

Method PT For All Labs

Sample # 230714

DAP 18-46-0

Magruder Fertilizer Proficiency Testing Program

Regular PT Scheme Sample Doubles with P Scheme

Statistical Summary

Methods: 130

Labs Reporting: 79

Issue Date : 08/31/2023

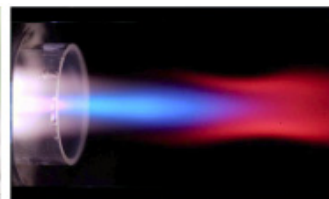
Method Code	Analyte & Method Sample # 230714	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Method Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Method IA Ratio	Average Range (R-bar)	Horwitz %RSD
001.10	Ammoniacal N, Magnesium Oxide Method (%)	6	6	17.01	0.6599	17.01		0.7484	0.3819	4.40%		0.3620	2.42%
001.99	Ammoniacal N, Other (%)	22	20	16.48	3.034	17.14		0.6014	0.1681	3.51%		0.1010	2.42%
002.20	Nitrate N, Jones Modified (%)	1		0.8450									
002.99	Nitrate N, Other (%)	1		0.3465									
005.99	Urea N, Other (%)	1		0.3900									
010.11	Total N, Modified Comprehensive (18%)	1		18.05									
010.12	Total N, Salicylic (18%)	4	4	17.47	0.4726	17.47	0.6920	0.4726	0.2954	2.71%	1.59	0.1333	2.39%
010.17	Total N, Comprehensive (18%)	1		17.49									
010.60	Total N, Combustion (18%)	49	49	17.32	0.2976	17.34	0.6902	0.2077	0.0371	1.20%	0.70	0.0869	2.40%
010.99	Total N, Other (18%)	9	9	17.66	0.3866	17.67	0.6950	0.4131	0.1721	2.34%	1.38	0.1487	2.38%
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	2	2	46.07	0.2581								
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	14	13	45.57	2.141	46.18		0.6892	0.2389	1.49%		0.1831	1.47%
020.40	Total P2O5, Automated (%)	5	5	45.53	2.335	45.53		2.335	1.305	5.13%		0.5000	1.48%
020.50	Total P2O5, ICP (%)	15	15	45.74	2.003	45.82		2.098	0.6772	4.58%		0.6324	1.48%
020.99	Total P2O5, Other (%)	6	6	45.78	0.6349	45.87		0.4999	0.2551	1.09%		0.4529	1.48%
030.20	Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP	2	2	0.0525	0.0318								
030.40	Citrate Insoluble P2O5, Automated, test portion 963.03 A-B (%)	2	2	0.0300	0.0141								
030.50	Citrate Insoluble P2O5, ICP, test portion 963.03 A-B (%)	1		0.0500									
040.20	Indirect Available P2O5, Spectrophotometric (46%)	3	3	46.21	0.7943	46.21	1.0031	0.7943	0.5732	1.72%	1.85	0.2100	1.47%
040.40	Indirect Available P2O5, Automated (46%)	1		46.21									
040.50	Indirect Available P2O5, ICP (46%)	1		47.15									
040.99	Indirect Available P2O5, Other (46%)	1		46.27									
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	5	5	46.35	0.1846	46.35	1.0052	0.1846	0.1032	0.40%	0.43	0.1283	1.47%
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA	9	8	45.61	1.593	46.13	1.0019	0.7157	0.3163	1.55%	1.66	0.2919	1.47%
041.20	Direct Available P2O5, Spectrophotometric (46%)	2	2	46.06	0.7212								
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext.	9	9	46.49	2.363	45.89	0.9978	0.8121	0.3384	1.77%	1.90	0.2493	1.48%
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)	2	2	46.55	1.054								
041.50	Direct Available P2O5, ICP (46%)	1		46.41									
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	8	8	46.17	0.4659	46.17	1.0026	0.5283	0.2335	1.14%	1.23	0.3778	1.47%

Method Code	Analyte & Method Sample # 230714	# 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
041.99	Direct Available P2O5, Other (46%)	5	5	45.88	0.8787	45.88	0.9976	0.8787	0.4912	1.92%	2.05	0.2320	1.48%
042.10	Water Soluble OrthoP As P2O5, Spectrophotometric (%)	1		41.14									
048.20	Water Soluble P2O5, Spectrophotometric (%)	7	7	41.41	1.723	41.67		1.286	0.6074	3.09%		0.1349	1.55%
048.40	Water Soluble P2O5, Automated (%)	3	3	41.50	0.3081	41.50		0.3081	0.2223	0.74%		0.0467	1.55%
048.50	Water Soluble P2O5, ICP (%)	1		42.02									
048.99	Water Soluble P2O5, Other (%)	4	4	42.13	3.356	42.13		3.356	2.098	7.97%		0.1700	1.54%
050.50	Soluble K2O, ICP (Oxalate) (%)	1		0.1900									
050.51	Soluble K2O, ICP (Citrate) (%)	1		0.3200									
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	1		0.1940									
050.61	Soluble K2O, Flame Photometric (Citrate) (%)	1		0.8500									
050.99	Soluble K2O, Other (%)	4	4	0.1992	0.0506	0.1992	0.4100	0.0506	0.0317	25.42%	0.29	0.0626	5.10%
060.00	Water (Free), Vacuum Oven (%)	3	3	2.198	1.033	2.198		1.033	0.7452	46.97%		0.0700	3.55%
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g samp	1		3.285									
060.99	Water (Free), Other (%)	1		3.338									
101.00	Acid Soluble Ca, AA, inorganic 965.09 (%)	1		0.0230									
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	3	3	0.2940	0.0476	0.2940	0.2147	0.0476	0.0344	16.20%	0.52	0.0250	4.81%
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	5	5	0.2717	0.0379	0.2717	0.2136	0.0379	0.0212	13.96%	0.41	0.0104	4.87%
101.99	Acid Soluble Ca, Other (%)	3	3	0.3467	0.1201	0.3467	0.2173	0.1201	0.0867	34.66%	1.29	0.0600	4.69%
121.00	Acid Soluble Mg, AA, inorganic 965.09 (%)	2	2	0.6498	0.0357								
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	3	3	0.6943	0.0238	0.6943	0.2347	0.0238	0.0172	3.43%	0.24	0.0040	4.23%
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	6	6	0.6755	0.0567	0.6695	0.2335	0.0497	0.0254	7.43%	0.50	0.0413	4.25%
121.99	Acid Soluble Mg, Other (%)	5	5	0.6870	0.3040	0.6870	0.2344	0.3040	0.1699	44.24%	3.02	0.0349	4.23%
131.00	Water Soluble Mg, AA (%)	1		0.0600									
131.99	Water Soluble Mg, Other (%)	1		0.1200									
145.99	Sulfate S, HCl soluble, Other (%)	3	3	1.243	0.0506	1.243		0.0506	0.0365	4.07%		0.0600	3.87%
148.00	Total S, Combustion (%)	1		1.590									
148.07	Total S, ICP, test portion as in 2017.02 (%)	5	4	2.093	2.695	2.591	0.3295	2.834	1.771	109.38%	20.04	0.2032	3.47%
148.99	Total S, Other (%)	3	3	1.008	0.2525	1.008	0.2504	0.2525	0.1822	25.05%	2.35	0.0497	3.99%
149.04	S - HNO3 soluble, ICP (%)	1		1.193									
151.30	Acid Soluble As, ICP (ppm)	7	6	12.02	5.452	14.02		1.589	0.8107	11.33%		1.000	10.75%
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	3	3	12.73	2.250	12.73		2.250	1.624	17.67%		0.7000	10.91%
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	6	6	17.11	6.956	14.83		1.782	0.9092	12.01%		0.3841	10.66%
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	1		15.60									
151.99	Acid Soluble As, Other (ppm)	3	3	13.59	0.3640	13.59		0.3640	0.2627	2.68%		0.2733	10.80%
165.00	Acid Soluble B, Spectrophotometric (%)	1		0.0275									
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	1		0.0150									
165.99	Acid Soluble B, Other (%)	6	4	5.806	13.86	8.703	1.0000	16.93	10.58	194.57%	39.46	0.4313	2.89%
171.99	Water Soluble B, Other (%)	1		0.0113									
181.30	Acid Soluble Cd, ICP (ppm)	9	8	4.464	2.411	3.424		0.4782	0.2113	13.97%		0.2083	13.29%
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	3	3	2.550	0.9579	2.550		0.9579	0.6913	37.56%		0.5000	13.89%

