00	Acid Soluble Cu, AA, inorganic 965.09 (%)	1		0.0050									
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	3	1	0.0043	0.0052	0.3875	0.0438	0.0177	0.0221	4.56%	0.94	0.0004	4.61%
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	1		0.0011									
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	5	2	0.0007	0.0010	0.0004	0.0050	0.0002	0.0002	41.59%	0.08	0.0002	12.87%
221.99	Acid Soluble Cu, Other (%)	4	2	0.0010	0.0017	0.0019	0.0052	0.0023	0.0021	122.81%	1.05	0.0023	10.27%

Method Code	Analyte & Method Sample # 210812	# 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
241.00	Acid Soluble Fe, AA, inorganic 965.09 (%)	1		0.2550									
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	3	3	0.4322	0.0267	0.4322	0.0482	0.0267	0.0193	6.17%	1.29	0.0057	4.54%
241.32	Acid Soluble Fe, ICP, test portion 2006.03A-C (%)	1		0.3955									
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	4	4	0.6940	0.5474	0.6940	0.0744	0.5474	0.3421	78.87%	17.14	0.0142	4.23%
241.99	Acid Soluble Fe, Other (%)	3	3	0.7580	0.5808	0.7580	0.0808	0.5808	0.4192	76.63%	16.75	0.0859	4.17%
251.00	Acid Soluble Pb, AA, test portion 2006.03 modified w/dual acid (ppm)	1		2.000									
251.30	Acid Soluble Pb, ICP (ppm)	6	5	0.9592	1.274	1.151		1.323	0.7398	114.98%		0.0417	15.66%
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	4	2	0.9872	1.383	0.4743		0.4324	0.3822	91.17%		0.0456	17.90%
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	2	1	12.34	16.60								
251.99	Acid Soluble Pb, Other (ppm)	2	1	0.1950	0.1485								
261.00	Acid Soluble Mn, AA, Mn2+ only (%)	1		0.0060									
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	2	1	0.0084	0.0022								
261.34	Acid Soluble Mn, ICP, test portion 2006.03A-C (%)	1		0.0070									
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	4	4	0.0101	0.0066	0.0101	0.0060	0.0066	0.0041	65.05%	2.55	0.0004	7.98%
261.99	Acid Soluble Mn, Other (%)	3	3	0.0087	0.0043	0.0087	0.0059	0.0043	0.0031	49.33%	1.71	0.0030	8.16%
281.00	Acid Soluble Hg, AA (ppm)	1		0.0500									
281.30	Acid Soluble Hg, ICP (ppm)	4	0	0.0275	0.0485	0.0087		0.0043		49.33%		0.0000	22.00%
281.99	Acid Soluble Hg, Other (ppm)	5	3	0.0055	0.0046	0.0032		0.0046	0.0033	144.12%		0.0031	22.00%
289.30	Acid Soluble Mo, ICP (ppm)	4	4	2.795	0.3819	2.795	1.8386	0.3819	0.2387	13.66%	0.48	0.3846	13.70%
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	5	4	3.313	0.9944	2.891	1.8673	0.3640	0.2275	12.59%	0.45	0.1250	13.63%
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	3	3	9.446	10.17	9.446	3.8337	10.17	7.341	107.69%	6.18	13.32	11.41%
289.99	Acid Soluble Mo, Other (ppm)	1		3.005									
291.30	Acid Soluble Ni, ICP (ppm)	7	7	5.553	1.610	5.719		1.423	0.6721	24.88%		0.1779	12.30%
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	5	5	8.484	3.544	8.484		3.544	1.981	41.77%		0.6756	11.60%
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	3	3	20.97	23.68	20.97		23.68	17.09	112.92%		12.47	10.12%
291.99	Acid Soluble Ni, Other (ppm)	3	3	10.19	7.104	10.19		7.104	5.127	69.72%		0.3200	11.28%
301.30	Acid Soluble Se, ICP (ppm)	2	2	1.262	0.8312								
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	3	3	1.782	0.8411	1.782		0.8411	0.6070	47.19%		0.1788	14.66%
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	2	1	8.759	10.97								
301.99	Acid Soluble Se, Other (ppm)	3	1	0.7217	0.6304	1.782		0.8411	1.051	47.19%		0.0100	14.66%
311.00	Sodium, AA (%)	1		0.1780									
311.33	Sodium, ICP, test portion as in 2017.02 (%)	3	3	0.1708	0.0149	0.1708	0.0221	0.0149	0.0107	8.72%	1.57	0.0031	5.22%
311.99	Sodium, Other (%)	1		0.1850									
321.00	Acid Soluble Zn, AA, inorganic 965.09 (%)	3	3	95.99	166.2	95.99	1.0000	166.2	119.9	173.13%	387.23	1.867	1.02%
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	6	5	0.0402	0.0083	0.0386	0.0089	0.0081	0.0046	21.11%	2.14	0.0006	6.53%
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	2	2	0.0425	0.0042								
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	7	6	0.0494	0.0192	0.0428	0.0093	0.0088	0.0045	20.55%	2.21	0.0022	6.43%
321.99	Acid Soluble Zn, Other (%)	8	7	0.0431	0.0185	0.0375	0.0088	0.0025	0.0012	6.72%	0.67	0.0013	6.56%

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.

Horwitz %RSD	
Average Range (R-bar)	
Method IA Ratio	
Robust % RSD	
Robust Uncertainty (U)	
Robust sd	
IA at Method Value	
Assigned Value Robust Mean	
Raw SD	
Raw Mean	
# Tests in Robust Calculations	
# Tests Submitted	
Analyte & Method Sample # 210812	
Method Code	

magruder fertilizer

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Method Proficiency For All Labs (Lab Values)

Sample # 210812

Method Precision Report

18-46-0 DAP

Issue Date : 09/30/2021

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 %rds	Reproducibility %RSD	sR/sr
001.10	Ammoniacal N, Magnesium Oxide Method (%)	5	5	17.39	0.9580	0.8709	0.5645	1.038	5.01%	3.25%	5.97%	1.839
001.99	Ammoniacal N, Other (%)	30	26	17.89	0.4136	0.4103	0.0731	0.4168	2.29%	0.41%	2.33%	5.702
010.60	Total N, Combustion (18%)	57	53	17.85	0.3923	0.3871	0.0901	0.3974	2.17%	0.50%	2.23%	4.412
010.99	Total N, Other (18%)	13	12	17.96	0.3202	0.3072	0.1278	0.3327	1.71%	0.71%	1.85%	2.603
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	16	14	46.80	0.8943	0.8900	0.1241	0.8986	1.90%	0.27%	1.92%	7.240
020.50	Total P2O5, ICP (%)	17	16	45.61	2.242	2.226	0.3813	2.259	4.88%	0.84%	4.95%	5.924
020.99	Total P2O5, Other (%)	6	6	47.55	2.025	2.000	0.4457	2.049	4.21%	0.94%	4.31%	4.598
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	5	5	46.57	0.7449	0.7390	0.1327	0.7508	1.59%	0.28%	1.61%	5.658
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext. (46%)	8	7	46.82	0.2406	0.2314	0.0934	0.2495	0.49%	0.20%	0.53%	2.672
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	11	10	46.27	0.9607	0.9418	0.2679	0.9792	2.04%	0.58%	2.12%	3.656
041.50	Direct Available P2O5, ICP (46%)	5	5	46.43	0.7466	0.6859	0.4172	0.8028	1.48%	0.90%	1.73%	1.924
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	7	6	46.28	0.2706		0.4930			1.07%		
041.99	Direct Available P2O5, Other (46%)	13	11	46.00	0.1888	0.1818	0.0720	0.1956	0.40%	0.16%	0.43%	2.718
165.99	Acid Soluble B, Other (%)	6	5	0.0081	0.0020	0.0020	0.0001	0.0020	24.36%	1.41%	24.40%	17.27
181.30	Acid Soluble Cd, ICP (ppm)	10	10	25.57	1.955	1.927	0.4663	1.983	7.54%	1.82%	7.76%	4.253
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	5	5	30.03	2.579	2.562	0.4173	2.596	8.53%	1.39%	8.64%	6.220
191.30	Acid Soluble Cr, ICP (ppm)	8	8	178.6	12.38	11.99	4.343	12.76	6.72%	2.43%	7.14%	2.937
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	5	5	185.1	11.62	10.76	6.210	12.42	5.81%	3.36%	6.71%	2.000
291.30	Acid Soluble Ni, ICP (ppm)	7	7	5.553	1.610	1.606	0.1409	1.613	28.93%	2.54%	29.04%	11.45
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	7	5	0.0401	0.0048	0.0045	0.0021	0.0050	11.33%	5.30%	12.51%	2.360
321.99	Acid Soluble Zn, Other (%)	8	6	0.0369	0.0045	0.0044	0.0007	0.0045	12.05%	1.81%	12.19%	6.723

