



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 110

Sample # 240111

Regular PT Scheme

Labs Reporting: 59

MAP/Zn

Statistical Summary

Issue Date : 02/29/2024

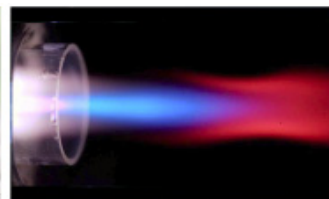
Method Code	Analyte & Method Sample # 240111	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Horwitz %RSD
001.10	Ammoniacal N, Magnesium Oxide Method (%)	6	6	11.75	0.2858	11.75		0.3241	0.1654	2.76%		0.1650	2.76%
001.99	Ammoniacal N, Other (%)	14	13	11.87	0.5040	11.86		0.4179	0.1449	3.52%		0.1140	2.76%
005.99	Urea N, Other (%)	1		0.3103									
010.12	Total N, Salicylic (12%)	2	2	12.18	0.4596								
010.60	Total N, Combustion (12%)	40	39	11.98	0.2367	11.98	0.6097	0.1772	0.0355	1.48%	0.68	0.0775	2.75%
010.99	Total N, Other (12%)	7	6	11.90	0.3342	11.95	0.6092	0.3912	0.1997	3.28%	1.50	0.0512	2.75%
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	3	3	40.64	0.1834	40.64		0.1834	0.1324	0.45%		0.0933	1.57%
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	7	6	40.74	0.3882	40.55		0.1352	0.0690	0.33%		0.0680	1.57%
020.50	Total P2O5, ICP (%)	17	16	40.26	2.348	39.99		1.944	0.6073	4.86%		0.3840	1.58%
020.99	Total P2O5, Other (%)	6	5	41.39	1.654	40.86		1.131	0.6320	2.77%		0.0480	1.56%
040.50	Indirect Available P2O5, ICP (40%)	1		39.50									
041.10	Direct Available P2O5, Gravimetric Quinolinium (40%)	4	4	40.56	0.3663	40.56	0.9084	0.3663	0.2289	0.90%	0.94	0.2828	1.57%
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA	7	7	40.33	0.5684	40.33	0.9050	0.6446	0.3045	1.60%	1.66	0.1127	1.57%
041.20	Direct Available P2O5, Spectrophotometric (40%)	2	2	40.35	0.0707								
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext.	6	6	33.70	14.31	38.88	0.8776	2.143	1.094	5.51%	5.69	0.3807	1.60%
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (40%)	1		40.23									
041.50	Direct Available P2O5, ICP (40%)	2	2	39.41	0.4844								
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (40%)	4	4	41.03	1.260	41.03	0.9154	1.260	0.7872	3.07%	3.21	0.2870	1.56%
041.99	Direct Available P2O5, Other (40%)	4	4	40.15	0.3281	40.15	0.9022	0.3281	0.2050	0.82%	0.85	0.1425	1.58%
048.10	Water Soluble P2O5, Gravimetric Quinolinium (%)	2	2	36.08	0.5940								
048.20	Water Soluble P2O5, Spectrophotometric (%)	1		34.20									
048.50	Water Soluble P2O5, ICP (%)	1		36.86									
048.99	Water Soluble P2O5, Other (%)	1		36.50									
050.50	Soluble K2O, ICP (Oxalate) (%)	1		0.0334									
050.51	Soluble K2O, ICP (Citrate) (%)	1		0.1600									
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	2	1	0.1650	0.0495								
050.99	Soluble K2O, Other (%)	3	3	0.1488	0.0138	0.1488	0.4100	0.0138	0.0099	9.25%	0.08	0.0102	5.33%
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	2	2	0.2305	0.0700								
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	2	1	0.1425	0.1874								

Method Code	Analyte & Method Sample # 240111	# 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
101.99	Acid Soluble Ca, Other (%)	1		0.2450									
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	2	2	0.6870	0.0255								
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	3	3	0.7318	0.1205	0.7318	0.2366	0.1205	0.0869	16.46%	1.19	0.0149	4.19%
121.99	Acid Soluble Mg, Other (%)	2	2	0.6981	0.0784								
143.00	Elemental S, Gravimetric Sulfur - carbon disulfide soluble sulfu	1		4.340									
143.99	Elemental S, Other (%)	4	4	8.279	1.726	8.279		1.726	1.079	20.85%		0.1096	2.91%
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	6	6	7.156	2.263	7.156		2.566	1.310	35.87%		0.1187	2.97%
145.99	Sulfate S, HCl soluble, Other (%)	3	3	6.703	2.643	6.703		2.643	1.907	39.43%		0.0600	3.00%
148.00	Total S, Combustion (10%)	9	9	10.35	0.3371	10.37	0.7183	0.3483	0.1451	3.36%	1.13	0.2329	2.81%
148.01	Total S, Gravimetric - sulfate and elemental (10%)	5	5	8.658	1.860	8.658	0.6329	1.860	1.040	21.48%	6.85	0.2163	2.89%
148.07	Total S, ICP, test portion as in 2017.02 (10%)	11	11	9.880	1.259	9.875	0.6937	0.7488	0.2822	7.58%	2.51	0.2404	2.83%
148.99	Total S, Other (10%)	8	7	9.553	1.862	9.856	0.6928	0.6425	0.3036	6.52%	2.16	0.0691	2.83%
149.04	S - HNO3 soluble, ICP (%)	1		5.783									
151.00	Acid Soluble As, AA, test portion 2006.03 modified w/dual acid	1		10.45									
151.30	Acid Soluble As, ICP (ppm)	2	1	6.404	9.057								
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	2	2	13.53	2.793								
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	3	2	7.886	6.656	11.70		1.069	0.9446	9.13%		0.2882	11.05%
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	2	1	4.968	6.763								
151.99	Acid Soluble As, Other (ppm)	1		11.45									
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	1		0.0100									
165.99	Acid Soluble B, Other (%)	3	2	0.0082	0.0031	0.0073	0.0041	0.0038	0.0033	51.65%	2.15	0.0001	8.38%
181.30	Acid Soluble Cd, ICP (ppm)	2	2	4.909	0.0718								
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	2	2	5.800	0.2828								
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	3	2	3.542	2.904	5.219		0.0586	0.0518	1.12%		0.1381	12.47%
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	2	1	2.317	3.088								
181.99	Acid Soluble Cd, Other (ppm)	1		5.500									
191.00	Acid Soluble Cr, AA, test portion 2006.03 modified w/dual acid	1		90.55									
191.30	Acid Soluble Cr, ICP (ppm)	1		115.5									
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	2	2	131.2	3.323								
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	3	3	121.4	6.395	121.4		6.395	4.615	5.27%		2.590	7.77%
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	2	2	105.8	1.800								
191.99	Acid Soluble Cr, Other (ppm)	1		127.6									
202.30	Acid Soluble Co, ICP (ppm)	1		4.090									
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	2	2	2.650	0.4950								
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	3	1	0.8035	1.174	2.650	1.7950	0.4950	0.6187	18.68%	0.64	0.0000	13.81%
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	3	2	1.575	1.304	2.293	1.6878	0.5551	0.4906	24.21%	0.77	0.2150	14.12%
202.99	Acid Soluble Co, Other (ppm)	2	1	4.235	2.878								
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	2	0	0.0050	0.0071								
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	2	1	0.0002	0.0000								
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	2	2	0.0003	0.0000								