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181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	6	6	3.429	0.0856	3.429		0.0970	0.0495	2.83%		0.1765	13.29%
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	1		2.800									
181.99	Acid Soluble Cd, Other (ppm)	2	2	3.220	0.0990								
191.30	Acid Soluble Cr, ICP (ppm)	10	9	118.4	15.42	118.9		13.66	5.693	11.49%		2.228	7.79%
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	2	2	119.8	1.768								
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	6	6	116.3	6.290	117.0		5.587	2.851	4.78%		3.570	7.81%
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	1		116.5									
191.99	Acid Soluble Cr, Other (ppm)	3	3	103.0	13.72	103.0		13.72	9.898	13.32%		2.487	7.96%
202.30	Acid Soluble Co, ICP (ppm)	6	5	4.033	2.228	3.839	2.1518	2.434	1.361	63.40%	2.64	0.9219	13.06%
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	2	2	2.875	0.1768								
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	6	6	2.625	0.3310	2.640	1.7919	0.3401	0.1735	12.88%	0.44	0.0809	13.82%
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	1		2.350									
202.99	Acid Soluble Co, Other (ppm)	4	3	5.691	5.102	5.922	2.7765	6.223	4.491	105.09%	5.22	10.08	12.24%
221.00	Acid Soluble Cu, AA, inorganic 965.09 (%)	2	0	0.0030	0.0028								
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	3	1	0.0037	0.0055	5.922	0.5972	6.223	7.779	105.09%	24.28	0.0400	3.06%
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	1		0.0002									
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	6	1	0.0002	0.0002	5.922	0.5972	6.223	7.779	105.09%	24.28	0.0400	3.06%
221.99	Acid Soluble Cu, Other (%)	5	4	0.1692	0.3775	0.2115	0.0262	0.4220	0.2637	199.48%	37.59	0.0328	5.05%
241.00	Acid Soluble Fe, AA, inorganic 965.09 (%)	2	2	0.9713	0.0230								
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	2	2	0.9825	0.0248								
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	7	7	0.9368	0.0962	0.9499	0.1000	0.0763	0.0360	8.03%	1.78	0.0393	4.03%
241.99	Acid Soluble Fe, Other (%)	5	5	1.030	0.2991	1.030	0.1080	0.2991	0.1672	29.04%	6.45	0.0398	3.98%
251.30	Acid Soluble Pb, ICP (ppm)	10	5	2.429	2.070	1.148		0.1265	0.0707	11.02%		0.0454	15.67%
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	2	1	4.750	1.061								
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	5	4	2.815	2.012	2.769		2.320	1.450	83.80%		0.2162	13.72%
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	1		3.700									
251.99	Acid Soluble Pb, Other (ppm)	3	2	3.813	2.275	3.220		2.871	2.538	89.16%		0.1000	13.42%
261.00	Acid Soluble Mn, AA, Mn2+ only (%)	1		0.0305									
261.12	Acid Soluble Mn, AA, inorganic 965.09 (%)	1		0.0297									
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	2	2	157.5	222.7								
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	4	4	0.0302	0.0020	0.0302	0.0080	0.0020	0.0013	6.66%	0.58	0.0027	6.77%
261.99	Acid Soluble Mn, Other (%)	3	3	109.4	189.4	109.4	1.0000	189.4	136.7	173.16%	441.20	7.000	0.96%
271.00	Water Soluble Mn, AA (%)	1		0.0010									
281.30	Acid Soluble Hg, ICP (ppm)	7	2	0.4807	0.8119	0.0055		0.0007	0.0006	12.16%		0.0009	22.00%
281.99	Acid Soluble Hg, Other (ppm)	4	2	0.0129	0.0070	0.0163		0.0101	0.0089	62.03%		0.0009	22.00%
289.30	Acid Soluble Mo, ICP (ppm)	9	9	13.55	4.668	12.71	4.8144	3.000	1.250	23.60%	1.45	0.9553	10.91%
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	2	2	18.00	7.071								
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	8	7	13.00	5.740	12.37	4.7105	0.5671	0.2679	4.59%	0.28	0.4495	10.96%
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	1		13.10									
289.99	Acid Soluble Mo, Other (ppm)	2	2	14.66	2.606								

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291.30	Acid Soluble Ni, ICP (ppm)	10	9	13.05	5.045	11.59		1.249	0.5204	10.78%		0.4477	11.06%
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	2	2	11.93	0.8132								
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	6	6	11.05	1.933	11.37		1.381	0.7047	12.14%		0.6417	11.09%
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	1		11.90									
291.99	Acid Soluble Ni, Other (ppm)	4	4	18.26	17.04	18.26		17.04	10.65	93.32%		6.880	10.33%
301.30	Acid Soluble Se, ICP (ppm)	5	2	3.059	5.038	0.8226		0.4927	0.4355	59.90%		0.1511	16.47%
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	2	1	5.175	6.824								
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	3	1	0.4256	0.5137	0.8226		0.4927	0.6159	59.90%		0.0422	16.47%
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	2	0	1.150	0.2121								
301.99	Acid Soluble Se, Other (ppm)	3	2	0.7417	0.8217	1.113		0.7248	0.6406	65.15%		0.2050	15.74%
311.33	Sodium, ICP, test portion as in 2017.02 (%)	1		0.2093									
311.99	Sodium, Other (%)	3	3	0.2117	0.0549	0.2117	0.0262	0.0548	0.0396	25.91%	4.88	0.0500	5.05%
321.00	Acid Soluble Zn, AA, inorganic 965.09 (%)	2	2	0.0058	0.0003								
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	4	3	0.0074	0.0027	0.0065	0.0057	0.0025	0.0018	38.46%	1.03	0.0009	8.53%
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	2	2	0.0055	0.0000								
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	10	9	0.0062	0.0021	0.0055	0.0055	0.0010	0.0004	18.15%	0.42	0.0007	8.76%
321.99	Acid Soluble Zn, Other (%)	5	5	11.30	25.27	11.30	1.0000	25.27	14.12	223.50%	58.87	1.750	2.78%
325.00	Water Soluble Zn, AA (%)	1		0.0010									
325.30	Water Soluble Zn, ICP (%)	1		0.0010									
325.99	Water Soluble Zn, Other (%)	1		0.0006									
431.99	Soluble Si in nonliquids, Other (%)	1		0.0068									

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 # 230714

Regular PT Scheme Sample Doubles with P Scheme

DAP 18-46-0

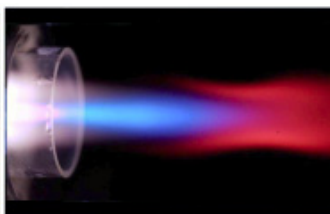
Method Precision Report

Issue Date : 08/31/2023

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	17.01	0.6599	0.6277	0.2880	0.6906	3.69%	1.69%	4.06%	2.398
001.99	Ammoniacal N, Other (%)	22	19	17.11	0.7172	0.7138	0.0975	0.7205	4.17%	0.57%	4.21%	7.391
010.60	Total N, Combustion (18%)	49	47	17.34	0.2221	0.2147	0.0803	0.2293	1.24%	0.46%	1.32%	2.856
010.99	Total N, Other (18%)	9	9	17.66	0.3866	0.3735	0.1412	0.3993	2.12%	0.80%	2.26%	2.827
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	14	12	45.93	1.785	1.782	0.1531	1.788	3.88%	0.33%	3.89%	11.68
020.50	Total P2O5, ICP (%)	15	14	45.92	1.957	1.923	0.5165	1.991	4.19%	1.12%	4.34%	3.855
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	5	5	46.35	0.1846	0.1690	0.1051	0.1990	0.36%	0.23%	0.43%	1.893
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA E	9	7	46.28	0.4952	0.4331	0.3395	0.5503	0.94%	0.73%	1.19%	1.621
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (4	9	7	45.65	0.6221	0.6104	0.1693	0.6335	1.34%	0.37%	1.39%	3.742
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	8	7	46.07	0.3900	0.3459	0.2548	0.4296	0.75%	0.55%	0.93%	1.686
041.99	Direct Available P2O5, Other (46%)	5	5	45.88	0.8787	0.8690	0.1843	0.8883	1.89%	0.40%	1.94%	4.819
048.20	Water Soluble P2O5, Spectrophotometric (%)	7	6	42.00	0.8214	0.8189	0.0904	0.8238	1.95%	0.22%	1.96%	9.110
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	5	5	0.2717	0.0379	0.0375	0.0083	0.0384	13.79%	3.04%	14.12%	4.642
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	6	5	0.6828	0.0601	0.0591	0.0153	0.0611	8.66%	2.24%	8.94%	3.991
121.99	Acid Soluble Mg, Other (%)	5	5	0.6870	0.3040	0.3033	0.0274	0.3046	44.15%	3.98%	44.33%	11.13
151.30	Acid Soluble As, ICP (ppm)	7	6	14.02	1.401	1.252	0.8889	1.535	8.93%	6.34%	10.95%	1.727
181.30	Acid Soluble Cd, ICP (ppm)	9	7	3.321	0.3308	0.3140	0.1473	0.3469	9.45%	4.44%	10.44%	2.354
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	6	6	3.429	0.0856		0.1715			5.00%		
191.30	Acid Soluble Cr, ICP (ppm)	10	8	116.4	9.920	9.841	1.767	9.998	8.46%	1.52%	8.59%	5.658
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	6	5	116.1	6.999	6.931	1.374	7.066	5.97%	1.18%	6.09%	5.143
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	6	5	2.594	0.3605	0.3589	0.0487	0.3622	13.83%	1.88%	13.96%	7.430
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	7	6	0.9690	0.0487	0.0419	0.0351	0.0547	4.33%	3.62%	5.64%	1.558
251.30	Acid Soluble Pb, ICP (ppm)	10	5	1.148	0.1265	0.1236	0.0383	0.1294	10.77%	3.34%	11.27%	3.379
289.30	Acid Soluble Mo, ICP (ppm)	9	8	12.15	2.178	2.127	0.6628	2.228	17.51%	5.45%	18.34%	3.362
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	8	7	11.33	3.518	3.508	0.3757	3.528	30.96%	3.32%	31.14%	9.392
291.30	Acid Soluble Ni, ICP (ppm)	10	9	11.50	1.272	1.231	0.4566	1.313	10.70%	3.97%	11.41%	2.875

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
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	10	8	0.0060	0.0017	0.0017	0.0003	0.0018	28.82%	4.90%	29.23%	5.960