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

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Method Proficiency For All Labs (Lab Values)

Sample # 210812
18-46-0 DAP

Lab Values

Methods: 115

Labs Reporting: 92

Issue Date : 09/30/2021

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0136	16.25	0.9000	17.39	0.9580	0.7560	5	-1.19		0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0117	16.76	0.4500	17.39	0.9580	0.7560	5	-0.66		0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0451	17.20	0.6100	17.39	0.9580	0.7560	5	-0.20		0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0563	18.30	1.180	17.39	0.9580	0.7560	5	0.95		0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0444	18.44	0.6400	17.39	0.9580	0.7560	5	1.10		0
001.99	Ammoniacal N, Other (%)	0524	0.0017	0.0001	17.81	0.2497	0.0835	29	-71.31	NA	0
001.99	Ammoniacal N, Other (%)	0553	0.0040	0.0000	17.81	0.2497	0.0835	29	-71.30	NA	0
001.99	Ammoniacal N, Other (%)	0255	17.38	0.1600	17.81	0.2497	0.0835	29	-1.72	NA	0
001.99	Ammoniacal N, Other (%)	0533	17.39	0.0200	17.81	0.2497	0.0835	29	-1.68	NA	0
001.99	Ammoniacal N, Other (%)	0567	17.55	0.1000	17.81	0.2497	0.0835	29	-1.04	NA	0
001.99	Ammoniacal N, Other (%)	0200	17.57	0.0800	17.81	0.2497	0.0835	29	-0.96	NA	0
001.99	Ammoniacal N, Other (%)	0564	17.63	0.0200	17.81	0.2497	0.0835	29	-0.72	NA	0
001.99	Ammoniacal N, Other (%)	0574	17.65	0.1000	17.81	0.2497	0.0835	29	-0.64	NA	0
001.99	Ammoniacal N, Other (%)	0562	17.68	0.1500	17.81	0.2497	0.0835	29	-0.54	NA	0
001.99	Ammoniacal N, Other (%)	0220	17.74	0.0600	17.81	0.2497	0.0835	29	-0.28	NA	0
001.99	Ammoniacal N, Other (%)	0368	17.74	0.0330	17.81	0.2497	0.0835	29	-0.27	NA	0
001.99	Ammoniacal N, Other (%)	0559	17.75	0.0100	17.81	0.2497	0.0835	29	-0.26	NA	0
001.99	Ammoniacal N, Other (%)	0405	17.79	0.1400	17.81	0.2497	0.0835	29	-0.08	NA	0
001.99	Ammoniacal N, Other (%)	0493	17.87	0.1000	17.81	0.2497	0.0835	29	0.24	NA	0
001.99	Ammoniacal N, Other (%)	0548	17.90	0.0500	17.81	0.2497	0.0835	29	0.34	NA	0
001.99	Ammoniacal N, Other (%)	0535	17.90	0.2000	17.81	0.2497	0.0835	29	0.36	NA	0
001.99	Ammoniacal N, Other (%)	0513	17.91	0.0400	17.81	0.2497	0.0835	29	0.40	NA	0
001.99	Ammoniacal N, Other (%)	0532	17.91	0.0600	17.81	0.2497	0.0835	29	0.40	NA	0
001.99	Ammoniacal N, Other (%)	0546	17.92	0.1000	17.81	0.2497	0.0835	29	0.44	NA	0
001.99	Ammoniacal N, Other (%)	0551	17.93	0.0600	17.81	0.2497	0.0835	29	0.48	NA	0
001.99	Ammoniacal N, Other (%)	0536	17.96	0.0200	17.81	0.2497	0.0835	29	0.60	NA	0
001.99	Ammoniacal N, Other (%)	0539	17.98	0.0300	17.81	0.2497	0.0835	29	0.66	NA	0
001.99	Ammoniacal N, Other (%)	0549	17.98	0.2300	17.81	0.2497	0.0835	29	0.66	NA	0
001.99	Ammoniacal N, Other (%)	0394	17.98	0.2070	17.81	0.2497	0.0835	29	0.68	NA	0
001.99	Ammoniacal N, Other (%)	0027	18.00	0.2900	17.81	0.2497	0.0835	29	0.74	NA	0
001.99	Ammoniacal N, Other (%)	0569	18.03	0.0900	17.81	0.2497	0.0835	29	0.86	NA	0
001.99	Ammoniacal N, Other (%)	0531	18.03	0.0200	17.81	0.2497	0.0835	29	0.88	NA	0
001.99	Ammoniacal N, Other (%)	0522	18.49	0.0200	17.81	0.2497	0.0835	29	2.73	NA	0
001.99	Ammoniacal N, Other (%)	0545	19.59	0.0300	17.81	0.2497	0.0835	29	7.11	NA	0
001.99	Ammoniacal N, Other (%)	0444	18.44	0.6400	17.81	0.2497	0.0835	29	2.53	NA	1
002.99	Nitrate N, Other (%)	0553	18.10	0.6000				1			0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010.11	Total N, Modified Comprehensive (18%)	0548	17.85	0.3200				2			0
010.11	Total N, Modified Comprehensive (18%)	0535	17.95	0.1000				2			0
010.12	Total N, Salicylic (18%)	0568	17.65	0.7000				2			0
010.12	Total N, Salicylic (18%)	0572	17.73	0.3900				2			0
010.60	Total N, Combustion (18%)	0023	15.85	0.2200	17.89	0.2596	0.1090	55	-7.87	Low	0
010.60	Total N, Combustion (18%)	0521	17.05	0.0000	17.89	0.2596	0.1090	55	-3.21	Low	0
010.60	Total N, Combustion (18%)	0523	17.30	0.0400	17.89	0.2596	0.1090	55	-2.26	OK	0
010.60	Total N, Combustion (18%)	0117	17.40	0.0000	17.89	0.2596	0.1090	55	-1.88	OK	0
010.60	Total N, Combustion (18%)	0443	17.50	0.0900	17.89	0.2596	0.1090	55	-1.51	OK	0
010.60	Total N, Combustion (18%)	0422	17.55	0.3000	17.89	0.2596	0.1090	55	-1.30	OK	0
010.60	Total N, Combustion (18%)	0042	17.55	0.1000	17.89	0.2596	0.1090	55	-1.30	OK	0
010.60	Total N, Combustion (18%)	0402	17.62	0.1200	17.89	0.2596	0.1090	55	-1.03	OK	0
010.60	Total N, Combustion (18%)	0157	17.65	0.1000	17.89	0.2596	0.1090	55	-0.92	OK	0
010.60	Total N, Combustion (18%)	0231	17.65	0.0200	17.89	0.2596	0.1090	55	-0.92	OK	0
010.60	Total N, Combustion (18%)	0073	17.70	0.0700	17.89	0.2596	0.1090	55	-0.74	OK	0
010.60	Total N, Combustion (18%)	0136	17.70	0.2000	17.89	0.2596	0.1090	55	-0.72	OK	0
010.60	Total N, Combustion (18%)	0324	17.70	0.2000	17.89	0.2596	0.1090	55	-0.72	OK	0
010.60	Total N, Combustion (18%)	0390	17.72	0.2000	17.89	0.2596	0.1090	55	-0.65	OK	0
010.60	Total N, Combustion (18%)	0485	17.73	0.1000	17.89	0.2596	0.1090	55	-0.61	OK	0
010.60	Total N, Combustion (18%)	0494	17.74	0.2500	17.89	0.2596	0.1090	55	-0.59	OK	0
010.60	Total N, Combustion (18%)	0018	17.75	0.1000	17.89	0.2596	0.1090	55	-0.53	OK	0
010.60	Total N, Combustion (18%)	0534	17.75	0.1000	17.89	0.2596	0.1090	55	-0.53	OK	0
010.60	Total N, Combustion (18%)	0234	17.78	0.1870	17.89	0.2596	0.1090	55	-0.40	OK	0
010.60	Total N, Combustion (18%)	0423	17.80	0.2000	17.89	0.2596	0.1090	55	-0.34	OK	0
010.60	Total N, Combustion (18%)	0292	17.81	0.0100	17.89	0.2596	0.1090	55	-0.32	OK	0
010.60	Total N, Combustion (18%)	0055	17.83	0.0300	17.89	0.2596	0.1090	55	-0.24	OK	0
010.60	Total N, Combustion (18%)	0547	17.83	0.0300	17.89	0.2596	0.1090	55	-0.24	OK	0
010.60	Total N, Combustion (18%)	0169	17.85	0.0500	17.89	0.2596	0.1090	55	-0.17	OK	0
010.60	Total N, Combustion (18%)	0291	17.85	0.0100	17.89	0.2596	0.1090	55	-0.17	OK	0
010.60	Total N, Combustion (18%)	0501	17.88	0.0600	17.89	0.2596	0.1090	55	-0.03	OK	0
010.60	Total N, Combustion (18%)	0007	17.90	0.2000	17.89	0.2596	0.1090	55	0.05	OK	0
010.60	Total N, Combustion (18%)	0102	17.91	0.0500	17.89	0.2596	0.1090	55	0.07	OK	0