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221.99	Acid Soluble Cu, Other (%)	3	3	0.0007	0.0006	0.0007	0.0051	0.0006	0.0005	89.21%	0.29	0.0009	11.94%
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	1		0.8050									
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	3	3	1.400	0.9887	1.400	0.1450	0.9887	0.7135	70.63%	15.89	1.027	3.80%
241.99	Acid Soluble Fe, Other (%)	2	2	0.6805	0.1843								
251.00	Acid Soluble Pb, AA, test portion 2006.03 modified w/dual acid	1		1.250									
251.30	Acid Soluble Pb, ICP (ppm)	2	1	4.077	5.766								
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	2	2	15.15	4.031								
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	2	1	5.110	6.930								
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	2	1	6.458	8.828								
251.99	Acid Soluble Pb, Other (ppm)	1		14.05									
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	1		0.0200									
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	3	2	0.0157	0.0124	0.0227	0.0073	0.0038	0.0033	16.68%	1.21	0.0001	7.07%
261.99	Acid Soluble Mn, Other (%)	2	1	0.0127	0.0164								
281.30	Acid Soluble Hg, ICP (ppm)	3	0	0.7003	1.127	0.0227		0.0038		16.68%		0.0001	22.00%
281.99	Acid Soluble Hg, Other (ppm)	2	1	0.0074	0.0037								
289.30	Acid Soluble Mo, ICP (ppm)	3	3	8.713	1.381	8.713	3.6138	1.381	0.9966	15.85%	0.89	0.2136	11.55%
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	2	2	9.950	0.7778								
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	3	2	6.646	5.584	9.855	3.9564	0.7844	0.6933	7.96%	0.46	0.4965	11.34%
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	3	2	6.473	5.464	9.620	3.8860	0.5233	0.4625	5.44%	0.31	1.060	11.38%
289.99	Acid Soluble Mo, Other (ppm)	1		9.250									
291.00	Acid Soluble Ni, AA, test portion 2006.03 modified w/dual acid	1		16.45									
291.30	Acid Soluble Ni, ICP (ppm)	1		17.41									
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	2	2	17.25	2.475								
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	3	2	11.51	9.743	17.13		0.3824	0.3380	2.23%		2.192	10.43%
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	3	2	11.39	9.711	17.00		0.0707	0.0625	0.42%		0.2000	10.44%
291.99	Acid Soluble Ni, Other (ppm)	2	2	28.55	17.89								
301.30	Acid Soluble Se, ICP (ppm)	1		0.2309									
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	2	0	5.150	6.859								
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	2	0	0.1400	0.1838								
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	2	0	0.8130	0.8301								
301.99	Acid Soluble Se, Other (ppm)	2	0	0.1500	0.2121								
311.33	Sodium, ICP, test portion as in 2017.02 (%)	1		0.1680									
311.99	Sodium, Other (%)	1		0.1800									
321.00	Acid Soluble Zn, AA, inorganic 965.09 (1%)	4	4	0.9676	0.0601	0.9676	0.1018	0.0601	0.0376	6.21%	1.38	0.0242	4.02%
321.03	Acid Soluble Zn, AA, 965.09, test portion 2006.03A-C w/dual a	1		0.9650									
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	13	12	0.9770	0.0793	0.9703	0.1020	0.0879	0.0317	9.06%	2.01	0.0289	4.02%
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (1%)	4	4	1.005	0.0639	1.005	0.1055	0.0639	0.0399	6.36%	1.41	0.0400	4.00%
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	14	13	0.9617	0.0854	0.9720	0.1022	0.0789	0.0273	8.11%	1.80	0.0187	4.02%
321.99	Acid Soluble Zn, Other (1%)	13	13	0.9946	0.0883	0.9910	0.1041	0.0814	0.0282	8.22%	1.82	0.0470	4.01%
325.30	Water Soluble Zn, ICP (%)	1		0.7305									

Method Code	Analyte & Method Sample # 240111	# 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
325.99	Water Soluble Zn, Other (%)	2	2	0.8528	0.1729								

The Method IA Ratio = $2.33 * \text{Robust SD} / \text{IA at the Method Assigned Value}$. 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 # 240111