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



Method PT For All Labs

Magruder Fertilizer Proficiency Testing Program

Methods: 130

Sample # 230714

Regular PT Scheme Sample Doubles with P Scheme

Labs Reporting: 79

DAP 18-46-0

Lab Values

Issue Date : 08/31/2023

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 (%)	0231	16.29	0.4900	17.01	0.7484	0.3620	6	-0.87	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0389	16.34	0.0300	17.01	0.7484	0.3620	6	-0.81	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0451	16.68	0.7900	17.01	0.7484	0.3620	6	-0.40	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0498	17.40	0.2000	17.01	0.7484	0.3620	6	0.46	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0580	17.63	0.0000	17.01	0.7484	0.3620	6	0.73	NA	0
001.10	Ammoniacal N, Magnesium Oxide Method (%)	0444	17.75	0.3000	17.01	0.7484	0.3620	6	0.88	NA	0
001.99	Ammoniacal N, Other (%)	0368	15.04	0.1750	17.14	0.6014	0.1010	20	-3.50	NA	0
001.99	Ammoniacal N, Other (%)	0220	16.19	0.3200	17.14	0.6014	0.1010	20	-1.58	NA	0
001.99	Ammoniacal N, Other (%)	0572	16.51	0.0300	17.14	0.6014	0.1010	20	-1.06	NA	0
001.99	Ammoniacal N, Other (%)	0524	16.69	0.5000	17.14	0.6014	0.1010	20	-0.75	NA	0
001.99	Ammoniacal N, Other (%)	0587	16.84	0.0300	17.14	0.6014	0.1010	20	-0.51	NA	0
001.99	Ammoniacal N, Other (%)	0593	16.94	0.0400	17.14	0.6014	0.1010	20	-0.33	NA	0
001.99	Ammoniacal N, Other (%)	0626	16.95	0.0500	17.14	0.6014	0.1010	20	-0.33	NA	0
001.99	Ammoniacal N, Other (%)	0553	17.00	0.0000	17.14	0.6014	0.1010	20	-0.23	NA	0
001.99	Ammoniacal N, Other (%)	0586	17.01	0.0000	17.14	0.6014	0.1010	20	-0.22	NA	0
001.99	Ammoniacal N, Other (%)	0581	17.03	0.0600	17.14	0.6014	0.1010	20	-0.18	NA	0
001.99	Ammoniacal N, Other (%)	0563	17.06	0.0000	17.14	0.6014	0.1010	20	-0.13	NA	0
001.99	Ammoniacal N, Other (%)	0405	17.08	0.0500	17.14	0.6014	0.1010	20	-0.11	NA	0
001.99	Ammoniacal N, Other (%)	0513	17.20	0.0600	17.14	0.6014	0.1010	20	0.10	NA	0
001.99	Ammoniacal N, Other (%)	0394	17.32	0.1430	17.14	0.6014	0.1010	20	0.30	NA	0
001.99	Ammoniacal N, Other (%)	0558	17.41	0.0382	17.14	0.6014	0.1010	20	0.44	NA	0
001.99	Ammoniacal N, Other (%)	0577	17.55	0.1000	17.14	0.6014	0.1010	20	0.68	NA	0
001.99	Ammoniacal N, Other (%)	0600	17.82	0.0800	17.14	0.6014	0.1010	20	1.13	NA	0
001.99	Ammoniacal N, Other (%)	0562	17.93	0.0500	17.14	0.6014	0.1010	20	1.30	NA	0
001.99	Ammoniacal N, Other (%)	0605	17.99	0.3900	17.14	0.6014	0.1010	20	1.40	NA	0
001.99	Ammoniacal N, Other (%)	0584	18.26	0.1400	17.14	0.6014	0.1010	20	1.86	NA	0
001.99	Ammoniacal N, Other (%)	0255	17.47	1.100	17.14	0.6014	0.1010	20	0.55	NA	1
001.99	Ammoniacal N, Other (%)	0096	3.235	0.0300	17.14	0.6014	0.1010	20	-23.12	NA	2
002.20	Nitrate N, Jones Modified (%)	0563	0.8450	0.0100				1			0
002.99	Nitrate N, Other (%)	0553	0.3465	0.0010				1			0
005.99	Urea N, Other (%)	0524	0.3900	0.0000				1			0