010.60	Total N, Combustion (18%)	0561	17.91	0.1100	17.89	0.2596	0.1090	55	0.07	OK	0
010.60	Total N, Combustion (18%)	0451	17.91	0.1400	17.89	0.2596	0.1090	55	0.08	OK	0
010.60	Total N, Combustion (18%)	0043	17.92	0.0000	17.89	0.2596	0.1090	55	0.12	OK	0
010.60	Total N, Combustion (18%)	0371	17.95	0.1000	17.89	0.2596	0.1090	55	0.24	OK	0
010.60	Total N, Combustion (18%)	0389	17.98	0.5700	17.89	0.2596	0.1090	55	0.33	OK	0
010.60	Total N, Combustion (18%)	0486	17.98	0.0900	17.89	0.2596	0.1090	55	0.33	OK	0
010.60	Total N, Combustion (18%)	0095	17.99	0.2500	17.89	0.2596	0.1090	55	0.37	OK	0
010.60	Total N, Combustion (18%)	0027	18.00	0.0000	17.89	0.2596	0.1090	55	0.43	OK	0
010.60	Total N, Combustion (18%)	0035	18.00	0.0000	17.89	0.2596	0.1090	55	0.43	OK	0
010.60	Total N, Combustion (18%)	0040	18.00	0.0000	17.89	0.2596	0.1090	55	0.43	OK	0
010.60	Total N, Combustion (18%)	0230	18.00	0.0000	17.89	0.2596	0.1090	55	0.43	OK	0
010.60	Total N, Combustion (18%)	0356	18.02	0.0270	17.89	0.2596	0.1090	55	0.49	OK	0
010.60	Total N, Combustion (18%)	0377	18.03	0.0700	17.89	0.2596	0.1090	55	0.53	OK	0
010.60	Total N, Combustion (18%)	0405	18.03	0.0400	17.89	0.2596	0.1090	55	0.55	OK	0
010.60	Total N, Combustion (18%)	0177	18.03	0.0060	17.89	0.2596	0.1090	55	0.56	OK	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010.60	Total N, Combustion (18%)	0452	18.06	0.0900	17.89	0.2596	0.1090	55	0.64	OK	0
010.60	Total N, Combustion (18%)	0025	18.11	0.4400	17.89	0.2596	0.1090	55	0.85	OK	0
010.60	Total N, Combustion (18%)	0421	18.12	0.1700	17.89	0.2596	0.1090	55	0.87	OK	0
010.60	Total N, Combustion (18%)	0444	18.16	0.0200	17.89	0.2596	0.1090	55	1.05	OK	0
010.60	Total N, Combustion (18%)	0255	18.17	0.2570	17.89	0.2596	0.1090	55	1.09	OK	0
010.60	Total N, Combustion (18%)	0354	18.20	0.2000	17.89	0.2596	0.1090	55	1.20	OK	0
010.60	Total N, Combustion (18%)	0029	18.21	0.2600	17.89	0.2596	0.1090	55	1.24	OK	0
010.60	Total N, Combustion (18%)	0049	18.30	0.0300	17.89	0.2596	0.1090	55	1.57	OK	0
010.60	Total N, Combustion (18%)	0220	18.34	0.0200	17.89	0.2596	0.1090	55	1.74	OK	0
010.60	Total N, Combustion (18%)	0368	18.35	0.0470	17.89	0.2596	0.1090	55	1.76	OK	0
010.60	Total N, Combustion (18%)	0527	18.39	0.0120	17.89	0.2596	0.1090	55	1.91	OK	0
010.60	Total N, Combustion (18%)	0114	18.53	0.0100	17.89	0.2596	0.1090	55	2.45	OK	0
010.60	Total N, Combustion (18%)	0325	16.43	1.680	17.89	0.2596	0.1090	55	-5.62	Low	1
010.60	Total N, Combustion (18%)	0472	11.03	0.0300	17.89	0.2596	0.1090	55	-26.43	Low	2
010.99	Total N, Other (18%)	0524	17.55	0.0029	17.97	0.3323	0.1638	13	-1.27	OK	0
010.99	Total N, Other (18%)	0567	17.65	0.1000	17.97	0.3323	0.1638	13	-0.95	OK	0
010.99	Total N, Other (18%)	0574	17.65	0.1000	17.97	0.3323	0.1638	13	-0.95	OK	0
010.99	Total N, Other (18%)	0564	17.73	0.0300	17.97	0.3323	0.1638	13	-0.73	OK	0
010.99	Total N, Other (18%)	0559	17.76	0.0100	17.97	0.3323	0.1638	13	-0.64	OK	0
010.99	Total N, Other (18%)	0562	17.83	0.1500	17.97	0.3323	0.1638	13	-0.43	OK	0
010.99	Total N, Other (18%)	0394	17.98	0.2070	17.97	0.3323	0.1638	13	0.04	OK	0
010.99	Total N, Other (18%)	0576	18.10	0.6000	17.97	0.3323	0.1638	13	0.40	OK	0
010.99	Total N, Other (18%)	0444	18.16	0.0200	17.97	0.3323	0.1638	13	0.58	OK	0
010.99	Total N, Other (18%)	0563	18.19	0.4400	17.97	0.3323	0.1638	13	0.67	OK	0
010.99	Total N, Other (18%)	0518	18.26	0.2100	17.97	0.3323	0.1638	13	0.87	OK	0
010.99	Total N, Other (18%)	0537	18.27	0.2600	17.97	0.3323	0.1638	13	0.91	OK	0
010.99	Total N, Other (18%)	0571	18.57	0.0000	17.97	0.3323	0.1638	13	1.82	OK	0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0574	46.15	0.1000	46.66	0.3598	0.2740	5	-1.41		0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0114	46.53	0.1300	46.66	0.3598	0.2740	5	-0.37		0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0493	46.70	0.1000	46.66	0.3598	0.2740	5	0.11		0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0049	46.79	1.000	46.66	0.3598	0.2740	5	0.36		0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0444	47.13	0.0400	46.66	0.3598	0.2740	5	1.31		0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0522	45.96	0.0200	46.66	0.5724	0.1645	15	-1.23	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0371	46.05	0.1000	46.66	0.5724	0.1645	15	-1.07	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0169	46.16	0.1100	46.66	0.5724	0.1645	15	-0.89	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0534	46.20	0.0000	46.66	0.5724	0.1645	15	-0.81	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0548	46.32	0.3000	46.66	0.5724	0.1645	15	-0.60	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0561	46.41	0.1900	46.66	0.5724	0.1645	15	-0.45	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0231	46.59	0.0600	46.66	0.5724	0.1645	15	-0.13	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0292	46.62	0.0500	46.66	0.5724	0.1645	15	-0.08	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0493	46.65	0.1000	46.66	0.5724	0.1645	15	-0.02	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0356	46.69	0.5810	46.66	0.5724	0.1645	15	0.04	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0405	46.88	0.1300	46.66	0.5724	0.1645	15	0.37	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0220	47.16	0.2300	46.66	0.5724	0.1645	15	0.86	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0394	47.35	0.3960	46.66	0.5724	0.1645	15	1.20	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0547	47.40	0.2000	46.66	0.5724	0.1645	15	1.29	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0571	49.46	0.0000	46.66	0.5724	0.1645	15	4.89	NA	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0324	20.90	0.0000	46.66	0.5724	0.1645	15	-45.01	NA	2
020.40	Total P2O5, Automated (%)	0035	45.93	0.4500				1			0
020.50	Total P2O5, ICP (%)	0389	40.84	0.6300	46.18	1.248	0.4397	16	-4.28	NA	0
020.50	Total P2O5, ICP (%)	0255	41.35	0.3900	46.18	1.248	0.4397	16	-3.87	NA	0
020.50	Total P2O5, ICP (%)	0390	41.60	0.4000	46.18	1.248	0.4397	16	-3.67	NA	0
020.50	Total P2O5, ICP (%)	0444	45.80	0.2400	46.18	1.248	0.4397	16	-0.31	NA	0
020.50	Total P2O5, ICP (%)	0433	45.85	0.6700	46.18	1.248	0.4397	16	-0.27	NA	0