Regular PT Scheme

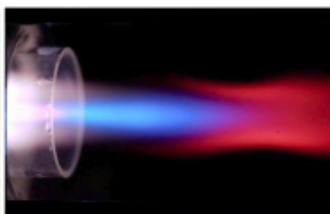
MAP/Zn

Method Precision Report

Issue Date : 02/29/2024

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
001.10	Ammoniacal N, Magnesium Oxide Method (%)	6	6	11.75	0.2858	0.2701	0.1321	0.3006	2.30%	1.12%	2.56%	2.276
001.99	Ammoniacal N, Other (%)	14	11	11.86	0.3033	0.2965	0.0905	0.3099	2.50%	0.76%	2.61%	3.427
010.60	Total N, Combustion (12%)	40	36	11.94	0.1742	0.1667	0.0712	0.1813	1.40%	0.60%	1.52%	2.547
010.99	Total N, Other (12%)	7	6	11.95	0.3450	0.3440	0.0374	0.3460	2.88%	0.31%	2.90%	9.258
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	7	6	40.65	0.3276	0.3255	0.0526	0.3297	0.80%	0.13%	0.81%	6.268
020.50	Total P2O5, ICP (%)	17	15	39.70	1.773	1.755	0.3601	1.791	4.42%	0.91%	4.51%	4.975
020.99	Total P2O5, Other (%)	6	5	40.86	1.131	1.130	0.0402	1.131	2.77%	0.10%	2.77%	28.10
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA E	7	7	40.33	0.5684	0.5647	0.0923	0.5722	1.40%	0.23%	1.42%	6.199
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	6	5	39.52	1.168	1.145	0.3262	1.191	2.90%	0.83%	3.01%	3.650
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	6	6	7.156	2.263	2.262	0.1084	2.265	31.61%	1.52%	31.65%	20.88
148.00	Total S, Combustion (10%)	9	9	10.35	0.3371	0.3153	0.1687	0.3576	3.05%	1.63%	3.45%	2.120
148.07	Total S, ICP, test portion as in 2017.02 (10%)	11	10	9.895	1.326	1.320	0.1811	1.332	13.34%	1.83%	13.46%	7.356
148.99	Total S, Other (10%)	8	6	10.17	0.7810	0.7803	0.0449	0.7816	7.68%	0.44%	7.69%	17.41
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	13	12	0.9718	0.0804	0.0792	0.0191	0.0815	8.15%	1.97%	8.39%	4.262
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	14	13	0.9743	0.0741	0.0732	0.0162	0.0750	7.51%	1.66%	7.70%	4.622
321.99	Acid Soluble Zn, Other (1%)	13	13	0.9946	0.0883	0.0834	0.0410	0.0930	8.39%	4.12%	9.35%	2.266

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



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 110

Sample # 240111

Regular PT Scheme

Labs Reporting: 59

MAP/Zn

Lab Values

Issue Date : 02/29/2024

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0451	11.38	0.2400	11.75	0.3241	0.1650	6	-1.01	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0389	11.40	0.0900	11.75	0.3241	0.1650	6	-0.97	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0498	11.85	0.3000	11.75	0.3241	0.1650	6	0.28	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0444	11.90	0.2000	11.75	0.3241	0.1650	6	0.41	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0547	11.95	0.1000	11.75	0.3241	0.1650	6	0.55	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0619	12.02	0.0600	11.75	0.3241	0.1650	6	0.74	NA	0
001.99	Ammoniacal N, Other (%)	0368	10.64	0.1555	11.86	0.4179	0.1140	13	-2.90	NA	0
001.99	Ammoniacal N, Other (%)	0524	11.39	0.2116	11.86	0.4179	0.1140	13	-1.12	NA	0
001.99	Ammoniacal N, Other (%)	0564	11.47	0.0500	11.86	0.4179	0.1140	13	-0.94	NA	0
001.99	Ammoniacal N, Other (%)	0405	11.65	0.0300	11.86	0.4179	0.1140	13	-0.51	NA	0
001.99	Ammoniacal N, Other (%)	0600	11.78	0.0500	11.86	0.4179	0.1140	13	-0.20	NA	0
001.99	Ammoniacal N, Other (%)	0220	11.81	0.1800	11.86	0.4179	0.1140	13	-0.11	NA	0
001.99	Ammoniacal N, Other (%)	0027	11.88	0.0150	11.86	0.4179	0.1140	13	0.05	NA	0
001.99	Ammoniacal N, Other (%)	0559	11.95	0.0100	11.86	0.4179	0.1140	13	0.21	NA	0
001.99	Ammoniacal N, Other (%)	0562	11.95	0.0100	11.86	0.4179	0.1140	13	0.21	NA	0
001.99	Ammoniacal N, Other (%)	0619	12.02	0.0600	11.86	0.4179	0.1140	13	0.39	NA	0
001.99	Ammoniacal N, Other (%)	0635	12.18	0.2000	11.86	0.4179	0.1140	13	0.77	NA	0
001.99	Ammoniacal N, Other (%)	0255	12.42	0.4200	11.86	0.4179	0.1140	13	1.35	NA	0
001.99	Ammoniacal N, Other (%)	0537	12.45	0.2300	11.86	0.4179	0.1140	13	1.41	NA	0
001.99	Ammoniacal N, Other (%)	0553	12.63	1.100	11.86	0.4179	0.1140	13	1.85	NA	1
005.99	Urea N, Other (%)	0524	0.3103	0.0363				1			0
010.12	Total N, Salicylic (12%)	0498	11.85	0.3000				2			0
010.12	Total N, Salicylic (12%)	0568	12.50	0.0000				2			0
010.60	Total N, Combustion (12%)	0422	11.51	0.1200	11.98	0.1772	0.0775	39	-2.63	OK	0
010.60	Total N, Combustion (12%)	0042	11.55	0.1000	11.98	0.1772	0.0775	39	-2.41	OK	0
010.60	Total N, Combustion (12%)	0421	11.61	0.1400	11.98	0.1772	0.0775	39	-2.07	OK	0
010.60	Total N, Combustion (12%)	0023	11.61	0.0250	11.98	0.1772	0.0775	39	-2.06	OK	0
010.60	Total N, Combustion (12%)	0472	11.73	0.0600	11.98	0.1772	0.0775	39	-1.39	OK	0
010.60	Total N, Combustion (12%)	0073	11.77	0.0200	11.98	0.1772	0.0775	39	-1.17	OK	0
010.60	Total N, Combustion (12%)	0136	11.80	0.1300	11.98	0.1772	0.0775	39	-1.03	OK	0
010.60	Total N, Combustion (12%)	0095	11.82	0.0600	11.98	0.1772	0.0775	39	-0.88	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				
010.60	Total N, Combustion (12%)	0527	11.85	0.0240	11.98	0.1772	0.0775	39	-0.71	OK	0
010.60	Total N, Combustion (12%)	0543	11.87	0.0500	11.98	0.1772	0.0775	39	-0.63	OK	0
010.60	Total N, Combustion (12%)	0157	11.90	0.0000	11.98	0.1772	0.0775	39	-0.43	OK	0
010.60	Total N, Combustion (12%)	0234	11.91	0.1900	11.98	0.1772	0.0775	39	-0.40	OK	0
010.60	Total N, Combustion (12%)	0220	11.92	0.1500	11.98	0.1772	0.0775	39	-0.35	OK	0
010.60	Total N, Combustion (12%)	0389	11.94	0.0100	11.98	0.1772	0.0775	39	-0.24	OK	0
010.60	Total N, Combustion (12%)	0231	11.95	0.0200	11.98	0.1772	0.0775	39	-0.15	OK	0
010.60	Total N, Combustion (12%)	0072	11.97	0.0700	11.98	0.1772	0.0775	39	-0.07	OK	0
010.60	Total N, Combustion (12%)	0405	11.97	0.0400	11.98	0.1772	0.0775	39	-0.04	OK	0
010.60	Total N, Combustion (12%)	0561	11.99	0.0200	11.98	0.1772	0.0775	39	0.08	OK	0
010.60	Total N, Combustion (12%)	0102	12.00	0.0100	11.98	0.1772	0.0775	39	0.10	OK	0
010.60	Total N, Combustion (12%)	0137	12.00	0.0330	11.98	0.1772	0.0775	39	0.11	OK	0
010.60	Total N, Combustion (12%)	0043	12.00	0.0600	11.98	0.1772	0.0775	39	0.13	OK	0
010.60	Total N, Combustion (12%)	0354	12.00	0.0000	11.98	0.1772	0.0775	39	0.13	OK	0
010.60	Total N, Combustion (12%)	0452	12.00	0.1670	11.98	0.1772	0.0775	39	0.15	OK	0
010.60	Total N, Combustion (12%)	0501	12.01	0.0200	11.98	0.1772	0.0775	39	0.19	OK	0
010.60	Total N, Combustion (12%)	0292	12.02	0.0900	11.98	0.1772	0.0775	39	0.22	OK	0
010.60	Total N, Combustion (12%)	0451	12.02	0.1000	11.98	0.1772	0.0775	39	0.24	OK	0
010.60	Total N, Combustion (12%)	0114	12.04	0.0300	11.98	0.1772	0.0775	39	0.33	OK	0
010.60	Total N, Combustion (12%)	0291	12.04	0.0200	11.98	0.1772	0.0775	39	0.36	OK	0
010.60	Total N, Combustion (12%)	0368	12.06	0.2500	11.98	0.1772	0.0775	39	0.47	OK	0
010.60	Total N, Combustion (12%)	0547	12.07	0.0100	11.98	0.1772	0.0775	39	0.50	OK	0
010.60	Total N, Combustion (12%)	0040	12.10	0.2000	11.98	0.1772	0.0775	39	0.70	OK	0
010.60	Total N, Combustion (12%)	0055	12.14	0.0500	11.98	0.1772	0.0775	39	0.89	OK	0
010.60	Total N, Combustion (12%)	0049	12.15	0.0300	11.98	0.1772	0.0775	39	0.95	OK	0
010.60	Total N, Combustion (12%)	0177	12.15	0.1670	11.98	0.1772	0.0775	39	0.96	OK	0
010.60	Total N, Combustion (12%)	0029	12.15	0.2000	11.98	0.1772	0.0775	39	0.98	OK	0
010.60	Total N, Combustion (12%)	0169	12.26	0.0200	11.98	0.1772	0.0775	39	1.60	OK	0
010.60	Total N, Combustion (12%)	0588	12.33	0.3900	11.98	0.1772	0.0775	39	1.97	OK	0
010.60	Total N, Combustion (12%)	0521	12.64	0.0000	11.98	0.1772	0.0775	39	3.74	High	0
010.60	Total N, Combustion (12%)	0255	12.68	0.0100	11.98	0.1772	0.0775	39	3.97	High	0
010.60	Total N, Combustion (12%)	0028	11.85	0.4300	11.98	0.1772	0.0775	39	-0.74	OK	1
010.99	Total N, Other (12%)	0220	11.41	0.0800	11.95	0.3912	0.0512	6	-1.22	OK	0
010.99	Total N, Other (12%)	0524	11.73	0.0759	11.95	0.3912	0.0512	6	-0.50	OK	0
010.99	Total N, Other (12%)	0600	11.87	0.0600	11.95	0.3912	0.0512	6	-0.17	OK	0
010.99	Total N, Other (12%)	0564	12.10	0.0000	11.95	0.3912	0.0512	6	0.35	OK	0
010.99	Total N, Other (12%)	0559	12.29	0.0100	11.95	0.3912	0.0512	6	0.77	OK	0
010.99	Total N, Other (12%)	0562	12.29	0.0300	11.95	0.3912	0.0512	6	0.77	OK	0
010.99	Total N, Other (12%)	0518	11.65	0.3000	11.95	0.3912	0.0512	6	-0.67	OK	1
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0444	40.50	0.1600	40.64	0.1834	0.0933	3	-0.78		0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0114	40.58	0.0200	40.64	0.1834	0.0933	3	-0.35		0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0619	40.85	0.1000	40.64	0.1834	0.0933	3	1.13		0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0231	40.44	0.1400	40.55	0.1352	0.0680	6	-0.75	NA	0