Method Code	Analyte Name and Method (Units)	Lab Code	Lab Data		*Robust Method Values			# Tests	Magruder PT Z Score	Method IA Status	Flag
			Value	Range	Rob Mean	Rob SD	Rob R-bar				
010.11	Total N, Modified Comprehensive (18%)	0510	18.05	0.0333				1			0
010.12	Total N, Salicylic (18%)	0572	16.87	0.0100	17.47	0.4726	0.1333	4	-1.27		0
010.12	Total N, Salicylic (18%)	0498	17.40	0.2000	17.47	0.4726	0.1333	4	-0.14		0
010.12	Total N, Salicylic (18%)	0580	17.61	0.1900	17.47	0.4726	0.1333	4	0.29		0
010.12	Total N, Salicylic (18%)	0568	18.00	0.0000	17.47	0.4726	0.1333	4	1.13		0
010.17	Total N, Comprehensive (18%)	0581	17.49	0.1000				1			0
010.60	Total N, Combustion (18%)	0521	15.98	0.0000	17.34	0.2077	0.0869	49	-6.57	Low	0
010.60	Total N, Combustion (18%)	0102	16.70	0.0300	17.34	0.2077	0.0869	49	-3.12	OK	0
010.60	Total N, Combustion (18%)	0018	16.95	0.1000	17.34	0.2077	0.0869	49	-1.90	OK	0
010.60	Total N, Combustion (18%)	0042	16.95	0.1000	17.34	0.2077	0.0869	49	-1.90	OK	0
010.60	Total N, Combustion (18%)	0422	16.99	0.0600	17.34	0.2077	0.0869	49	-1.70	OK	0
010.60	Total N, Combustion (18%)	0231	17.09	0.0200	17.34	0.2077	0.0869	49	-1.22	OK	0
010.60	Total N, Combustion (18%)	0043	17.15	0.2900	17.34	0.2077	0.0869	49	-0.96	OK	0
010.60	Total N, Combustion (18%)	0351	17.15	0.1000	17.34	0.2077	0.0869	49	-0.93	OK	0
010.60	Total N, Combustion (18%)	0371	17.15	0.1400	17.34	0.2077	0.0869	49	-0.93	OK	0
010.60	Total N, Combustion (18%)	0356	17.20	0.0170	17.34	0.2077	0.0869	49	-0.70	OK	0
010.60	Total N, Combustion (18%)	0354	17.20	0.0000	17.34	0.2077	0.0869	49	-0.69	OK	0
010.60	Total N, Combustion (18%)	0095	17.20	0.1200	17.34	0.2077	0.0869	49	-0.69	OK	0
010.60	Total N, Combustion (18%)	0588	17.21	0.1300	17.34	0.2077	0.0869	49	-0.67	OK	0
010.60	Total N, Combustion (18%)	0055	17.21	0.0800	17.34	0.2077	0.0869	49	-0.64	OK	0
010.60	Total N, Combustion (18%)	0255	17.21	0.1510	17.34	0.2077	0.0869	49	-0.63	OK	0
010.60	Total N, Combustion (18%)	0472	17.23	0.0100	17.34	0.2077	0.0869	49	-0.57	OK	0
010.60	Total N, Combustion (18%)	0451	17.27	0.1500	17.34	0.2077	0.0869	49	-0.38	OK	0
010.60	Total N, Combustion (18%)	0389	17.28	0.0300	17.34	0.2077	0.0869	49	-0.33	OK	0
010.60	Total N, Combustion (18%)	0086	17.30	0.1600	17.34	0.2077	0.0869	49	-0.19	OK	0
010.60	Total N, Combustion (18%)	0292	17.32	0.0100	17.34	0.2077	0.0869	49	-0.14	OK	0
010.60	Total N, Combustion (18%)	0360	17.32	0.0100	17.34	0.2077	0.0869	49	-0.14	OK	0
010.60	Total N, Combustion (18%)	0494	17.34	0.0600	17.34	0.2077	0.0869	49	-0.02	OK	0
010.60	Total N, Combustion (18%)	0029	17.35	0.0600	17.34	0.2077	0.0869	49	0.03	OK	0
010.60	Total N, Combustion (18%)	0035	17.35	0.1000	17.34	0.2077	0.0869	49	0.03	OK	0
010.60	Total N, Combustion (18%)	0234	17.35	0.2400	17.34	0.2077	0.0869	49	0.03	OK	0
010.60	Total N, Combustion (18%)	0324	17.35	0.1000	17.34	0.2077	0.0869	49	0.03	OK	0
010.60	Total N, Combustion (18%)	0561	17.36	0.0100	17.34	0.2077	0.0869	49	0.05	OK	0
010.60	Total N, Combustion (18%)	0037	17.37	0.0070	17.34	0.2077	0.0869	49	0.12	OK	0
010.60	Total N, Combustion (18%)	0027	17.38	0.1000	17.34	0.2077	0.0869	49	0.17	OK	0
010.60	Total N, Combustion (18%)	0485	17.40	0.0900	17.34	0.2077	0.0869	49	0.25	OK	0
010.60	Total N, Combustion (18%)	0136	17.40	0.2000	17.34	0.2077	0.0869	49	0.27	OK	0
010.60	Total N, Combustion (18%)	0534	17.40	0.0000	17.34	0.2077	0.0869	49	0.27	OK	0
010.60	Total N, Combustion (18%)	0543	17.42	0.0500	17.34	0.2077	0.0869	49	0.34	OK	0
010.60	Total N, Combustion (18%)	0220	17.44	0.0700	17.34	0.2077	0.0869	49	0.44	OK	0
010.60	Total N, Combustion (18%)	0049	17.44	0.0100	17.34	0.2077	0.0869	49	0.44	OK	0
010.60	Total N, Combustion (18%)	0073	17.45	0.0900	17.34	0.2077	0.0869	49	0.49	OK	0
010.60	Total N, Combustion (18%)	0307	17.45	0.3000	17.34	0.2077	0.0869	49	0.51	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 (18%)	0106	17.46	0.0200	17.34	0.2077	0.0869	49	0.56	OK	0
010.60	Total N, Combustion (18%)	0405	17.47	0.0200	17.34	0.2077	0.0869	49	0.61	OK	0
010.60	Total N, Combustion (18%)	0040	17.50	0.0000	17.34	0.2077	0.0869	49	0.75	OK	0
010.60	Total N, Combustion (18%)	0023	17.57	0.0120	17.34	0.2077	0.0869	49	1.07	OK	0
010.60	Total N, Combustion (18%)	0368	17.57	0.0700	17.34	0.2077	0.0869	49	1.09	OK	0
010.60	Total N, Combustion (18%)	0177	17.59	0.2110	17.34	0.2077	0.0869	49	1.21	OK	0
010.60	Total N, Combustion (18%)	0542	17.60	0.0730	17.34	0.2077	0.0869	49	1.25	OK	0
010.60	Total N, Combustion (18%)	0291	17.62	0.0100	17.34	0.2077	0.0869	49	1.31	OK	0
010.60	Total N, Combustion (18%)	0527	17.69	0.1460	17.34	0.2077	0.0869	49	1.67	OK	0
010.60	Total N, Combustion (18%)	0025	17.73	0.1700	17.34	0.2077	0.0869	49	1.84	OK	0
010.60	Total N, Combustion (18%)	0377	17.73	0.3100	17.34	0.2077	0.0869	49	1.84	OK	0
010.60	Total N, Combustion (18%)	0626	17.99	0.0500	17.34	0.2077	0.0869	49	3.09	OK	0
010.99	Total N, Other (18%)	0524	16.95	0.0469	17.67	0.4131	0.1487	9	-1.61	Low	0
010.99	Total N, Other (18%)	0394	17.24	0.1150	17.67	0.4131	0.1487	9	-0.96	OK	0
010.99	Total N, Other (18%)	0558	17.41	0.0382	17.67	0.4131	0.1487	9	-0.58	OK	0
010.99	Total N, Other (18%)	0518	17.65	0.3000	17.67	0.4131	0.1487	9	-0.04	OK	0
010.99	Total N, Other (18%)	0444	17.75	0.3000	17.67	0.4131	0.1487	9	0.18	OK	0
010.99	Total N, Other (18%)	0563	17.90	0.0100	17.67	0.4131	0.1487	9	0.51	OK	0
010.99	Total N, Other (18%)	0600	17.93	0.0600	17.67	0.4131	0.1487	9	0.59	OK	0
010.99	Total N, Other (18%)	0605	17.99	0.3900	17.67	0.4131	0.1487	9	0.71	OK	0
010.99	Total N, Other (18%)	0562	18.11	0.0800	17.67	0.4131	0.1487	9	0.99	OK	0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0114	45.89	0.5100				2			0
020.10	Total P2O5, Gravimetric Quinolinium MolybdoP (%)	0444	46.25	0.5000				2			0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0371	40.86	0.0700	46.18	0.6892	0.1831	13	-7.72	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0580	45.49	0.1200	46.18	0.6892	0.1831	13	-0.99	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0356	45.55	0.3650	46.18	0.6892	0.1831	13	-0.91	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0292	45.82	0.1200	46.18	0.6892	0.1831	13	-0.52	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0405	45.96	0.1400	46.18	0.6892	0.1831	13	-0.31	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0615	46.05	0.9000	46.18	0.6892	0.1831	13	-0.18	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0231	46.23	0.0100	46.18	0.6892	0.1831	13	0.07	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0561	46.23	0.1400	46.18	0.6892	0.1831	13	0.08	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0593	46.30	0.0700	46.18	0.6892	0.1831	13	0.17	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0581	46.44	0.1400	46.18	0.6892	0.1831	13	0.38	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0510	46.87	0.1399	46.18	0.6892	0.1831	13	1.01	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0220	47.00	0.2500	46.18	0.6892	0.1831	13	1.19	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0563	48.45	0.5000	46.18	0.6892	0.1831	13	3.30	NA	0
020.20	Total P2O5, Spectrophotometric MolybdovanadoP (%)	0324	40.80	2.600	46.18	0.6892	0.1831	13	-7.80	NA	1
020.40	Total P2O5, Automated (%)	0042	41.41	2.000	45.53	2.335	0.5000	5	-1.76		0
020.40	Total P2O5, Automated (%)	0586	46.09	0.2300	45.53	2.335	0.5000	5	0.24		0
020.40	Total P2O5, Automated (%)	0096	46.25	0.0400	45.53	2.335	0.5000	5	0.31		0
020.40	Total P2O5, Automated (%)	0035	46.85	0.1000	45.53	2.335	0.5000	5	0.57		0
020.40	Total P2O5, Automated (%)	0626	47.04	0.1300	45.53	2.335	0.5000	5	0.65		0
020.50	Total P2O5, ICP (%)	0543	41.57	1.298	45.82	2.098	0.6324	15	-2.02	NA	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				
020.50	Total P2O5, ICP (%)	0389	42.64	0.8900	45.82	2.098	0.6324	15	-1.52	NA	0
020.50	Total P2O5, ICP (%)	0307	43.30	2.200	45.82	2.098	0.6324	15	-1.20	NA	0
020.50	Total P2O5, ICP (%)	0472	44.56	0.4700	45.82	2.098	0.6324	15	-0.60	NA	0
020.50	Total P2O5, ICP (%)	0521	45.64	0.0000	45.82	2.098	0.6324	15	-0.08	NA	0
020.50	Total P2O5, ICP (%)	0451	45.67	0.0200	45.82	2.098	0.6324	15	-0.07	NA	0
020.50	Total P2O5, ICP (%)	0368	46.17	0.2299	45.82	2.098	0.6324	15	0.17	NA	0
020.50	Total P2O5, ICP (%)	0234	46.25	0.1000	45.82	2.098	0.6324	15	0.21	NA	0
020.50	Total P2O5, ICP (%)	0588	46.41	1.490	45.82	2.098	0.6324	15	0.28	NA	0
020.50	Total P2O5, ICP (%)	0527	46.48	0.0611	45.82	2.098	0.6324	15	0.32	NA	0
020.50	Total P2O5, ICP (%)	0422	46.52	0.4583	45.82	2.098	0.6324	15	0.33	NA	0
020.50	Total P2O5, ICP (%)	0291	46.66	0.0100	45.82	2.098	0.6324	15	0.40	NA	0
020.50	Total P2O5, ICP (%)	0255	46.87	1.076	45.82	2.098	0.6324	15	0.50	NA	0
020.50	Total P2O5, ICP (%)	0524	48.47	1.055	45.82	2.098	0.6324	15	1.26	NA	0
020.50	Total P2O5, ICP (%)	0260	48.93	0.0560	45.82	2.098	0.6324	15	1.48	NA	0
020.99	Total P2O5, Other (%)	0572	44.59	0.9100	45.87	0.4999	0.4529	6	-2.29	NA	0
020.99	Total P2O5, Other (%)	0587	45.67	0.1400	45.87	0.4999	0.4529	6	-0.36	NA	0
020.99	Total P2O5, Other (%)	0515	45.80	2.600	45.87	0.4999	0.4529	6	-0.13	NA	0
020.99	Total P2O5, Other (%)	0513	46.11	0.0400	45.87	0.4999	0.4529	6	0.43	NA	0
020.99	Total P2O5, Other (%)	0600	46.25	0.1000	45.87	0.4999	0.4529	6	0.68	NA	0
020.99	Total P2O5, Other (%)	0562	46.28	0.0500	45.87	0.4999	0.4529	6	0.72	NA	0
030.20	Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP (	0593	0.0300	0.0400				2			0
030.20	Citrate Insoluble P2O5, Spectrophotometric MolybdovanadoP (	0220	0.0750	0.0100				2			0
030.40	Citrate Insoluble P2O5, Automated, test portion 963.03 A-B (%)	0586	0.0200	0.0000				2			0
030.40	Citrate Insoluble P2O5, Automated, test portion 963.03 A-B (%)	0096	0.0400	0.0200				2			0
030.50	Citrate Insoluble P2O5, ICP, test portion 963.03 A-B (%)	0581	0.0500	0.0600				1			0
040.20	Indirect Available P2O5, Spectrophotometric (46%)	0498	45.35	0.3000	46.21	0.7943	0.2100	3	-1.08		0
040.20	Indirect Available P2O5, Spectrophotometric (46%)	0581	46.35	0.0900	46.21	0.7943	0.2100	3	0.18		0
040.20	Indirect Available P2O5, Spectrophotometric (46%)	0220	46.92	0.2400	46.21	0.7943	0.2100	3	0.90		0
040.40	Indirect Available P2O5, Automated (46%)	0096	46.21	0.0600				1			0
040.50	Indirect Available P2O5, ICP (46%)	0547	47.15	0.3000				1			0
040.99	Indirect Available P2O5, Other (46%)	0593	46.27	0.0300				1			0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0086	46.17	0.0677	46.35	0.1846	0.1283	5	-0.98		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0177	46.23	0.2540	46.35	0.1846	0.1283	5	-0.65		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0040	46.25	0.1000	46.35	0.1846	0.1283	5	-0.52		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0494	46.53	0.1700	46.35	0.1846	0.1283	5	0.97		0
041.10	Direct Available P2O5, Gravimetric Quinolinium (46%)	0102	46.57	0.0500	46.35	0.1846	0.1283	5	1.19		0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0220	41.75	0.0900	46.13	0.7157	0.2919	8	-5.60	Low	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0485	45.80	1.000	46.13	0.7157	0.2919	8	-0.42	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0351	45.95	0.3000	46.13	0.7157	0.2919	8	-0.23	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0513	46.04	0.0400	46.13	0.7157	0.2919	8	-0.11	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0055	46.09	0.2800	46.13	0.7157	0.2919	8	-0.05	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0405	46.12	0.1600	46.13	0.7157	0.2919	8	-0.01	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0073	46.90	0.0800	46.13	0.7157	0.2919	8	0.99	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				
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0117	47.07	0.6417	46.13	0.7157	0.2919	8	1.21	OK	0
041.11	Direct Available P2O5, Gravimetric Quinolinium, Citrate-EDTA I	0049	44.75	2.180	46.13	0.7157	0.2919	8	-1.76	Low	1
041.20	Direct Available P2O5, Spectrophotometric (46%)	0027	45.55	0.9600				2			0
041.20	Direct Available P2O5, Spectrophotometric (46%)	0553	46.57	0.5700				2			0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0558	44.57	0.0408	45.89	0.8121	0.2493	9	-1.50	Low	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0095	45.05	0.6000	45.89	0.8121	0.2493	9	-0.96	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0472	45.61	0.1600	45.89	0.8121	0.2493	9	-0.32	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0394	45.84	0.0200	45.89	0.8121	0.2493	9	-0.06	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0354	46.10	0.0000	45.89	0.8121	0.2493	9	0.24	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0177	46.16	0.0998	45.89	0.8121	0.2493	9	0.31	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0231	46.19	0.0600	45.89	0.8121	0.2493	9	0.34	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0055	46.29	1.040	45.89	0.8121	0.2493	9	0.45	OK	0
041.21	Direct Available P2O5, Spectrophotometric, Citrate-EDTA Ext. (	0568	52.60	0.0000	45.89	0.8121	0.2493	9	7.63	High	0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)	0626	45.81	0.1300				2			0
041.40	Direct Available P2O5, Automated, Citrate-EDTA Ext. (46%)	0029	47.30	1.390				2			0
041.50	Direct Available P2O5, ICP (46%)	0605	46.41	0.1700				1			0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0494	45.60	0.1600	46.17	0.5283	0.3778	8	-0.99	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0117	45.77	0.5444	46.17	0.5283	0.3778	8	-0.70	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0360	45.87	0.2500	46.17	0.5283	0.3778	8	-0.53	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0377	45.96	0.5500	46.17	0.5283	0.3778	8	-0.37	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0023	46.23	0.2510	46.17	0.5283	0.3778	8	0.10	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0136	46.30	0.3500	46.17	0.5283	0.3778	8	0.21	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0043	46.76	0.1900	46.17	0.5283	0.3778	8	1.01	OK	0
041.51	Direct Available P2O5, ICP, Citrate-EDTA Ext. (46%)	0025	46.90	1.400	46.17	0.5283	0.3778	8	1.26	OK	0
041.99	Direct Available P2O5, Other (46%)	0572	44.43	0.3600	45.88	0.8787	0.2320	5	-1.65		0
041.99	Direct Available P2O5, Other (46%)	0600	45.88	0.1500	45.88	0.8787	0.2320	5	0.00		0
041.99	Direct Available P2O5, Other (46%)	0562	45.93	0.0400	45.88	0.8787	0.2320	5	0.06		0
041.99	Direct Available P2O5, Other (46%)	0584	46.51	0.3100	45.88	0.8787	0.2320	5	0.71		0
041.99	Direct Available P2O5, Other (46%)	0518	46.65	0.3000	45.88	0.8787	0.2320	5	0.88		0
042.10	Water Soluble OrthoP As P2O5, Spectrophotometric (%)	0558	41.14	0.0343				1			0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0472	37.89	0.3000	41.67	1.286	0.1349	7	-2.66	NA	0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0394	41.04	0.2440	41.67	1.286	0.1349	7	-0.45	NA	0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0231	41.61	0.0700	41.67	1.286	0.1349	7	-0.05	NA	0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0593	41.78	0.1400	41.67	1.286	0.1349	7	0.07	NA	0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0581	41.91	0.1000	41.67	1.286	0.1349	7	0.17	NA	0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0405	42.15	0.0500	41.67	1.286	0.1349	7	0.33	NA	0
048.20	Water Soluble P2O5, Spectrophotometric (%)	0561	43.49	0.0400	41.67	1.286	0.1349	7	1.28	NA	0
048.40	Water Soluble P2O5, Automated (%)	0586	41.26	0.0600	41.50	0.3081	0.0467	3	-0.77		0
048.40	Water Soluble P2O5, Automated (%)	0626	41.39	0.0700	41.50	0.3081	0.0467	3	-0.36		0
048.40	Water Soluble P2O5, Automated (%)	0096	41.85	0.0100	41.50	0.3081	0.0467	3	1.13		0
048.50	Water Soluble P2O5, ICP (%)	0444	42.02	0.6400				1			0
048.99	Water Soluble P2O5, Other (%)	0572	39.14	0.0700	42.13	3.356	0.1700	4	-0.89		0
048.99	Water Soluble P2O5, Other (%)	0513	40.51	0.0800	42.13	3.356	0.1700	4	-0.48		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				
048.99	Water Soluble P2O5, Other (%)	0600	42.03	0.1500	42.13	3.356	0.1700	4	-0.03		0
048.99	Water Soluble P2O5, Other (%)	0577	46.84	0.3800	42.13	3.356	0.1700	4	1.40		0
050.50	Soluble K2O, ICP (Oxalate) (%)	0422	0.1900	0.0022				1			0
050.51	Soluble K2O, ICP (Citrate) (%)	0568	0.3200	0.0000				1			0
050.52	Soluble K2O, ICP (Citrate-EDTA) (%)	0354	0.1940	0.0080				1			0
050.61	Soluble K2O, Flame Photometric (Citrate) (%)	0035	0.8500	0.1000				1			0
050.99	Soluble K2O, Other (%)	0588	0.1445	0.1510	0.1992	0.0506	0.0626	4	-1.08		0
050.99	Soluble K2O, Other (%)	0572	0.1800	0.0000	0.1992	0.0506	0.0626	4	-0.38		0
050.99	Soluble K2O, Other (%)	0527	0.2079	0.0034	0.1992	0.0506	0.0626	4	0.17		0
050.99	Soluble K2O, Other (%)	0524	0.2645	0.0335	0.1992	0.0506	0.0626	4	1.29		0
060.00	Water (Free), Vacuum Oven (%)	0513	1.170	0.0400	2.198	1.033	0.0700	3	-1.00		0
060.00	Water (Free), Vacuum Oven (%)	0581	2.190	0.1400	2.198	1.033	0.0700	3	-0.01		0
060.00	Water (Free), Vacuum Oven (%)	0096	3.235	0.0300	2.198	1.033	0.0700	3	1.00		0
060.30	Water (Free), AFPC No. 2B (105°C oven for 2 hours, 5g sample)	0593	3.285	0.2500				1			0
060.99	Water (Free), Other (%)	0510	3.338	0.0017				1			0
101.00	Acid Soluble Ca, AA, inorganic 965.09 (%)	0553	0.0230	0.0000				1			0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0568	0.2400	0.0000	0.2940	0.0476	0.0250	3	-1.13		0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0096	0.3120	0.0100	0.2940	0.0476	0.0250	3	0.38		0
101.30	Acid Soluble Ca, ICP, test portion inorganic 965.09 (%)	0354	0.3300	0.0400	0.2940	0.0476	0.0250	3	0.76		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0472	0.2250	0.0100	0.2717	0.0379	0.0104	5	-1.23		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0527	0.2380	0.0109	0.2717	0.0379	0.0104	5	-0.89		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0037	0.2847	0.0196	0.2717	0.0379	0.0104	5	0.34		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0630	0.3044	0.0083	0.2717	0.0379	0.0104	5	0.86		0
101.33	Acid Soluble Ca, ICP, 2017.02 (%)	0494	0.3063	0.0033	0.2717	0.0379	0.0104	5	0.91		0
101.99	Acid Soluble Ca, Other (%)	0572	0.2300	0.0000	0.3467	0.1201	0.0600	3	-0.97		0
101.99	Acid Soluble Ca, Other (%)	0593	0.3400	0.0200	0.3467	0.1201	0.0600	3	-0.06		0
101.99	Acid Soluble Ca, Other (%)	0581	0.4700	0.1000	0.3467	0.1201	0.0600	3	1.03		0
121.00	Acid Soluble Mg, AA, inorganic 965.09 (%)	0553	0.6245	0.0070				2			0
121.00	Acid Soluble Mg, AA, inorganic 965.09 (%)	0626	0.6750	0.0300				2			0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0096	0.6730	0.0040	0.6943	0.0238	0.0040	3	-0.90		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0354	0.6900	0.0000	0.6943	0.0238	0.0040	3	-0.18		0
121.30	Acid Soluble Mg, ICP, test portion inorganic 965.09 (%)	0568	0.7200	0.0000	0.6943	0.0238	0.0040	3	1.08		0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0037	0.6215	0.0435	0.6695	0.0497	0.0413	6	-0.86	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0515	0.6389	0.1340	0.6695	0.0497	0.0413	6	-0.55	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0630	0.6521	0.0192	0.6695	0.0497	0.0413	6	-0.31	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0494	0.6685	0.0009	0.6695	0.0497	0.0413	6	-0.02	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0527	0.6920	0.0089	0.6695	0.0497	0.0413	6	0.40	OK	0
121.33	Acid Soluble Mg, ICP, 2017.02 (%)	0472	0.7800	0.0000	0.6695	0.0497	0.0413	6	1.98	OK	0
121.99	Acid Soluble Mg, Other (%)	0515	0.3905	0.0775	0.6870	0.3040	0.0349	5	-0.98		0
121.99	Acid Soluble Mg, Other (%)	0572	0.5050	0.0100	0.6870	0.3040	0.0349	5	-0.60		0
121.99	Acid Soluble Mg, Other (%)	0524	0.6648	0.0221	0.6870	0.3040	0.0349	5	-0.07		0
121.99	Acid Soluble Mg, Other (%)	0593	0.6900	0.0000	0.6870	0.3040	0.0349	5	0.01		0
121.99	Acid Soluble Mg, Other (%)	0581	1.185	0.0300	0.6870	0.3040	0.0349	5	1.64		0