020.50	Total P2O5, ICP (%)	0527	46.07	0.1298	46.18	1.248	0.4397	16	-0.09	NA	0
020.50	Total P2O5, ICP (%)	0521	46.17	0.0000	46.18	1.248	0.4397	16	-0.01	NA	0
020.50	Total P2O5, ICP (%)	0546	46.21	0.4950	46.18	1.248	0.4397	16	0.02	NA	0
020.50	Total P2O5, ICP (%)	0451	46.21	1.040	46.18	1.248	0.4397	16	0.02	NA	0
020.50	Total P2O5, ICP (%)	0402	46.39	0.3900	46.18	1.248	0.4397	16	0.16	NA	0
020.50	Total P2O5, ICP (%)	0523	46.65	0.5000	46.18	1.248	0.4397	16	0.37	NA	0
020.50	Total P2O5, ICP (%)	0291	46.75	0.0100	46.18	1.248	0.4397	16	0.45	NA	0
020.50	Total P2O5, ICP (%)	0177	47.32	0.2316	46.18	1.248	0.4397	16	0.91	NA	0
020.50	Total P2O5, ICP (%)	0472	47.43	0.1400	46.18	1.248	0.4397	16	1.00	NA	0
020.50	Total P2O5, ICP (%)	0524	47.44	0.7218	46.18	1.248	0.4397	16	1.00	NA	0
020.50	Total P2O5, ICP (%)	0423	47.73	1.047	46.18	1.248	0.4397	16	1.24	NA	0
020.50	Total P2O5, ICP (%)	0422	47.90	5.840	46.18	1.248	0.4397	16	1.38	NA	1
020.99	Total P2O5, Other (%)	0572	45.74	1.260	47.55	2.296	0.4397	6	-0.70	NA	0
020.99	Total P2O5, Other (%)	0564	46.27	0.0300	47.55	2.296	0.4397	6	-0.50	NA	0
020.99	Total P2O5, Other (%)	0444	46.51	0.2200	47.55	2.296	0.4397	6	-0.40	NA	0
020.99	Total P2O5, Other (%)	0513	46.52	0.1100	47.55	2.296	0.4397	6	-0.40	NA	0
020.99	Total P2O5, Other (%)	0443	49.85	0.1800	47.55	2.296	0.4397	6	0.89	NA	0
020.99	Total P2O5, Other (%)	0515	50.40	0.8381	47.55	2.296	0.4397	6	1.11	NA	0
030.10	Citrate Insoluble P2O5, Gravimetric Quinolinium MolybdoP (%)	0444	46.51	0.2200				1			0
030.20	Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP (%)	0220	< 0.01					0			5
030.99	Citrate Insoluble P2O5, Other (%)	0537	46.01	0.1300				1			0
040.20	Indirect Available P2O5, Spectrophotometric (46%)	0220	47.16	0.2300				1			0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0102	45.37	0.1200	46.57	0.7449	0.1490	5	-1.61		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0040	46.60	0.2000	46.57	0.7449	0.1490	5	0.04		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0177	46.69	0.3429	46.57	0.7449	0.1490	5	0.16		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0086	46.77	0.0223	46.57	0.7449	0.1490	5	0.27		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0494	47.42	0.0600	46.57	0.7449	0.1490	5	1.14		0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	0095	44.76	0.2600	46.75	0.3403	0.1263	8	-5.34	Low	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	0405	46.56	0.0300	46.75	0.3403	0.1263	8	-0.52	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	0055	46.63	0.0300	46.75	0.3403	0.1263	8	-0.33	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	0485	46.75	0.2100	46.75	0.3403	0.1263	8	-0.01	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	0513	46.75	0.0700	46.75	0.3403	0.1263	8	-0.01	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	0220	46.81	0.0400	46.75	0.3403	0.1263	8	0.17	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	0073	47.01	0.2100	46.75	0.3403	0.1263	8	0.69	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA Ext.... (46%)	0043	47.26	0.1600	46.75	0.3403	0.1263	8	1.38	OK	0
041.20	Direct Available P2O5, Spectrophotometric (46%)	0553	45.15	1.500	45.89	0.9893	0.8300	3	-0.75		0
041.20	Direct Available P2O5, Spectrophotometric (46%)	0576	45.51	0.9800	45.89	0.9893	0.8300	3	-0.39		0
041.20	Direct Available P2O5, Spectrophotometric (46%)	0027	47.02	0.0100	45.89	0.9893	0.8300	3	1.14		0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0472	40.70	0.2600	46.05	1.126	0.2907	11	-4.45	Low	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0230	44.65	0.7000	46.05	1.126	0.2907	11	-1.17	Low	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0568	45.15	0.3000	46.05	1.126	0.2907	11	-0.75	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0522	45.81	0.0400	46.05	1.126	0.2907	11	-0.20	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0200	46.35	0.2700	46.05	1.126	0.2907	11	0.24	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0177	46.37	0.4782	46.05	1.126	0.2907	11	0.26	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0394	46.41	0.1800	46.05	1.126	0.2907	11	0.29	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0055	46.42	0.6900	46.05	1.126	0.2907	11	0.30	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0405	46.43	0.0400	46.05	1.126	0.2907	11	0.31	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0231	46.91	0.0400	46.05	1.126	0.2907	11	0.71	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (46%)	0354	48.20	0.2000	46.05	1.126	0.2907	11	1.78	High	0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)	0018	46.35	0.1000	47.63	1.107	0.8067	3	-1.15		0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)	0029	48.22	0.7700	47.63	1.107	0.8067	3	0.53		0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)	0034	48.32	1.550	47.63	1.107	0.8067	3	0.62		0
041.50	Direct Available P2O5, ICP (46%)	0007	45.70	0.6000	46.43	0.7466	0.4655	5	-0.98		0
041.50	Direct Available P2O5, ICP (46%)	0325	46.05	1.100	46.43	0.7466	0.4655	5	-0.51		0
041.50	Direct Available P2O5, ICP (46%)	0421	46.35	0.1000	46.43	0.7466	0.4655	5	-0.11		0
041.50	Direct Available P2O5, ICP (46%)	0452	46.38	0.1600	46.43	0.7466	0.4655	5	-0.07		0
041.50	Direct Available P2O5, ICP (46%)	0368	47.67	0.3674	46.43	0.7466	0.4655	5	1.66		0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0025	45.90	1.000	46.38	0.4235	0.6929	7	-1.03	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0377	46.09	0.3800	46.38	0.4235	0.6929	7	-0.62	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0486	46.15	0.5900	46.38	0.4235	0.6929	7	-0.51	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0136	46.45	0.7000	46.38	0.4235	0.6929	7	0.15	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0494	46.47	0.8800	46.38	0.4235	0.6929	7	0.19	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0423	46.60	0.4000	46.38	0.4235	0.6929	7	0.47	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0023	48.65	0.9000	46.38	0.4235	0.6929	7	4.84	High	0
041.99	Direct Available P2O5, Other (46%)	0536	45.73	0.0400	46.05	0.2461	0.1131	13	-1.30	OK	0