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			Value	Range	Rob Mean	Rob SD	Rob R-bar				
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0405	40.44	0.0000	40.55	0.1352	0.0680	6	-0.75	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0169	40.53	0.0400	40.55	0.1352	0.0680	6	-0.16	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0547	40.55	0.1000	40.55	0.1352	0.0680	6	-0.03	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0561	40.61	0.0200	40.55	0.1352	0.0680	6	0.37	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0292	41.30	0.0400	40.55	0.1352	0.0680	6	4.91	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0498	41.30	0.8000	40.55	0.1352	0.0680	6	4.91	NA	1
020.50	Total P2O5, ICP (%)	0389	36.00	0.4000	39.99	1.944	0.3840	16	-2.05	NA	0
020.50	Total P2O5, ICP (%)	0472	36.70	0.2600	39.99	1.944	0.3840	16	-1.69	NA	0
020.50	Total P2O5, ICP (%)	0433	38.54	0.2100	39.99	1.944	0.3840	16	-0.75	NA	0
020.50	Total P2O5, ICP (%)	0368	39.28	1.370	39.99	1.944	0.3840	16	-0.37	NA	0
020.50	Total P2O5, ICP (%)	0255	39.58	0.8930	39.99	1.944	0.3840	16	-0.21	NA	0
020.50	Total P2O5, ICP (%)	0543	39.61	0.1360	39.99	1.944	0.3840	16	-0.20	NA	0
020.50	Total P2O5, ICP (%)	0521	39.74	0.0000	39.99	1.944	0.3840	16	-0.13	NA	0
020.50	Total P2O5, ICP (%)	0444	39.91	0.0600	39.99	1.944	0.3840	16	-0.04	NA	0
020.50	Total P2O5, ICP (%)	0527	39.96	0.1166	39.99	1.944	0.3840	16	-0.01	NA	0
020.50	Total P2O5, ICP (%)	0291	40.07	0.0300	39.99	1.944	0.3840	16	0.04	NA	0
020.50	Total P2O5, ICP (%)	0501	40.10	0.2000	39.99	1.944	0.3840	16	0.06	NA	0
020.50	Total P2O5, ICP (%)	0451	40.11	0.2000	39.99	1.944	0.3840	16	0.06	NA	0
020.50	Total P2O5, ICP (%)	0234	40.35	0.1000	39.99	1.944	0.3840	16	0.19	NA	0
020.50	Total P2O5, ICP (%)	0422	42.69	0.3600	39.99	1.944	0.3840	16	1.39	NA	0
020.50	Total P2O5, ICP (%)	0588	42.84	0.8300	39.99	1.944	0.3840	16	1.46	NA	0
020.50	Total P2O5, ICP (%)	0524	43.22	2.581	39.99	1.944	0.3840	16	1.66	NA	0
020.50	Total P2O5, ICP (%)	0042	45.80	5.000	39.99	1.944	0.3840	16	2.99	NA	1
020.99	Total P2O5, Other (%)	0564	39.55	0.0400	40.86	1.131	0.0480	5	-1.01		0
020.99	Total P2O5, Other (%)	0600	39.93	0.0600	40.86	1.131	0.0480	5	-0.72		0
020.99	Total P2O5, Other (%)	0619	40.85	0.1000	40.86	1.131	0.0480	5	-0.01		0
020.99	Total P2O5, Other (%)	0559	41.99	0.0100	40.86	1.131	0.0480	5	0.87		0
020.99	Total P2O5, Other (%)	0562	41.99	0.0300	40.86	1.131	0.0480	5	0.87		0
020.99	Total P2O5, Other (%)	0515	44.07	0.6100	40.86	1.131	0.0480	5	2.47		1
040.50	Indirect Available P2O5, ICP (40%)	0547	39.50	0.0000				1			0
041.10	Direct Available P2O5, Gravimetric Quinolinium (40%)	0102	40.29	0.0700	40.56	0.3663	0.2828	4	-0.76		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (40%)	0177	40.40	0.0512	40.56	0.3663	0.2828	4	-0.45		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (40%)	0635	40.47	0.2100	40.56	0.3663	0.2828	4	-0.26		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (40%)	0040	41.10	0.8000	40.56	0.3663	0.2828	4	1.47		0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0405	39.55	0.0200	40.33	0.6446	0.1127	7	-1.10	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0485	39.80	0.2000	40.33	0.6446	0.1127	7	-0.75	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0073	39.90	0.1400	40.33	0.6446	0.1127	7	-0.61	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0220	40.55	0.0900	40.33	0.6446	0.1127	7	0.30	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0049	40.71	0.1900	40.33	0.6446	0.1127	7	0.52	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0072	40.88	0.0300	40.33	0.6446	0.1127	7	0.76	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0117	40.95	0.1190	40.33	0.6446	0.1127	7	0.86	OK	0
041.20	Direct Available P2O5, Spectrophotometric (40%)	0452	40.30	3.580				2			0
041.20	Direct Available P2O5, Spectrophotometric (40%)	0553	40.40	0.1400				2			0