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131.00	Water Soluble Mg, AA (%)	0626	0.0600	0.0000				1			0
131.99	Water Soluble Mg, Other (%)	0572	0.1200	0.0200				1			0
145.99	Sulfate S, HCl soluble, Other (%)	0553	1.185	0.0700	1.243	0.0506	0.0600	3	-1.15		0
145.99	Sulfate S, HCl soluble, Other (%)	0593	1.270	0.0000	1.243	0.0506	0.0600	3	0.53		0
145.99	Sulfate S, HCl soluble, Other (%)	0581	1.275	0.0500	1.243	0.0506	0.0600	3	0.63		0
148.00	Total S, Combustion (%)	0593	1.590	0.0800				1			0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0472	1.120	0.0000	2.591	2.834	0.2032	4	-0.52		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0494	1.145	0.0100	2.591	2.834	0.2032	4	-0.51		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0515	1.258	0.5686	2.591	2.834	0.2032	4	-0.47		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0037	6.841	0.0310	2.591	2.834	0.2032	4	1.50		0
148.07	Total S, ICP, test portion as in 2017.02 (%)	0527	< 0.1		2.591	2.834	0.2032	4			5
148.99	Total S, Other (%)	0572	0.7250	0.0100	1.008	0.2525	0.0497	3	-1.12		0
148.99	Total S, Other (%)	0422	1.090	0.0990	1.008	0.2525	0.0497	3	0.32		0
148.99	Total S, Other (%)	0354	1.210	0.0400	1.008	0.2525	0.0497	3	0.80		0
149.04	S - HNO3 soluble, ICP (%)	0524	1.193	0.0062				1			0
151.30	Acid Soluble As, ICP (ppm)	0605	12.41	0.0500	14.02	1.589	1.000	6	-0.91	NA	0
151.30	Acid Soluble As, ICP (ppm)	0630	12.86	1.649	14.02	1.589	1.000	6	-0.65	NA	0
151.30	Acid Soluble As, ICP (ppm)	0586	13.00	0.0000	14.02	1.589	1.000	6	-0.57	NA	0
151.30	Acid Soluble As, ICP (ppm)	0035	15.25	0.1000	14.02	1.589	1.000	6	0.69	NA	0
151.30	Acid Soluble As, ICP (ppm)	0593	15.25	0.7000	14.02	1.589	1.000	6	0.69	NA	0
151.30	Acid Soluble As, ICP (ppm)	0524	15.36	2.502	14.02	1.589	1.000	6	0.75	NA	0
151.30	Acid Soluble As, ICP (ppm)	0255	0.0000	0.0000	14.02	1.589	1.000	6			4
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0096	10.20	0.4000	12.73	2.250	0.7000	3	-1.13		0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0220	13.50	0.0000	12.73	2.250	0.7000	3	0.34		0
151.32	Acid Soluble As, ICP, 2006.03 (ppm)	0405	14.50	1.000	12.73	2.250	0.7000	3	0.79		0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0394	12.60	0.6051	14.83	1.782	0.3841	6	-1.12	NA	0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0037	14.39	2.103	14.83	1.782	0.3841	6	-0.22	NA	0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0527	14.72	0.0919	14.83	1.782	0.3841	6	-0.05	NA	0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0136	14.81	0.3400	14.83	1.782	0.3841	6	-0.01	NA	0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0563	14.96	0.0900	14.83	1.782	0.3841	6	0.06	NA	0
151.33	Acid Soluble As, ICP, 2017.02 (ppm)	0494	31.20	0.2000	14.83	1.782	0.3841	6	8.19	NA	0
151.34	Acid Soluble As, ICP, EPA 3050B/6010C (ppm)	0368	15.60	0.0000				1			0
151.99	Acid Soluble As, Other (ppm)	0220	13.25	0.1000	13.59	0.3640	0.2733	3	-0.94		0
151.99	Acid Soluble As, Other (ppm)	0626	13.56	0.5700	13.59	0.3640	0.2733	3	-0.11		0
151.99	Acid Soluble As, Other (ppm)	0572	13.98	0.1500	13.59	0.3640	0.2733	3	1.05		0
165.00	Acid Soluble B, Spectrophotometric (%)	0553	0.0275	0.0030				1			0
165.30	Acid Soluble B, ICP, test portion in 982.01 (%)	0354	0.0150	0.0100				1			0
165.99	Acid Soluble B, Other (%)	0524	0.0049	0.0001	8.703	16.93	0.4313	4	-0.44		0
165.99	Acid Soluble B, Other (%)	0472	0.0150	0.0100	8.703	16.93	0.4313	4	-0.44		0
165.99	Acid Soluble B, Other (%)	0515	0.6933	0.3149	8.703	16.93	0.4313	4	-0.40		0
165.99	Acid Soluble B, Other (%)	0593	34.10	1.400	8.703	16.93	0.4313	4	1.27		0
165.99	Acid Soluble B, Other (%)	0527	< 0.01		8.703	16.93	0.4313	4			5
165.99	Acid Soluble B, Other (%)	0572	< 0.0109		8.703	16.93	0.4313	4			5