041.99	Direct Available P2O5, Other (46%)	0535	45.75	0.1000	46.05	0.2461	0.1131	13	-1.22	OK	0
041.99	Direct Available P2O5, Other (46%)	0532	45.89	0.0600	46.05	0.2461	0.1131	13	-0.65	OK	0
041.99	Direct Available P2O5, Other (46%)	0551	45.93	0.0500	46.05	0.2461	0.1131	13	-0.50	OK	0
041.99	Direct Available P2O5, Other (46%)	0549	45.94	0.1400	46.05	0.2461	0.1131	13	-0.44	OK	0
041.99	Direct Available P2O5, Other (46%)	0569	45.95	0.1200	46.05	0.2461	0.1131	13	-0.40	OK	0
041.99	Direct Available P2O5, Other (46%)	0531	46.02	0.0000	46.05	0.2461	0.1131	13	-0.12	OK	0
041.99	Direct Available P2O5, Other (46%)	0562	46.05	0.2000	46.05	0.2461	0.1131	13	0.00	OK	0
041.99	Direct Available P2O5, Other (46%)	0539	46.13	0.0500	46.05	0.2461	0.1131	13	0.31	OK	0
041.99	Direct Available P2O5, Other (46%)	0545	46.23	0.1400	46.05	0.2461	0.1131	13	0.73	OK	0
041.99	Direct Available P2O5, Other (46%)	0518	46.26	0.3900	46.05	0.2461	0.1131	13	0.84	OK	0
041.99	Direct Available P2O5, Other (46%)	0559	46.36	0.0100	46.05	0.2461	0.1131	13	1.24	OK	0
041.99	Direct Available P2O5, Other (46%)	0533	47.30	0.1700	46.05	0.2461	0.1131	13	5.06	High	0
048.10	Water Soluble P2O5, Gravimetric Quinolinium (%)	0444	43.92	0.1300				1			0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0472	39.38	0.0200				1			0
048.50	Water Soluble P2O5, ICP (%)	0444	44.38	0.0100				1			0
048.99	Water Soluble P2O5, Other (%)	0572	41.80	0.8500	43.77	1.793	0.2675	4	-1.10		0
048.99	Water Soluble P2O5, Other (%)	0513	43.28	0.0700	43.77	1.793	0.2675	4	-0.28		0
048.99	Water Soluble P2O5, Other (%)	0444	43.92	0.1300	43.77	1.793	0.2675	4	0.08		0
048.99	Water Soluble P2O5, Other (%)	0567	46.11	0.0200	43.77	1.793	0.2675	4	1.30		0
050.32	Soluble K2O, AA (Citrate-EDTA) (%)	0472	0.1950	0.0300				1			0
050.50	Soluble K2O, ICP (Oxalate) (%)	0422	0.1705	0.0230				1			0
050.51	Soluble K2O, ICP (Citrate) (%)	0568	0.1600	0.0000				1			0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	0423	0.1605	0.0030	0.1995	0.0520	0.0023	3	-0.75		0
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	0354	0.1795	0.0030	0.1995	0.0520	0.0023	3	-0.38		0
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	0023	0.2585	0.0010	0.1995	0.0520	0.0023	3	1.14		0
050.99	Soluble K2O, Other (%)	0553	0.1645	0.0030	0.5033	0.7316	0.0626	5	-0.40		0
050.99	Soluble K2O, Other (%)	0524	0.1704	0.0036	0.5033	0.7316	0.0626	5	-0.40		0
050.99	Soluble K2O, Other (%)	0389	0.1800	0.0000	0.5033	0.7316	0.0626	5	-0.39		0
050.99	Soluble K2O, Other (%)	0527	0.1897	0.0013	0.5033	0.7316	0.0626	5	-0.37		0
050.99	Soluble K2O, Other (%)	0515	1.812	0.3051	0.5033	0.7316	0.0626	5	1.56		0
050.99	Soluble K2O, Other (%)	0571	0.0000	0.0000	0.5033	0.7316	0.0626	5			4
050.99	Soluble K2O, Other (%)	0325	< 0.1		0.5033	0.7316	0.0626	5			5
060.00	Water (Free), Vacuum Oven (%)	0513	0.6350	0.0100				1			0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (%)	0553	0.0330	0.0000				1			0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0568	0.2060	0.0020	0.2117	0.0074	0.0033	3	-0.77		0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0035	0.2090	0.0080	0.2117	0.0074	0.0033	3	-0.36		0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0354	0.2200	0.0000	0.2117	0.0074	0.0033	3	1.13		0
101.32	Acid Soluble Ca, ICP, test portion 2006.03A-C (%)	0423	0.2100	0.0020				1			0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0527	0.1440	0.0068	0.2142	0.0761	0.0091	3	-0.92		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0494	0.2037	0.0105	0.2142	0.0761	0.0091	3	-0.14		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0472	0.2950	0.0100	0.2142	0.0761	0.0091	3	1.06		0
101.99	Acid Soluble Ca, Other (%)	0389	0.1700	0.0000				1			0
121.00	Acid Soluble Mg, AA, inorganic 965.09 (%)	0553	0.8275	0.0350				1			0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0568	0.6275	0.0350	0.7487	0.1059	0.0173	3	-1.14		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0354	0.7950	0.0100	0.7487	0.1059	0.0173	3	0.44		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0035	0.8235	0.0070	0.7487	0.1059	0.0173	3	0.71		0
121.32	Acid Soluble Mg, ICP, test portion 2006.03A-C (%)	0423	0.7665	0.0030				1			0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0494	0.7896	0.0914	1.221	0.7437	0.0346	3	-0.58		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0527	0.7941	0.0125	1.221	0.7437	0.0346	3	-0.57		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0472	2.080	0.0000	1.221	0.7437	0.0346	3	1.15		0
121.99	Acid Soluble Mg, Other (%)	0524	0.6962	0.0003	1.024	0.4722	0.0175	3	-0.69		0
121.99	Acid Soluble Mg, Other (%)	0389	0.8100	0.0000	1.024	0.4722	0.0175	3	-0.45		0
121.99	Acid Soluble Mg, Other (%)	0515	1.565	0.0523	1.024	0.4722	0.0175	3	1.15		0
143.99	Elemental S, Other (%)	0389	2.335	0.0100				1			0
145.99	Sulfate S, HCl soluble, Other (%)	0553	2.420	0.1200				1			0
146.00	Total S in Liquid, Gravimetric - sulfate, sulfite, thiosulfate, a... (%)	0522	2.575	0.0100				1			0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0472	1.570	0.0000	2.121	0.3595	0.0142	5	-1.34		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0521	2.002	0.0000	2.121	0.3595	0.0142	5	-0.29		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0527	2.166	0.0529	2.121	0.3595	0.0142	5	0.11		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0494	2.415	0.0068	2.121	0.3595	0.0142	5	0.71		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0563	2.454	0.0114	2.121	0.3595	0.0142	5	0.81		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0515	0.8108	0.5908	2.121	0.3595	0.0142	5	-3.18		1
148.99	Total S, Other (%)	0354	2.390	0.0000				1			0
149.04	S - HNO3 soluble, ICP (%)	0423	2.365	0.0300				2			0
149.04	S - HNO3 soluble, ICP (%)	0524	2.575	0.0161				2			0
151.00	Acid Soluble As, AA, test portion 2006.03 modified w/dual acid (ppm)	0534	0.2850	0.0100				1			0
151.30	Acid Soluble As, ICP (ppm)	0501	1.100	0.0000	1.264	0.1848	0.2018	3	-0.89		0
151.30	Acid Soluble As, ICP (ppm)	0524	1.229	0.1024	1.264	0.1848	0.2018	3	-0.19		0
151.30	Acid Soluble As, ICP (ppm)	0169	1.465	0.5030	1.264	0.1848	0.2018	3	1.08		0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
