

Analyte Proficiency From All Labs
Sample # 220213
Granular Urea 46-0-0

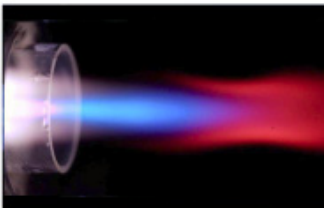
Magruder Fertilizer PT Program
Regular PT Scheme Sample Doubles with N Scheme
Statistical Summary

Analytes: 30
Labs Reporting: 103
Issue Date : 03/31/2022

Analyte Code	Analyte Sample # 220213	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Analyte IA Ratio	Average Range (R-bar)	Horwitz %RSD
001	Ammoniacal N (%)	2	1	0.4800	0.0283								
005	Urea N (%)	11	10	45.14	1.785	45.64		0.7884	0.3116	1.73%		0.3949	1.48%
006	Biuret N (%)	7	7	0.8213	0.3741	0.9099		0.1867	0.0882	20.52%		0.0249	4.06%
007	Urea (%)	3	3	31.16	25.92	31.16		25.92	18.71	83.20%		0.0967	1.79%
008	Biuret (%)	13	12	0.8902	0.2559	0.9291		0.0815	0.0294	8.77%		0.0242	4.04%
009	Ammoniacal Plus Nitrate N (%)	1		0.5000									
010	Total N (46%)	98	96	46.26	0.6016	46.25	0.8800	0.4025	0.0513	0.87%	1.07	0.2041	1.47%
020	Total P2O5 (%)	2	2	0.0017	0.0003								
041	Direct Available P2O5 (%)	3	2	0.0710	0.0344	0.0565	0.6700	0.0332	0.0294	58.82%	0.12	0.0030	6.16%
050	Soluble K2O (%)	5	4	0.0441	0.0409	0.0301	0.4100	0.0304	0.0190	101.11%	0.17	0.0008	6.78%
060	Water (Free) (%)	14	13	0.2342	0.1594	0.1931		0.0962	0.0333	49.80%		0.0164	5.12%
101	Acid Soluble Ca (%)	2	1	0.0455	0.0629								
121	Acid Soluble Mg (%)	5	4	0.0087	0.0056	0.0096	0.2005	0.0061	0.0038	63.33%	0.07	0.0037	8.05%
148	Total S (%)	2	2	0.0183	0.0236								
149	S - HNO3 soluble (%)	1		0.0004									
151	Acid Soluble As (ppm)	2	2	0.0216	0.0189								
165	Acid Soluble B (%)	2	1	0.0051	0.0070								
181	Acid Soluble Cd (ppm)	2	1	0.0061	0.0055								
191	Acid Soluble Cr (ppm)	4	4	1.719	1.901	1.719		1.901	1.188	110.60%		0.8739	14.74%
202	Acid Soluble Co (ppm)	3	3	0.2824	0.3743	0.2824	1.0847	0.3743	0.2701	132.56%	0.80	0.0306	19.35%
221	Acid Soluble Cu (%)	5	3	0.0023	0.0043	0.0005	0.0050	0.0003	0.0002	53.93%	0.12	0.0001	12.69%
241	Acid Soluble Fe (%)	4	3	0.0051	0.0049	0.0035	0.0053	0.0045	0.0032	128.04%	1.94	0.0028	9.37%
251	Acid Soluble Pb (ppm)	4	3	1.407	1.879	1.862		2.013	1.453	108.08%		0.8673	14.57%
261	Acid Soluble Mn (%)	2	1	0.0051	0.0069								
281	Acid Soluble Hg (ppm)	3	2	0.0041	0.0053	0.0061		0.0056	0.0049	91.37%		0.0007	22.00%
289	Acid Soluble Mo (ppm)	2	1	0.0814	0.0758								
291	Acid Soluble Ni (ppm)	3	2	0.4407	0.4955	0.6578		0.4564	0.4034	69.39%		0.2485	17.04%
301	Acid Soluble Se (ppm)	4	4	2.053	2.322	2.053		2.322	1.451	113.11%		0.1226	14.36%
311	Sodium (%)	1		0.0250									

Analyte Code	Analyte Sample # 220213	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Analyte IA Ratio	Average Range (R-bar)	Horwitz %RSD
321	Acid Soluble Zn (%)	2	1	0.0051	0.0069								