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171.99	Water Soluble B, Other (%)	0572	< 0.0113					0			5
181.30	Acid Soluble Cd, ICP (ppm)	0630	2.969	0.3870	3.424	0.4782	0.2083	8	-0.87	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0524	3.065	0.2847	3.424	0.4782	0.2083	8	-0.69	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0626	3.085	0.0500	3.424	0.4782	0.2083	8	-0.65	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0035	3.205	0.0300	3.424	0.4782	0.2083	8	-0.42	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0593	3.515	0.0900	3.424	0.4782	0.2083	8	0.17	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0394	3.527	0.0930	3.424	0.4782	0.2083	8	0.20	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0605	3.885	0.2300	3.424	0.4782	0.2083	8	0.88	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0586	10.00	2.000	3.424	0.4782	0.2083	8	12.58	NA	0
181.30	Acid Soluble Cd, ICP (ppm)	0255	6.930	6.781	3.424	0.4782	0.2083	8	6.71	NA	1
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0096	1.450	0.5000	2.550	0.9579	0.5000	3	-1.15		0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0405	3.000	0.0000	2.550	0.9579	0.5000	3	0.47		0
181.32	Acid Soluble Cd, ICP, 2006.03 (ppm)	0220	3.200	0.0000	2.550	0.9579	0.5000	3	0.68		0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0136	3.330	0.1400	3.429	0.0970	0.1765	6	-0.91	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0494	3.375	0.4700	3.429	0.0970	0.1765	6	-0.49	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0037	3.376	0.3139	3.429	0.0970	0.1765	6	-0.48	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0086	3.438	0.0088	3.429	0.0970	0.1765	6	0.08	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0563	3.495	0.0100	3.429	0.0970	0.1765	6	0.61	NA	0
181.33	Acid Soluble Cd, ICP, 2017.02 (ppm)	0527	3.558	0.1164	3.429	0.0970	0.1765	6	1.19	NA	0
181.34	Acid Soluble Cd, ICP, EPA 3050B/6010C (ppm)	0368	2.800	0.0000				1			0
181.99	Acid Soluble Cd, Other (ppm)	0220	3.150	0.1000				2			0
181.99	Acid Soluble Cd, Other (ppm)	0572	3.290	0.1400				2			0
191.30	Acid Soluble Cr, ICP (ppm)	0626	100.5	1.740	118.9	13.66	2.228	9	-1.24	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0035	110.0	2.000	118.9	13.66	2.228	9	-0.60	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0605	113.8	1.410	118.9	13.66	2.228	9	-0.35	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0394	114.6	0.4540	118.9	13.66	2.228	9	-0.29	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0630	115.2	2.300	118.9	13.66	2.228	9	-0.25	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0524	116.3	3.593	118.9	13.66	2.228	9	-0.17	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0027	129.5	2.558	118.9	13.66	2.228	9	0.71	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0593	131.0	4.000	118.9	13.66	2.228	9	0.82	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0586	152.0	2.000	118.9	13.66	2.228	9	2.23	NA	0
191.30	Acid Soluble Cr, ICP (ppm)	0096	101.4	31.20	118.9	13.66	2.228	9	-1.18	NA	1
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0405	118.5	1.000				2			0
191.32	Acid Soluble Cr, ICP, 2006.03 (ppm)	0220	121.0	0.0000				2			0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0563	104.8	0.0900	117.0	5.587	3.570	6	-1.95	NA	0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0136	116.4	3.200	117.0	5.587	3.570	6	-0.09	NA	0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0086	117.3	2.937	117.0	5.587	3.570	6	0.05	NA	0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0037	117.6	11.56	117.0	5.587	3.570	6	0.10	NA	0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0494	118.0	0.0000	117.0	5.587	3.570	6	0.16	NA	0
191.33	Acid Soluble Cr, ICP, 2017.02 (ppm)	0527	124.0	0.0630	117.0	5.587	3.570	6	1.12	NA	0
191.34	Acid Soluble Cr, ICP, EPA 3050B/6010C (ppm)	0368	116.5	1.000				1			0
191.99	Acid Soluble Cr, Other (ppm)	0572	90.26	3.790	103.0	13.72	2.487	3	-0.93		0
191.99	Acid Soluble Cr, Other (ppm)	0626	101.1	2.670	103.0	13.72	2.487	3	-0.13		0