151.30	Acid Soluble As, ICP (ppm)	0255	0.0000	0.0000	1.264	0.1848	0.2018	3			4
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0136	1.015	0.1100	2.668	2.646	0.1220	4	-0.62		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0563	1.337	0.0181	2.668	2.646	0.1220	4	-0.50		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0548	1.705	0.0700	2.668	2.646	0.1220	4	-0.36		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0494	6.615	0.2900	2.668	2.646	0.1220	4	1.49		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0527	< 0.0001		2.668	2.646	0.1220	4			5
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0515	15.16	14.83				1			0
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0368	< 0.3					1			5
151.99	Acid Soluble As, Other (ppm)	0572	0.9250	0.0500				2			0
151.99	Acid Soluble As, Other (ppm)	0405	1.500	1.000				2			0
165.00	Acid Soluble B, Spectrophotometric (%)	0553	0.0120	0.0000				1			0
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0354	0.0200	0.0000				2			0
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0389	0.0200	0.0000				2			0
165.99	Acid Soluble B, Other (%)	0527	0.0052	0.0002	0.0081	0.0020	0.0001	5	-1.27		0
165.99	Acid Soluble B, Other (%)	0524	0.0074	0.0003	0.0081	0.0020	0.0001	5	-0.32		0
165.99	Acid Soluble B, Other (%)	0423	0.0080	0.0000	0.0081	0.0020	0.0001	5	-0.03		0
165.99	Acid Soluble B, Other (%)	0563	0.0098	0.0000	0.0081	0.0020	0.0001	5	0.77		0
165.99	Acid Soluble B, Other (%)	0472	0.0100	0.0000	0.0081	0.0020	0.0001	5	0.86		0
165.99	Acid Soluble B, Other (%)	0515	0.0076	0.0017	0.0081	0.0020	0.0001	5	-0.23		1
181.00	Acid Soluble Cd, AA, test portion 2006.03 modified w/dual acid (ppm)	0534	18.30	2.600				1			0
181.30	Acid Soluble Cd, ICP (ppm)	0444	23.14	0.0500	25.57	2.217	0.4717	10	-1.02	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0501	23.50	1.000	25.57	2.217	0.4717	10	-0.87	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0524	23.67	0.0314	25.57	2.217	0.4717	10	-0.80	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0255	24.64	0.0100	25.57	2.217	0.4717	10	-0.39	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0389	24.70	0.7500	25.57	2.217	0.4717	10	-0.37	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0027	25.50	1.000	25.57	2.217	0.4717	10	-0.03	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0169	26.80	0.0860	25.57	2.217	0.4717	10	0.52	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0394	27.39	0.3100	25.57	2.217	0.4717	10	0.76	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0485	27.65	1.280	25.57	2.217	0.4717	10	0.87	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0035	28.70	0.2000	25.57	2.217	0.4717	10	1.31	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0548	27.85	0.0400	30.03	2.579	0.4746	5	-0.85		0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0136	28.20	0.2000	30.03	2.579	0.4746	5	-0.71		0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0494	29.08	0.9667	30.03	2.579	0.4746	5	-0.37		0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0527	30.89	0.3768	30.03	2.579	0.4746	5	0.33		0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0563	34.14	0.7896	30.03	2.579	0.4746	5	1.59		0
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0368	29.80	0.6000				2			0
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0515	57.50	19.97				2			0
181.99	Acid Soluble Cd, Other (ppm)	0405	26.20	1.200				2			0
181.99	Acid Soluble Cd, Other (ppm)	0572	28.05	1.210				2			0
190.00	Water Soluble Cl, Titrimetric (%)	0553	< 0.1					0			5
191.30	Acid Soluble Cr, ICP (ppm)	0444	161.0	0.0000	178.6	14.04	4.092	8	-1.14	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0389	162.2	5.950	178.6	14.04	4.092	8	-1.06	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0524	172.1	12.48	178.6	14.04	4.092	8	-0.42	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0169	181.8	0.0280	178.6	14.04	4.092	8	0.21	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0035	182.5	3.000	178.6	14.04	4.092	8	0.26	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0394	183.9	1.280	178.6	14.04	4.092	8	0.35	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0501	190.0	0.0000	178.6	14.04	4.092	8	0.75	NA	0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
191.30	Acid Soluble Cr, ICP (ppm)	0027	195.0	10.00	178.6	14.04	4.092	8	1.07	NA	0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0136	166.0	16.00	185.1	11.62	6.169	5	-1.64		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0548	182.6	0.0800	185.1	11.62	6.169	5	-0.21		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0563	189.5	2.764	185.1	11.62	6.169	5	0.38		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0494	192.5	11.00	185.1	11.62	6.169	5	0.64		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0527	194.8	1.003	185.1	11.62	6.169	5	0.84		0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0368	185.0	2.000				2			0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0515	291.2	4.482				2			0
191.99	Acid Soluble Cr, Other (ppm)	0572	146.4	0.0600				2			0
191.99	Acid Soluble Cr, Other (ppm)	0405	181.5	3.000				2			0
202.30	Acid Soluble Co, ICP (ppm)	0035	0.8675	0.0130	1.297	0.4160	0.0234	3	-1.03		0
202.30	Acid Soluble Co, ICP (ppm)	0389	1.325	0.0100	1.297	0.4160	0.0234	3	0.07		0
202.30	Acid Soluble Co, ICP (ppm)	0524	1.698	0.0473	1.297	0.4160	0.0234	3	0.96		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0527	0.3719	0.0173	0.5775	0.3026	0.0519	3	-0.68		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0563	0.4358	0.0085	0.5775	0.3026	0.0519	3	-0.47		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0548	0.9250	0.1300	0.5775	0.3026	0.0519	3	1.15		0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0136	< 5		0.5775	0.3026	0.0519	3			5
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0501	0.4800	0.0000	7.806	12.33	3.358	3	-0.59		0
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0368	0.9000	0.4000	7.806	12.33	3.358	3	-0.56		0
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0515	22.04	9.674	7.806	12.33	3.358	3	1.15		0