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041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (40%)	0568	4.560	0.0000	38.88	2.143	0.3807	6	-14.27	Low	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (40%)	0472	37.56	0.6600	38.88	2.143	0.3807	6	-0.55	Low	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (40%)	0177	39.47	0.2134	38.88	2.143	0.3807	6	0.25	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (40%)	0609	39.82	0.2000	38.88	2.143	0.3807	6	0.39	High	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (40%)	0354	40.25	0.1000	38.88	2.143	0.3807	6	0.57	High	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (40%)	0095	40.52	0.7300	38.88	2.143	0.3807	6	0.68	High	0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (40%)	0029	40.23	0.7500				1			0
041.50	Direct Available P2O5, ICP (40%)	0137	39.07	0.6500				2			0
041.50	Direct Available P2O5, ICP (40%)	0421	39.75	0.3000				2			0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (40%)	0043	39.90	0.1900	41.03	1.260	0.2870	4	-0.90		0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (40%)	0072	40.38	0.1630	41.03	1.260	0.2870	4	-0.51		0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (40%)	0136	41.05	0.5000	41.03	1.260	0.2870	4	0.02		0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (40%)	0023	42.78	0.2950	41.03	1.260	0.2870	4	1.39		0
041.99	Direct Available P2O5, Other (40%)	0600	39.76	0.1200	40.15	0.3281	0.1425	4	-1.18		0
041.99	Direct Available P2O5, Other (40%)	0537	39.99	0.1400	40.15	0.3281	0.1425	4	-0.48		0
041.99	Direct Available P2O5, Other (40%)	0405	40.39	0.0100	40.15	0.3281	0.1425	4	0.73		0
041.99	Direct Available P2O5, Other (40%)	0518	40.45	0.3000	40.15	0.3281	0.1425	4	0.93		0
048.10	Water Soluble P2O5, Gravimetric Quinolinium (%)	0444	35.66	0.3600				2			0
048.10	Water Soluble P2O5, Gravimetric Quinolinium (%)	0619	36.50	0.4000				2			0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0472	34.20	0.4800				1			0
048.50	Water Soluble P2O5, ICP (%)	0444	36.86	0.3600				1			0
048.99	Water Soluble P2O5, Other (%)	0619	36.50	0.4000				1			0
050.50	Soluble K2O, ICP (Oxalate) (%)	0422	0.0334	0.0063				1			0
050.51	Soluble K2O, ICP (Citrate) (%)	0568	0.1600	0.0000				1			0
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	0354	0.1300	0.0020				1			0
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	0137	0.2000	0.4000				1			4
050.99	Soluble K2O, Other (%)	0527	0.1363	0.0063	0.1488	0.0138	0.0102	3	-0.91		0
050.99	Soluble K2O, Other (%)	0524	0.1466	0.0033	0.1488	0.0138	0.0102	3	-0.16		0
050.99	Soluble K2O, Other (%)	0588	0.1635	0.0210	0.1488	0.0138	0.0102	3	1.07		0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0568	0.1810	0.0000				2			0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0354	0.2800	0.0200				2			0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0472	0.2750	0.0100				1			0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0527	< 0.01					1			5
101.99	Acid Soluble Ca, Other (%)	0389	0.2450	0.0100				1			0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0568	0.6690	0.0000				2			0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0354	0.7050	0.0100				2			0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0515	0.6493	0.0212	0.7318	0.1205	0.0149	3	-0.68		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0527	0.6760	0.0036	0.7318	0.1205	0.0149	3	-0.46		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0472	0.8700	0.0200	0.7318	0.1205	0.0149	3	1.15		0
121.99	Acid Soluble Mg, Other (%)	0515	0.6427	0.2362				2			0
121.99	Acid Soluble Mg, Other (%)	0524	0.7535	0.0112				2			0
143.00	Elemental S, Gravimetric Sulfur - carbon disulfide soluble sulfur	0485	4.340	0.3000				1			0
143.99	Elemental S, Other (%)	0368	6.394	0.1162	8.279	1.726	0.1096	4	-1.09		0