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			Value	Range	Rob Mean	Rob SD	Rob R-bar				
191.99	Acid Soluble Cr, Other (ppm)	0220	117.5	1.000	103.0	13.72	2.487	3	1.06		0
202.30	Acid Soluble Co, ICP (ppm)	0593	2.085	0.0700	3.839	2.434	0.9219	5	-0.63		0
202.30	Acid Soluble Co, ICP (ppm)	0630	2.354	0.3220	3.839	2.434	0.9219	5	-0.53		0
202.30	Acid Soluble Co, ICP (ppm)	0605	2.795	0.1500	3.839	2.434	0.9219	5	-0.37		0
202.30	Acid Soluble Co, ICP (ppm)	0524	3.963	0.0675	3.839	2.434	0.9219	5	0.04		0
202.30	Acid Soluble Co, ICP (ppm)	0586	8.000	4.000	3.839	2.434	0.9219	5	1.49		0
202.30	Acid Soluble Co, ICP (ppm)	0626	< 5		3.839	2.434	0.9219	5			5
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0220	2.750	0.1000				2			0
202.32	Acid Soluble Co, ICP, 2006.03 (ppm)	0405	3.000	0.0000				2			0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0563	2.040	0.0400	2.640	0.3401	0.0809	6	-1.57	OK	0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0494	2.435	0.0300	2.640	0.3401	0.0809	6	-0.54	OK	0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0136	2.725	0.0300	2.640	0.3401	0.0809	6	0.22	OK	0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0037	2.777	0.3758	2.640	0.3401	0.0809	6	0.36	OK	0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0527	2.873	0.1053	2.640	0.3401	0.0809	6	0.61	OK	0
202.33	Acid Soluble Co, ICP, 2017.02 (ppm)	0086	2.899	0.0963	2.640	0.3401	0.0809	6	0.68	OK	0
202.34	Acid Soluble Co, ICP, EPA 3050B/6010C (ppm)	0368	2.350	0.1000				1			0
202.99	Acid Soluble Co, Other (ppm)	0572	1.970	0.0800	5.922	6.223	10.08	3	-0.64		0
202.99	Acid Soluble Co, Other (ppm)	0220	2.700	0.0000	5.922	6.223	10.08	3	-0.52		0
202.99	Acid Soluble Co, Other (ppm)	0255	13.10	20.07	5.922	6.223	10.08	3	1.15		0
202.99	Acid Soluble Co, Other (ppm)	0626	< 5		5.922	6.223	10.08	3			5
221.00	Acid Soluble Cu, AA, inorganic 965.09 (%)	0626	< 0.001					0			5
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 (%)	0035	0.0010	0.0000				1			0
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0255	0.0000	0.0000				1			4
221.30	Acid Soluble Cu, ICP, test portion inorganic 965.09 (%)	0354	< 0.01					1			5
221.32	Acid Soluble Cu, ICP, test portion 2006.03A-C (%)	0405	< 0.0002					0			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0086	0.0004	0.0000				1			0
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0106	0.0000	0.0000				1			4
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0527	< 0.0001					1			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0136	< 0.0002					1			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0394	< 0.0002					1			5
221.33	Acid Soluble Cu, ICP, 2017.02 (%)	0626	< 0.0005					1			5
221.99	Acid Soluble Cu, Other (%)	0572	0.0001	0.0000	0.2115	0.4220	0.0328	4	-0.50		0
221.99	Acid Soluble Cu, Other (%)	0524	0.0003	0.0000	0.2115	0.4220	0.0328	4	-0.50		0
221.99	Acid Soluble Cu, Other (%)	0368	0.0013	0.0005	0.2115	0.4220	0.0328	4	-0.50		0
221.99	Acid Soluble Cu, Other (%)	0593	0.8445	0.0650	0.2115	0.4220	0.0328	4	1.50		0
221.99	Acid Soluble Cu, Other (%)	0586	0.0000	0.0000	0.2115	0.4220	0.0328	4			4
241.00	Acid Soluble Fe, AA, inorganic 965.09 (%)	0626	0.9550	0.0100				2			0
241.00	Acid Soluble Fe, AA, inorganic 965.09 (%)	0553	0.9875	0.0150				2			0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0096	0.9650	0.0000				2			0
241.30	Acid Soluble Fe, ICP, test portion inorganic 965.09 (%)	0354	1.000	0.0000				2			0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0515	0.7433	0.0085	0.9499	0.0763	0.0393	7	-2.45	Low	0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0630	0.8957	0.0807	0.9499	0.0763	0.0393	7	-0.64	OK	0

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			Value	Range	Rob Mean	Rob SD	Rob R-bar				
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0037	0.9200	0.0680	0.9499	0.0763	0.0393	7	-0.35	OK	0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0626	0.9850	0.0100	0.9499	0.0763	0.0393	7	0.42	OK	0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0472	1.000	0.0000	0.9499	0.0763	0.0393	7	0.59	OK	0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0527	1.003	0.0100	0.9499	0.0763	0.0393	7	0.63	OK	0
241.33	Acid Soluble Fe, ICP, 2017.02 (%)	0494	1.011	0.0587	0.9499	0.0763	0.0393	7	0.72	OK	0
241.99	Acid Soluble Fe, Other (%)	0515	0.6171	0.1163	1.030	0.2991	0.0398	5	-1.38		0
241.99	Acid Soluble Fe, Other (%)	0572	0.9900	0.0200	1.030	0.2991	0.0398	5	-0.13		0
241.99	Acid Soluble Fe, Other (%)	0593	1.025	0.0100	1.030	0.2991	0.0398	5	-0.02		0
241.99	Acid Soluble Fe, Other (%)	0524	1.057	0.0328	1.030	0.2991	0.0398	5	0.09		0
241.99	Acid Soluble Fe, Other (%)	0581	1.460	0.0200	1.030	0.2991	0.0398	5	1.44		0
251.30	Acid Soluble Pb, ICP (ppm)	0394	0.9475	0.0550	1.148	0.1265	0.0454	5	-1.38		0
251.30	Acid Soluble Pb, ICP (ppm)	0593	1.110	0.0200	1.148	0.1265	0.0454	5	-0.26		0
251.30	Acid Soluble Pb, ICP (ppm)	0096	1.200	0.0000	1.148	0.1265	0.0454	5	0.36		0
251.30	Acid Soluble Pb, ICP (ppm)	0524	1.205	0.0004	1.148	0.1265	0.0454	5	0.40		0
251.30	Acid Soluble Pb, ICP (ppm)	0630	1.276	0.1060	1.148	0.1265	0.0454	5	0.88		0
251.30	Acid Soluble Pb, ICP (ppm)	0586	5.750	1.500	1.148	0.1265	0.0454	5	31.75		1
251.30	Acid Soluble Pb, ICP (ppm)	0255	0.0000	0.0000	1.148	0.1265	0.0454	5			4
251.30	Acid Soluble Pb, ICP (ppm)	0035	< 2.8		1.148	0.1265	0.0454	5			5
251.30	Acid Soluble Pb, ICP (ppm)	0605	< 5		1.148	0.1265	0.0454	5			5
251.30	Acid Soluble Pb, ICP (ppm)	0626	< 5		1.148	0.1265	0.0454	5			5
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0220	5.500	0.2000				1			0
251.32	Acid Soluble Pb, ICP, 2006.03 (ppm)	0405	< 4					1			5
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0563	1.190	0.0200	2.769	2.320	0.2162	4	-0.68		0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0527	1.338	0.0932	2.769	2.320	0.2162	4	-0.62		0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0086	2.392	0.5615	2.769	2.320	0.2162	4	-0.16		0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0494	6.155	0.1900	2.769	2.320	0.2162	4	1.46		0
251.33	Acid Soluble Pb, ICP, 2017.02 (ppm)	0136	< 3		2.769	2.320	0.2162	4			5
251.34	Acid Soluble Pb, ICP, EPA 3050B/6010C (ppm)	0368	3.700	0.4000				1			0
251.99	Acid Soluble Pb, Other (ppm)	0572	1.190	0.0000				2			0
251.99	Acid Soluble Pb, Other (ppm)	0220	5.250	0.1000				2			0
251.99	Acid Soluble Pb, Other (ppm)	0626	< 5					2			5
261.00	Acid Soluble Mn, AA, Mn2+ only (%)	0553	0.0305	0.0010				1			0
261.12	Acid Soluble Mn, AA, inorganic 965.09 (%)	0626	0.0297	0.0003				1			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0354	0.0300	0.0000				2			0
261.30	Acid Soluble Mn, ICP, test portion 972.02a (%)	0096	315.0	0.0000				2			0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0494	0.0277	0.0069	0.0302	0.0020	0.0027	4	-1.25		0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0472	0.0300	0.0000	0.0302	0.0020	0.0027	4	-0.07		0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0626	0.0304	0.0006	0.0302	0.0020	0.0027	4	0.12		0
261.35	Acid Soluble Mn, ICP, 2017.02 (%)	0527	0.0326	0.0005	0.0302	0.0020	0.0027	4	1.20		0
261.99	Acid Soluble Mn, Other (%)	0572	0.0200	0.0000	109.4	189.4	7.000	3	-0.58		0
261.99	Acid Soluble Mn, Other (%)	0524	0.0315	0.0005	109.4	189.4	7.000	3	-0.58		0
261.99	Acid Soluble Mn, Other (%)	0593	328.0	14.00	109.4	189.4	7.000	3	1.15		0
271.00	Water Soluble Mn, AA (%)	0626	< 0.001					0			5