202.99	Acid Soluble Co, Other (ppm)	0572	0.3750	0.0500				2			0
202.99	Acid Soluble Co, Other (ppm)	0405	0.4000	0.2000				2			0
202.99	Acid Soluble Co, Other (ppm)	0255	0.6965	1.393				2			4
221.00	Acid Soluble Cu, AA, inorganic 965.09 (%)	0553	< 0.005					0			5
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0402	0.0028	0.0004				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 (%)	0354	< 0.01					1			5
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0394	0.0011	0.0009				1			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0527	0.0003	0.0000				2			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0548	0.0006	0.0003				2			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0472	0.0000	0.0000				2			4
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0563	< 0.0001					2			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0136	< 0.0025					2			5
221.99	Acid Soluble Cu, Other (%)	0368	0.0003	0.0001				2			0
221.99	Acid Soluble Cu, Other (%)	0515	0.0036	0.0045				2			0
221.99	Acid Soluble Cu, Other (%)	0405	< 0.0001					2			5
221.99	Acid Soluble Cu, Other (%)	0572	< 0.0001					2			5
241.00	Acid Soluble Fe, AA, inorganic 965.09 (%)	0553	0.2550	0.0040				1			0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0035	0.4015	0.0070	0.4322	0.0267	0.0057	3	-1.15		0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0444	0.4450	0.0100	0.4322	0.0267	0.0057	3	0.48		0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0354	0.4500	0.0000	0.4322	0.0267	0.0057	3	0.67		0
241.32	Acid Soluble Fe, ICP, test portion 2006.03A-C (%)	0423	0.3955	0.0010				1			0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0527	0.4082	0.0084	0.6940	0.5474	0.0142	4	-0.52		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0494	0.4199	0.0329	0.6940	0.5474	0.0142	4	-0.50		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0563	0.4331	0.0053	0.6940	0.5474	0.0142	4	-0.48		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0472	1.515	0.0100	0.6940	0.5474	0.0142	4	1.50		0
241.99	Acid Soluble Fe, Other (%)	0524	0.4056	0.0128	0.7580	0.5808	0.0859	3	-0.61		0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
241.99	Acid Soluble Fe, Other (%)	0389	0.4400	0.0000	0.7580	0.5808	0.0859	3	-0.55		0
241.99	Acid Soluble Fe, Other (%)	0515	1.428	0.2450	0.7580	0.5808	0.0859	3	1.15		0
251.00	Acid Soluble Pb, AA, test portion 2006.03 modified w/dual acid (ppm)	0534	< 2					0			5
251.30	Acid Soluble Pb, ICP (ppm)	0524	0.1225	0.0234	1.151	1.323	0.0417	5	-0.68		0
251.30	Acid Soluble Pb, ICP (ppm)	0501	0.2000	0.0000	1.151	1.323	0.0417	5	-0.63		0
251.30	Acid Soluble Pb, ICP (ppm)	0394	0.5585	0.0670	1.151	1.323	0.0417	5	-0.39		0
251.30	Acid Soluble Pb, ICP (ppm)	0035	1.605	0.0500	1.151	1.323	0.0417	5	0.30		0
251.30	Acid Soluble Pb, ICP (ppm)	0169	3.269	0.0680	1.151	1.323	0.0417	5	1.40		0
251.30	Acid Soluble Pb, ICP (ppm)	0255	0.0000	0.0000	1.151	1.323	0.0417	5			4
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0563	0.1685	0.0112				2			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0548	0.7800	0.0800				2			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0527	< 0.0001					2			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0136	< 3					2			5
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0515	24.08	2.659				1			0
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0368	< 0.6					1			5
251.99	Acid Soluble Pb, Other (ppm)	0405	0.3000	0.0000				1			0
251.99	Acid Soluble Pb, Other (ppm)	0572	< 0.09					1			5
261.00	Acid Soluble Mn, AA, Mn2+ only (%)	0553	0.0060	0.0000				1			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0035	0.0069	0.0003				1			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0354	< 0.01					1			5
261.34	Acid Soluble Mn, ICP, test portion 2006.03A-C (%)	0423	0.0070	0.0000				1			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0527	0.0066	0.0001	0.0101	0.0066	0.0004	4	-0.54		0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0494	0.0070	0.0013	0.0101	0.0066	0.0004	4	-0.48		0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0563	0.0070	0.0002	0.0101	0.0066	0.0004	4	-0.47		0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0472	0.0200	0.0000	0.0101	0.0066	0.0004	4	1.50		0
261.99	Acid Soluble Mn, Other (%)	0524	0.0060	0.0004	0.0087	0.0043	0.0030	3	-0.63		0
261.99	Acid Soluble Mn, Other (%)	0389	0.0065	0.0000	0.0087	0.0043	0.0030	3	-0.52		0
261.99	Acid Soluble Mn, Other (%)	0515	0.0137	0.0086	0.0087	0.0043	0.0030	3	1.15		0
281.00	Acid Soluble Hg, AA (ppm)	0534	< 0.05					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0515	0.0000	0.0000				0			4
281.30	Acid Soluble Hg, ICP (ppm)	0527	< 0.0001					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0563	< 0.01					0			5
281.30	Acid Soluble Hg, ICP (ppm)	0501	< 0.1					0			5
281.99	Acid Soluble Hg, Other (ppm)	0368	0.0001	0.0000	0.0032	0.0046	0.0031	3	-0.67		0
281.99	Acid Soluble Hg, Other (ppm)	0524	0.0010	0.0002	0.0032	0.0046	0.0031	3	-0.48		0
281.99	Acid Soluble Hg, Other (ppm)	0035	0.0085	0.0090	0.0032	0.0046	0.0031	3	1.15		0
281.99	Acid Soluble Hg, Other (ppm)	0572	< 0.008		0.0032	0.0046	0.0031	3			5
281.99	Acid Soluble Hg, Other (ppm)	0405	< 0.01		0.0032	0.0046	0.0031	3			5
289.30	Acid Soluble Mo, ICP (ppm)	0035	2.430	0.3800	2.795	0.3819	0.3846	4	-0.96		0
289.30	Acid Soluble Mo, ICP (ppm)	0255	2.585	0.5700	2.795	0.3819	0.3846	4	-0.55		0
289.30	Acid Soluble Mo, ICP (ppm)	0524	2.866	0.1884	2.795	0.3819	0.3846	4	0.19		0
289.30	Acid Soluble Mo, ICP (ppm)	0402	3.300	0.4000	2.795	0.3819	0.3846	4	1.32		0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0563	2.507	0.0069	2.891	0.3640	0.1250	4	-1.06		0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0494	2.655	0.2500	2.891	0.3640	0.1250	4	-0.65		0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0548	3.175	0.1300	2.891	0.3640	0.1250	4	0.78		0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0527	3.228	0.1132	2.891	0.3640	0.1250	4	0.92		0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0136	< 5		2.891	0.3640	0.1250	4			5