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143.99	Elemental S, Other (%)	0389	7.290	0.1200	8.279	1.726	0.1096	4	-0.57		0
143.99	Elemental S, Other (%)	0255	9.342	0.1820	8.279	1.726	0.1096	4	0.62		0
143.99	Elemental S, Other (%)	0291	10.09	0.0200	8.279	1.726	0.1096	4	1.05		0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0561	5.535	0.0100	7.156	2.566	0.1187	6	-0.56	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0485	5.580	0.1000	7.156	2.566	0.1187	6	-0.55	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0027	5.780	0.3000	7.156	2.566	0.1187	6	-0.48	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0220	5.895	0.1500	7.156	2.566	0.1187	6	-0.44	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0537	10.03	0.0400	7.156	2.566	0.1187	6	1.00	NA	0
145.00	Sulfate S, HCl soluble, Gravimetric Sulfur - sulfate form (%)	0635	10.12	0.1300	7.156	2.566	0.1187	6	1.03	NA	0
145.99	Sulfate S, HCl soluble, Other (%)	0553	5.025	0.0300	6.703	2.643	0.0600	3	-0.64		0
145.99	Sulfate S, HCl soluble, Other (%)	0136	5.335	0.0900	6.703	2.643	0.0600	3	-0.52		0
145.99	Sulfate S, HCl soluble, Other (%)	0600	9.750	0.0600	6.703	2.643	0.0600	3	1.15		0
148.00	Total S, Combustion (10%)	0405	9.710	0.0000	10.37	0.3483	0.2329	9	-1.74	OK	0
148.00	Total S, Combustion (10%)	0049	10.11	0.0600	10.37	0.3483	0.2329	9	-0.68	OK	0
148.00	Total S, Combustion (10%)	0521	10.16	0.0000	10.37	0.3483	0.2329	9	-0.54	OK	0
148.00	Total S, Combustion (10%)	0073	10.28	0.4000	10.37	0.3483	0.2329	9	-0.23	OK	0
148.00	Total S, Combustion (10%)	0029	10.37	0.2400	10.37	0.3483	0.2329	9	0.01	OK	0
148.00	Total S, Combustion (10%)	0609	10.40	0.2000	10.37	0.3483	0.2329	9	0.09	OK	0
148.00	Total S, Combustion (10%)	0157	10.65	0.3000	10.37	0.3483	0.2329	9	0.75	OK	0
148.00	Total S, Combustion (10%)	0547	10.68	0.0300	10.37	0.3483	0.2329	9	0.82	OK	0
148.00	Total S, Combustion (10%)	0451	10.80	0.4000	10.37	0.3483	0.2329	9	1.15	OK	0
148.01	Total S, Gravimetric - sulfate and elemental (10%)	0564	5.395	0.0100	8.658	1.860	0.2163	5	-1.75		0
148.01	Total S, Gravimetric - sulfate and elemental (10%)	0231	8.900	0.0000	8.658	1.860	0.2163	5	0.13		0
148.01	Total S, Gravimetric - sulfate and elemental (10%)	0055	9.523	0.3350	8.658	1.860	0.2163	5	0.47		0
148.01	Total S, Gravimetric - sulfate and elemental (10%)	0028	9.560	0.1400	8.658	1.860	0.2163	5	0.49		0
148.01	Total S, Gravimetric - sulfate and elemental (10%)	0485	9.910	0.3800	8.658	1.860	0.2163	5	0.67		0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0543	7.258	0.1950	9.875	0.7488	0.2404	11	-3.27	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0472	8.765	0.0900	9.875	0.7488	0.2404	11	-1.39	Low	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0515	9.729	1.063	9.875	0.7488	0.2404	11	-0.18	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0292	9.815	0.0300	9.875	0.7488	0.2404	11	-0.07	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0136	9.840	0.2000	9.875	0.7488	0.2404	11	-0.04	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0177	9.886	0.0353	9.875	0.7488	0.2404	11	0.01	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0043	9.951	0.0720	9.875	0.7488	0.2404	11	0.10	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0040	10.20	0.0000	9.875	0.7488	0.2404	11	0.41	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0527	10.22	0.0989	9.875	0.7488	0.2404	11	0.43	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0102	10.47	0.5500	9.875	0.7488	0.2404	11	0.74	OK	0
148.07	Total S, ICP, test portion as in 2017.02 (10%)	0421	12.55	0.5000	9.875	0.7488	0.2404	11	3.34	High	0
148.99	Total S, Other (10%)	0354	5.245	0.1700	9.856	0.6425	0.0691	7	-6.49	Low	0
148.99	Total S, Other (10%)	0433	9.595	0.0300	9.856	0.6425	0.0691	7	-0.37	OK	0
148.99	Total S, Other (10%)	0023	9.756	0.0450	9.856	0.6425	0.0691	7	-0.14	OK	0
148.99	Total S, Other (10%)	0600	9.850	0.1000	9.856	0.6425	0.0691	7	-0.01	OK	0
148.99	Total S, Other (10%)	0452	9.930	0.0400	9.856	0.6425	0.0691	7	0.10	OK	0
148.99	Total S, Other (10%)	0072	10.15	0.0690	9.856	0.6425	0.0691	7	0.42	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				
148.99	Total S, Other (10%)	0220	11.72	0.0700	9.856	0.6425	0.0691	7	2.62	High	0
148.99	Total S, Other (10%)	0422	10.18	0.6220	9.856	0.6425	0.0691	7	0.45	OK	1
149.04	S - HNO3 soluble, ICP (%)	0524	5.783	0.0464				1			0
151.00	Acid Soluble As, AA, test portion 2006.03 modified w/dual acid	0498	10.45	0.9000				1			0
151.30	Acid Soluble As, ICP (ppm)	0524	12.81	0.3701				1			0
151.30	Acid Soluble As, ICP (ppm)	0255	0.0000	0.0000				1			4
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0220	11.55	0.1000				2			0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0405	15.50	1.000				2			0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0527	10.95	0.5563				2			0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0136	12.46	0.0200				2			0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0515	< 0.25					2			5
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0368	9.750	1.900				1			0
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0515	< 0.186					1			5
151.99	Acid Soluble As, Other (ppm)	0220	11.45	0.1000				1			0
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0354	0.0100	0.0000				1			0
165.99	Acid Soluble B, Other (%)	0524	0.0047	0.0001				2			0
165.99	Acid Soluble B, Other (%)	0472	0.0100	0.0000				2			0
165.99	Acid Soluble B, Other (%)	0527	< 0.01					2			5
181.30	Acid Soluble Cd, ICP (ppm)	0255	4.858	0.2740				2			0
181.30	Acid Soluble Cd, ICP (ppm)	0524	4.960	0.1553				2			0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0220	5.600	0.0000				2			0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0405	6.000	0.0000				2			0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0527	5.177	0.1562				2			0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0136	5.260	0.1200				2			0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0515	< 0.19					2			5
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0368	4.500	0.8000				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	5.500	0.0000				1			0
191.00	Acid Soluble Cr, AA, test portion 2006.03 modified w/dual acid	0498	90.55	2.300				1			0
191.30	Acid Soluble Cr, ICP (ppm)	0524	115.5	2.491				1			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0220	128.8	0.6000				2			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0405	133.5	3.000				2			0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0527	117.5	0.2692	121.4	6.395	2.590	3	-0.61		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0136	117.9	1.400	121.4	6.395	2.590	3	-0.54		0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0515	128.8	6.100	121.4	6.395	2.590	3	1.15		0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0368	104.5	19.00				2			0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0515	107.0	57.31				2			0
191.99	Acid Soluble Cr, Other (ppm)	0220	127.6	0.0000				1			0
202.30	Acid Soluble Co, ICP (ppm)	0524	4.090	0.0254				1			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0220	2.300	0.0000				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	2.150	0.0457				1			0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0136	< 0.0003					1			5