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			Value	Range	Rob Mean	Rob SD	Rob R-bar				
281.30	Acid Soluble Hg, ICP (ppm)	0394	0.0051	0.0009				2			0
281.30	Acid Soluble Hg, ICP (ppm)	0630	0.0060	0.0000				2			0
281.30	Acid Soluble Hg, ICP (ppm)	0527	< 0.001					2			5
281.30	Acid Soluble Hg, ICP (ppm)	0593	< 0.003					2			5
281.30	Acid Soluble Hg, ICP (ppm)	0515	< 0.1					2			5
281.30	Acid Soluble Hg, ICP (ppm)	0605	< 1.25					2			5
281.30	Acid Soluble Hg, ICP (ppm)	0405	< 2					2			5
281.99	Acid Soluble Hg, Other (ppm)	0626	0.0092	0.0007				2			0
281.99	Acid Soluble Hg, Other (ppm)	0524	0.0235	0.0011				2			0
281.99	Acid Soluble Hg, Other (ppm)	0572	< 0.009					2			5
281.99	Acid Soluble Hg, Other (ppm)	0220	< 0.01					2			5
289.30	Acid Soluble Mo, ICP (ppm)	0255	9.857	0.8670	12.71	3.000	0.9553	9	-0.88	OK	0
289.30	Acid Soluble Mo, ICP (ppm)	0035	10.25	1.510	12.71	3.000	0.9553	9	-0.76	OK	0
289.30	Acid Soluble Mo, ICP (ppm)	0630	11.46	1.400	12.71	3.000	0.9553	9	-0.39	OK	0
289.30	Acid Soluble Mo, ICP (ppm)	0234	11.50	1.000	12.71	3.000	0.9553	9	-0.37	OK	0
289.30	Acid Soluble Mo, ICP (ppm)	0524	11.60	0.5268	12.71	3.000	0.9553	9	-0.34	OK	0
289.30	Acid Soluble Mo, ICP (ppm)	0096	12.75	0.3000	12.71	3.000	0.9553	9	0.01	OK	0
289.30	Acid Soluble Mo, ICP (ppm)	0027	12.96	0.4240	12.71	3.000	0.9553	9	0.08	OK	0
289.30	Acid Soluble Mo, ICP (ppm)	0593	16.85	0.7000	12.71	3.000	0.9553	9	1.27	OK	0
289.30	Acid Soluble Mo, ICP (ppm)	0586	24.75	2.500	12.71	3.000	0.9553	9	3.70	High	0
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0405	13.00	0.0000				2			0
289.32	Acid Soluble Mo, ICP, 2006.03 (ppm)	0220	23.00	6.000				2			0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0563	3.480	0.1000	12.37	0.5671	0.4495	7	-14.17	Low	0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0136	12.20	0.7200	12.37	0.5671	0.4495	7	-0.27	OK	0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0626	12.25	0.5000	12.37	0.5671	0.4495	7	-0.19	OK	0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0037	12.29	1.072	12.37	0.5671	0.4495	7	-0.13	OK	0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0086	12.46	0.1791	12.37	0.5671	0.4495	7	0.15	OK	0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0527	12.64	0.1258	12.37	0.5671	0.4495	7	0.43	OK	0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0106	14.00	0.0000	12.37	0.5671	0.4495	7	2.60	OK	0
289.33	Acid Soluble Mo, ICP, 2017.02 (ppm)	0494	24.70	4.600	12.37	0.5671	0.4495	7	19.66	High	1
289.34	Acid Soluble Mo, ICP, EPA 3050B/6010C (ppm)	0368	13.10	0.0000				1			0
289.99	Acid Soluble Mo, Other (ppm)	0572	12.82	0.2300				2			0
289.99	Acid Soluble Mo, Other (ppm)	0220	16.50	3.000				2			0
291.30	Acid Soluble Ni, ICP (ppm)	0626	8.975	0.2300	11.59	1.249	0.4477	9	-1.93	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0630	10.47	1.410	11.59	1.249	0.4477	9	-0.83	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0035	11.05	0.1000	11.59	1.249	0.4477	9	-0.40	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0605	11.47	1.040	11.59	1.249	0.4477	9	-0.09	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0394	11.56	0.1260	11.59	1.249	0.4477	9	-0.02	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0524	11.60	0.3139	11.59	1.249	0.4477	9	0.01	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0027	12.52	0.3240	11.59	1.249	0.4477	9	0.69	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0096	12.80	0.2000	11.59	1.249	0.4477	9	0.90	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0593	13.10	0.6000	11.59	1.249	0.4477	9	1.12	NA	0
291.30	Acid Soluble Ni, ICP (ppm)	0586	27.00	3.000	11.59	1.249	0.4477	9	11.39	NA	1

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			Value	Range	Rob Mean	Rob SD	Rob R-bar				
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0220	11.35	0.1000				2			0
291.32	Acid Soluble Ni, ICP, 2006.03 (ppm)	0405	12.50	1.000				2			0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0563	7.350	0.1000	11.37	1.381	0.6417	6	-2.60	NA	0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0136	10.74	0.3100	11.37	1.381	0.6417	6	-0.41	NA	0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0037	11.32	1.123	11.37	1.381	0.6417	6	-0.03	NA	0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0086	12.03	0.1830	11.37	1.381	0.6417	6	0.42	NA	0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0494	12.25	3.300	11.37	1.381	0.6417	6	0.57	NA	0
291.33	Acid Soluble Ni, ICP, 2017.02 (ppm)	0527	12.61	0.3695	11.37	1.381	0.6417	6	0.80	NA	0
291.34	Acid Soluble Ni, ICP, EPA 3050B/6010C (ppm)	0368	11.90	0.2000				1			0
291.99	Acid Soluble Ni, Other (ppm)	0572	8.770	0.4200	18.26	17.04	6.880	4	-0.56		0
291.99	Acid Soluble Ni, Other (ppm)	0626	9.340	0.3600	18.26	17.04	6.880	4	-0.52		0
291.99	Acid Soluble Ni, Other (ppm)	0220	11.15	0.3000	18.26	17.04	6.880	4	-0.42		0
291.99	Acid Soluble Ni, Other (ppm)	0255	43.77	26.44	18.26	17.04	6.880	4	1.50		0
301.30	Acid Soluble Se, ICP (ppm)	0524	0.4742	0.0422				2			0
301.30	Acid Soluble Se, ICP (ppm)	0630	1.171	0.2600				2			0
301.30	Acid Soluble Se, ICP (ppm)	0593	< 0.0001					2			5
301.30	Acid Soluble Se, ICP (ppm)	0605	< 1.65					2			5
301.30	Acid Soluble Se, ICP (ppm)	0035	< 12					2			5
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0220	0.3500	0.1000				1			0
301.32	Acid Soluble Se, ICP, 2006.03 (ppm)	0405	< 10					1			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0394	0.2668	0.0242				1			0
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0527	< 0.01					1			5
301.33	Acid Soluble Se, ICP, 2017.02 (ppm)	0494	< 1					1			5
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0626	< 1					0			5
301.34	Acid Soluble Se, ICP, EPA 3050B/6010C (ppm)	0368	< 1.3					0			5
301.99	Acid Soluble Se, Other (ppm)	0220	0.6000	0.2000				2			0
301.99	Acid Soluble Se, Other (ppm)	0572	1.625	0.2100				2			0
301.99	Acid Soluble Se, Other (ppm)	0255	0.0000	0.0000				2			4
311.33	Sodium, ICP, test portion as in 2017.02 (%)	0527	0.2093	0.0025				1			0
311.99	Sodium, Other (%)	0572	0.1500	0.0000	0.2117	0.0548	0.0500	3	-1.12		0
311.99	Sodium, Other (%)	0096	0.2300	0.0000	0.2117	0.0548	0.0500	3	0.33		0
311.99	Sodium, Other (%)	0354	0.2550	0.0500	0.2117	0.0548	0.0500	3	0.79		0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (%)	0626	0.0056	0.0002				2			0
321.00	Acid Soluble Zn, AA, inorganic 965.09 (%)	0553	0.0060	0.0000				2			0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0255	0.0040	0.0000	0.0065	0.0025	0.0009	3	-1.00		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0035	0.0065	0.0010	0.0065	0.0025	0.0009	3	0.00		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0096	0.0090	0.0008	0.0065	0.0025	0.0009	3	1.00		0
321.30	Acid Soluble Zn, ICP, test portion inorganic 965.09 (%)	0354	< 0.01		0.0065	0.0025	0.0009	3			5
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0220	0.0055	0.0002				2			0
321.32	Acid Soluble Zn, ICP, test portion 2006.03A-C (%)	0405	0.0055	0.0002				2			0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0106	0.0042	0.0000	0.0055	0.0010	0.0007	9	-1.18	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0630	0.0044	0.0016	0.0055	0.0010	0.0007	9	-1.00	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0136	0.0050	0.0000	0.0055	0.0010	0.0007	9	-0.44	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				
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0494	0.0055	0.0010	0.0055	0.0010	0.0007	9	0.02	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0086	0.0056	0.0001	0.0055	0.0010	0.0007	9	0.07	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0626	0.0056	0.0001	0.0055	0.0010	0.0007	9	0.07	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0037	0.0057	0.0006	0.0055	0.0010	0.0007	9	0.21	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0394	0.0064	0.0000	0.0055	0.0010	0.0007	9	0.86	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0593	0.0100	0.0000	0.0055	0.0010	0.0007	9	4.20	OK	0
321.33	Acid Soluble Zn, ICP, 2017.02 (%)	0527	< 0.01		0.0055	0.0010	0.0007	9			5
321.99	Acid Soluble Zn, Other (%)	0572	0.0039	0.0001	11.30	25.27	1.750	5	-0.45		0
321.99	Acid Soluble Zn, Other (%)	0368	0.0057	0.0003	11.30	25.27	1.750	5	-0.45		0
321.99	Acid Soluble Zn, Other (%)	0027	0.0059	0.0008	11.30	25.27	1.750	5	-0.45		0
321.99	Acid Soluble Zn, Other (%)	0524	0.0061	0.0000	11.30	25.27	1.750	5	-0.45		0
321.99	Acid Soluble Zn, Other (%)	0586	56.50	7.000	11.30	25.27	1.750	5	1.79		0
325.00	Water Soluble Zn, AA (%)	0626	< 0.001					0			5
325.30	Water Soluble Zn, ICP (%)	0626	< 0.001					0			5
325.99	Water Soluble Zn, Other (%)	0572	0.0006	0.0001				1			0
431.99	Soluble Si in nonliquids, Other (%)	0572	< 0.0068					0			5

Interpreting Z Scores and Flags:

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated.

Notes:

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