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0501	3.300	0.0000	9.446	10.17	13.32	3	-0.60		0
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0368	3.850	0.7000	9.446	10.17	13.32	3	-0.55		0
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0515	21.19	39.27	9.446	10.17	13.32	3	1.15		0
289.99	Acid Soluble Mo, Other (ppm)	0405	3.005	0.2100				1			0
291.30	Acid Soluble Ni, ICP (ppm)	0485	2.426	0.0170	5.719	1.423	0.1779	7	-2.09	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0169	4.740	0.2180	5.719	1.423	0.1779	7	-0.62	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0444	5.740	0.3200	5.719	1.423	0.1779	7	0.01	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0524	5.873	0.0950	5.719	1.423	0.1779	7	0.10	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0389	5.900	0.2000	5.719	1.423	0.1779	7	0.12	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0394	6.905	0.2150	5.719	1.423	0.1779	7	0.75	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0035	7.290	0.1800	5.719	1.423	0.1779	7	1.00	NA	0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0563	5.368	0.0586	8.484	3.544	0.6756	5	-0.88		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0136	6.110	0.5200	8.484	3.544	0.6756	5	-0.67		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0527	7.097	0.1094	8.484	3.544	0.6756	5	-0.39		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0494	9.765	2.670	8.484	3.544	0.6756	5	0.36		0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0548	14.08	0.0200	8.484	3.544	0.6756	5	1.58		0
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0501	7.150	0.3000	20.97	23.68	12.47	3	-0.58		0
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0368	7.450	0.5000	20.97	23.68	12.47	3	-0.57		0
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0515	48.32	36.62	20.97	23.68	12.47	3	1.15		0
291.99	Acid Soluble Ni, Other (ppm)	0572	5.240	0.6800	10.19	7.104	0.3200	3	-0.70		0
291.99	Acid Soluble Ni, Other (ppm)	0405	7.000	0.0000	10.19	7.104	0.3200	3	-0.45		0
291.99	Acid Soluble Ni, Other (ppm)	0255	18.33	0.2800	10.19	7.104	0.3200	3	1.15		0
301.30	Acid Soluble Se, ICP (ppm)	0524	0.6745	0.0546				2			0
301.30	Acid Soluble Se, ICP (ppm)	0501	1.850	0.1000				2			0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0548	1.155	0.0700	1.782	0.8411	0.1788	3	-0.75		0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0563	1.454	0.0298	1.782	0.8411	0.1788	3	-0.39		0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0527	2.738	0.4367	1.782	0.8411	0.1788	3	1.14		0
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0515	16.52	11.71				1			0
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0368	< 1					1			5
301.99	Acid Soluble Se, Other (ppm)	0572	1.165	0.0100				1			0
301.99	Acid Soluble Se, Other (ppm)	0255	0.0000	0.0000				1			4
301.99	Acid Soluble Se, Other (ppm)	0405	< 1					1			5
311.00	Sodium, AA (%)	0553	0.1780	0.0020				1			0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0423	0.1590	0.0020	0.1708	0.0149	0.0031	3	-0.79		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	0.1658	0.0063	0.1708	0.0149	0.0031	3	-0.34		0
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0035	0.1875	0.0010	0.1708	0.0149	0.0031	3	1.12		0
311.99	Sodium, Other (%)	0354	0.1850	0.0100				1			0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (%)	0553	0.0410	0.0000	95.99	166.2	1.867	3	-0.58		0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (%)	0534	0.0430	0.0020	95.99	166.2	1.867	3	-0.58		0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (%)	0485	287.9	5.600	95.99	166.2	1.867	3	1.15		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0402	0.0262	0.0026	0.0386	0.0081	0.0006	5	-1.33		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0255	0.0360	0.0000	0.0386	0.0081	0.0006	5	-0.28		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0354	0.0400	0.0000	0.0386	0.0081	0.0006	5	0.15		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0444	0.0430	0.0000	0.0386	0.0081	0.0006	5	0.47		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0234	0.0478	0.0003	0.0386	0.0081	0.0006	5	0.98		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0035	0.0483	0.0077	0.0386	0.0081	0.0006	5	1.03		1
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0394	0.0395	0.0022				2			0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0423	0.0455	0.0010				2			0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0136	0.0350	0.0040	0.0428	0.0088	0.0022	6	-0.79	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0494	0.0365	0.0034	0.0428	0.0088	0.0022	6	-0.64	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0043	0.0400	0.0040	0.0428	0.0088	0.0022	6	-0.28	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0527	0.0421	0.0005	0.0428	0.0088	0.0022	6	-0.07	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0563	0.0471	0.0012	0.0428	0.0088	0.0022	6	0.44	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0472	0.0900	0.0000	0.0428	0.0088	0.0022	6	4.79	High	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0548	0.0550	0.0300	0.0428	0.0088	0.0022	6	1.24	High	1
321.99	Acid Soluble Zn, Other (%)	0501	0.0280	0.0000	0.0375	0.0025	0.0013	7	-3.42	Low	0
321.99	Acid Soluble Zn, Other (%)	0572	0.0356	0.0051	0.0375	0.0025	0.0013	7	-0.71	OK	0
321.99	Acid Soluble Zn, Other (%)	0368	0.0370	0.0006	0.0375	0.0025	0.0013	7	-0.19	OK	0
321.99	Acid Soluble Zn, Other (%)	0027	0.0385	0.0010	0.0375	0.0025	0.0013	7	0.35	OK	0
321.99	Acid Soluble Zn, Other (%)	0405	0.0389	0.0020	0.0375	0.0025	0.0013	7	0.49	OK	0
321.99	Acid Soluble Zn, Other (%)	0524	0.0391	0.0001	0.0375	0.0025	0.0013	7	0.54	OK	0
321.99	Acid Soluble Zn, Other (%)	0389	0.0400	0.0000	0.0375	0.0025	0.0013	7	0.88	OK	0
321.99	Acid Soluble Zn, Other (%)	0515	0.0879	0.0126	0.0375	0.0025	0.0013	7	18.05	High	1

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