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202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0515	< 0.26					1			5
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0368	1.900	0.4000				2			0
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0501	2.685	0.0300				2			0
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0515	< 0.139					2			5
202.99	Acid Soluble Co, Other (ppm)	0220	2.200	0.2000				1			0
202.99	Acid Soluble Co, Other (ppm)	0255	6.270	12.54				1			4
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0255	0.0000	0.0000				0			4
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0354	< 0.01					0			5
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0220	0.0002	0.0000				1			0
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0405	< 0.0002					1			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0136	0.0003	0.0000				2			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0527	0.0003	0.0000				2			0
221.99	Acid Soluble Cu, Other (%)	0524	0.0002	0.0000	0.0007	0.0006	0.0009	3	-0.80		0
221.99	Acid Soluble Cu, Other (%)	0368	0.0005	0.0004	0.0007	0.0006	0.0009	3	-0.32		0
221.99	Acid Soluble Cu, Other (%)	0515	0.0014	0.0014	0.0007	0.0006	0.0009	3	1.12		0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0354	0.8050	0.0100				1			0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0472	0.7400	0.0000	1.400	0.9887	1.027	3	-0.67		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0527	0.9228	0.0238	1.400	0.9887	1.027	3	-0.48		0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0515	2.537	2.031	1.400	0.9887	1.027	3	1.15		0
241.99	Acid Soluble Fe, Other (%)	0515	0.5502	0.3486				2			0
241.99	Acid Soluble Fe, Other (%)	0524	0.8109	0.0511				2			0
251.00	Acid Soluble Pb, AA, test portion 2006.03 modified w/dual acid	0498	1.250	0.3000				1			0
251.30	Acid Soluble Pb, ICP (ppm)	0524	8.155	0.9428				1			0
251.30	Acid Soluble Pb, ICP (ppm)	0255	0.0000	0.0000				1			4
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0220	12.30	0.2000				2			0
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0405	18.00	0.0000				2			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0136	10.01	1.600				1			0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0515	< 0.21					1			5
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0368	12.70	2.600				1			0
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0515	< 0.216					1			5
251.99	Acid Soluble Pb, Other (ppm)	0220	14.05	2.900				1			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0354	0.0200	0.0000				1			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0472	0.0200	0.0000				2			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0527	0.0254	0.0001				2			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0515	< 0.0017					2			5
261.99	Acid Soluble Mn, Other (%)	0524	0.0243	0.0034				1			0
261.99	Acid Soluble Mn, Other (%)	0515	< 0.0011					1			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)	0405	< 2					0			5
281.99	Acid Soluble Hg, Other (ppm)	0524	0.0048	0.0002				1			0
281.99	Acid Soluble Hg, Other (ppm)	0220	< 0.01					1			5
289.30	Acid Soluble Mo, ICP (ppm)	0255	7.254	0.0960	8.713	1.381	0.2136	3	-1.06		0

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289.30	Acid Soluble Mo, ICP (ppm)	0524	8.884	0.3312	8.713	1.381	0.2136	3	0.12		0
289.30	Acid Soluble Mo, ICP (ppm)	0234	10.00	0.0000	8.713	1.381	0.2136	3	0.93		0
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0220	9.400	0.0000				2			0
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0405	10.50	1.000				2			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0136	9.300	0.2000				2			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0527	10.41	0.7930				2			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0515	< 0.23					2			5
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0368	9.250	2.100				2			0
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0501	9.990	0.0200				2			0
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0515	< 0.178					2			5
289.99	Acid Soluble Mo, Other (ppm)	0220	9.250	0.1000				1			0
291.00	Acid Soluble Ni, AA, test portion 2006.03 modified w/dual acid (	0498	16.45	0.1000				1			0
291.30	Acid Soluble Ni, ICP (ppm)	0524	17.41	0.1357				1			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0220	15.50	0.4000				2			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0405	19.00	0.0000				2			0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0527	16.86	0.3839				2			0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0136	17.40	4.000				2			0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0515	< 0.26					2			5
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0501	16.95	0.1000				2			0
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0368	17.05	0.3000				2			0
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0515	< 0.18					2			5
291.99	Acid Soluble Ni, Other (ppm)	0220	15.90	1.600				2			0
291.99	Acid Soluble Ni, Other (ppm)	0255	41.21	25.93				2			0
301.30	Acid Soluble Se, ICP (ppm)	0524	0.2309	0.0309				1			0
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0220	< 0.3					0			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0405	< 10					0			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0527	< 0.01					0			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0515	< 0.27					0			5
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0515	< 0.226					0			5
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0368	< 1.4					0			5
301.99	Acid Soluble Se, Other (ppm)	0255	0.0000	0.0000				0			4
301.99	Acid Soluble Se, Other (ppm)	0220	< 0.3					0			5
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	0.1680	0.0053				1			0
311.99	Sodium, Other (%)	0354	0.1800	0.0000				1			0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (1%)	0485	0.8800	0.0560	0.9676	0.0601	0.0242	4	-1.46		0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (1%)	0029	0.9803	0.0007	0.9676	0.0601	0.0242	4	0.21		0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (1%)	0537	0.9950	0.0100	0.9676	0.0601	0.0242	4	0.46		0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (1%)	0553	1.015	0.0300	0.9676	0.0601	0.0242	4	0.79		0
321.03	Acid Soluble Zn, AA, 965.09, test portion 2006.03A-C w/dual ac	0498	0.9650	0.0700				1			0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0354	0.8550	0.0300	0.9703	0.0879	0.0289	12	-1.31	Low	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0255	0.8930	0.0460	0.9703	0.0879	0.0289	12	-0.88	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0157	0.8970	0.0320	0.9703	0.0879	0.0289	12	-0.83	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0292	0.9300	0.0000	0.9703	0.0879	0.0289	12	-0.46	OK	0

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321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0433	0.9500	0.0000	0.9703	0.0879	0.0289	12	-0.23	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0072	0.9546	0.0241	0.9703	0.0879	0.0289	12	-0.18	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0444	0.9550	0.0100	0.9703	0.0879	0.0289	12	-0.17	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0049	0.9650	0.0220	0.9703	0.0879	0.0289	12	-0.06	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0291	1.020	0.0000	0.9703	0.0879	0.0289	12	0.57	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0231	1.025	0.0500	0.9703	0.0879	0.0289	12	0.62	OK	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0451	1.097	0.0260	0.9703	0.0879	0.0289	12	1.44	High	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0619	1.120	0.0200	0.9703	0.0879	0.0289	12	1.70	High	0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (1%)	0234	1.040	0.1200	0.9703	0.0879	0.0289	12	0.79	OK	1
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (1%)	0220	0.9400	0.0200	1.005	0.0639	0.0400	4	-1.02		0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (1%)	0095	0.9700	0.0200	1.005	0.0639	0.0400	4	-0.55		0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (1%)	0405	1.025	0.0100	1.005	0.0639	0.0400	4	0.31		0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (1%)	0485	1.085	0.1100	1.005	0.0639	0.0400	4	1.25		0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0177	0.8692	0.0037	0.9720	0.0789	0.0187	13	-1.30	Low	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0040	0.8710	0.0000	0.9720	0.0789	0.0187	13	-1.28	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0472	0.8850	0.0100	0.9720	0.0789	0.0187	13	-1.10	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0136	0.9150	0.0300	0.9720	0.0789	0.0187	13	-0.72	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0421	0.9750	0.0300	0.9720	0.0789	0.0187	13	0.04	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0102	0.9800	0.0200	0.9720	0.0789	0.0187	13	0.10	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0527	0.9823	0.0020	0.9720	0.0789	0.0187	13	0.13	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0543	0.9895	0.0090	0.9720	0.0789	0.0187	13	0.22	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0561	0.9950	0.0100	0.9720	0.0789	0.0187	13	0.29	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0515	1.003	0.0465	0.9720	0.0789	0.0187	13	0.39	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0169	1.017	0.0040	0.9720	0.0789	0.0187	13	0.57	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0043	1.064	0.0420	0.9720	0.0789	0.0187	13	1.17	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0452	1.120	0.0200	0.9720	0.0789	0.0187	13	1.88	High	0
321.33	Acid Soluble Zn, ICP, 2017.02 (1%)	0055	0.7975	0.2150	0.9720	0.0789	0.0187	13	-2.21	Low	1
321.99	Acid Soluble Zn, Other (1%)	0515	0.8364	0.0792	0.9910	0.0814	0.0470	13	-1.90	Low	0
321.99	Acid Soluble Zn, Other (1%)	0368	0.9127	0.0953	0.9910	0.0814	0.0470	13	-0.96	OK	0
321.99	Acid Soluble Zn, Other (1%)	0562	0.9550	0.0100	0.9910	0.0814	0.0470	13	-0.44	OK	0
321.99	Acid Soluble Zn, Other (1%)	0042	0.9550	0.0700	0.9910	0.0814	0.0470	13	-0.44	OK	0
321.99	Acid Soluble Zn, Other (1%)	0389	0.9600	0.0000	0.9910	0.0814	0.0470	13	-0.38	OK	0
321.99	Acid Soluble Zn, Other (1%)	0559	0.9650	0.0100	0.9910	0.0814	0.0470	13	-0.32	OK	0
321.99	Acid Soluble Zn, Other (1%)	0501	0.9750	0.0500	0.9910	0.0814	0.0470	13	-0.20	OK	0
321.99	Acid Soluble Zn, Other (1%)	0600	0.9870	0.0100	0.9910	0.0814	0.0470	13	-0.05	OK	0
321.99	Acid Soluble Zn, Other (1%)	0524	0.9912	0.0205	0.9910	0.0814	0.0470	13	0.00	OK	0
321.99	Acid Soluble Zn, Other (1%)	0023	1.023	0.0090	0.9910	0.0814	0.0470	13	0.39	OK	0
321.99	Acid Soluble Zn, Other (1%)	0518	1.065	0.0300	0.9910	0.0814	0.0470	13	0.91	OK	0
321.99	Acid Soluble Zn, Other (1%)	0635	1.135	0.0700	0.9910	0.0814	0.0470	13	1.77	High	0
321.99	Acid Soluble Zn, Other (1%)	0619	1.170	0.1200	0.9910	0.0814	0.0470	13	2.20	High	0
325.30	Water Soluble Zn, ICP (%)	0619	0.7305	0.0070				1			0
325.99	Water Soluble Zn, Other (%)	0619	0.7305	0.0070				2			0
325.99	Water Soluble Zn, Other (%)	0564	0.9750	0.0100				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				

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