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



Analyte Proficiency From All Labs

Magruder Fertilizer PT Program

Analytes: 30

Sample # 220213

Regular PT Scheme Sample Doubles with N Scheme

Labs Reporting: 103

Granular Urea 46-0-0

Lab Values

Issue Date : 03/31/2022

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
001	Ammoniacal N (%)	0524	0.4600	0.0000				1		001.99	0
001	Ammoniacal N (%)	0444	< 0.5					1		001.10	5
005	Urea N (%)	0356	44.39	0.3700	45.64	0.7884	0.3949	10	-1.48	005.20	0
005	Urea N (%)	0451	44.60	2.290	45.64	0.7884	0.3949	10	-1.23	005.20	0
005	Urea N (%)	0535	45.30	0.2000	45.64	0.7884	0.3949	10	-0.40	005.99	0
005	Urea N (%)	0524	45.64	0.3700	45.64	0.7884	0.3949	10	-0.01	005.99	0
005	Urea N (%)	0549	45.81	0.1200	45.64	0.7884	0.3949	10	0.20	005.99	0
005	Urea N (%)	0538	45.87	0.0600	45.64	0.7884	0.3949	10	0.27	005.99	0
005	Urea N (%)	0569	45.88	0.2000	45.64	0.7884	0.3949	10	0.28	005.99	0
005	Urea N (%)	0519	46.02	0.0190	45.64	0.7884	0.3949	10	0.45	005.99	0
005	Urea N (%)	0415	46.07	0.0800	45.64	0.7884	0.3949	10	0.51	005.99	0
005	Urea N (%)	0300	46.77	0.2400	45.64	0.7884	0.3949	10	1.33	005.99	0
005	Urea N (%)	0553	40.15	3.700	45.64	0.7884	0.3949	10	-6.48	005.99	1
006	Biuret N (%)	0563	0.0096	0.0022	0.9099	0.1867	0.0249	7	-4.36	006.10	0
006	Biuret N (%)	0558	0.7357	0.0103	0.9099	0.1867	0.0249	7	-0.84	006.10	0
006	Biuret N (%)	0594	0.9200	0.0200	0.9099	0.1867	0.0249	7	0.05	006.10	0
006	Biuret N (%)	0481	0.9900	0.0200	0.9099	0.1867	0.0249	7	0.39	006.10	0
006	Biuret N (%)	0595	0.9900	0.0000	0.9099	0.1867	0.0249	7	0.39	006.10	0
006	Biuret N (%)	0444	1.035	0.0900	0.9099	0.1867	0.0249	7	0.61	006.10	0
006	Biuret N (%)	0575	1.069	0.0320	0.9099	0.1867	0.0249	7	0.77	006.10	0
007	Urea (%)	0220	1.225	0.0900	31.16	25.92	0.0967	3	-1.15	007.20	0
007	Urea (%)	0540	46.00	0.1000	31.16	25.92	0.0967	3	0.57	007.00	0
007	Urea (%)	0444	46.25	0.1000	31.16	25.92	0.0967	3	0.58	007.99	0
008	Biuret (%)	0572	0.0815	0.0010	0.9291	0.0815	0.0242	12	-10.40	008.10	0
008	Biuret (%)	0493	0.8350	0.0100	0.9291	0.0815	0.0242	12	-1.15	008.10	0
008	Biuret (%)	0513	0.8650	0.0100	0.9291	0.0815	0.0242	12	-0.79	008.10	0
008	Biuret (%)	0534	0.9050	0.0100	0.9291	0.0815	0.0242	12	-0.30	008.10	0
008	Biuret (%)	0405	0.9100	0.0200	0.9291	0.0815	0.0242	12	-0.23	008.10	0
008	Biuret (%)	0498	0.9250	0.0100	0.9291	0.0815	0.0242	12	-0.05	008.00	0
008	Biuret (%)	0510	0.9456	0.0071	0.9291	0.0815	0.0242	12	0.20	008.10	0
008	Biuret (%)	0415	0.9500	0.1000	0.9291	0.0815	0.0242	12	0.26	008.10	0
008	Biuret (%)	0585	0.9620	0.0080	0.9291	0.0815	0.0242	12	0.40	008.10	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
008	Biuret (%)	0585	0.9630	0.0040	0.9291	0.0815	0.0242	12	0.42	008.99	0
008	Biuret (%)	0548	1.030	0.0800	0.9291	0.0815	0.0242	12	1.24	008.99	0
008	Biuret (%)	0578	1.125	0.0300	0.9291	0.0815	0.0242	12	2.41	008.10	0
008	Biuret (%)	0476	1.076	0.1940	0.9291	0.0815	0.0242	12	1.80	008.99	1
009	Ammoniacal Plus Nitrate N (%)	0444	< 0.5					0		009.10	5
010	Total N (46%)	0593	44.03†	0.7500	46.25	0.4025	0.2041	96	-5.52	010.60	0
010	Total N (46%)	0518	44.50†	0.0500	46.25	0.4025	0.2041	96	-4.35	010.99	0
010	Total N (46%)	0117	44.86†	0.0400	46.25	0.4025	0.2041	96	-3.45	010.12	0
010	Total N (46%)	0086	45.35†	1.353	46.25	0.4025	0.2041	96	-2.23	010.60	0
010	Total N (46%)	0535	45.50	0.2000	46.25	0.4025	0.2041	96	-1.86	010.11	0
010	Total N (46%)	0578	45.54	0.0401	46.25	0.4025	0.2041	96	-1.76	010.11	0
010	Total N (46%)	0421	45.63	0.6300	46.25	0.4025	0.2041	96	-1.55	010.60	0
010	Total N (46%)	0533	45.64	0.1500	46.25	0.4025	0.2041	96	-1.52	010.99	0
010	Total N (46%)	0476	45.65	0.1118	46.25	0.4025	0.2041	96	-1.48	010.99	0
010	Total N (46%)	0025	45.76	0.6100	46.25	0.4025	0.2041	96	-1.22	010.60	0
010	Total N (46%)	0524	45.77	1.274	46.25	0.4025	0.2041	96	-1.19	010.99	0
010	Total N (46%)	0558	45.78	0.0256	46.25	0.4025	0.2041	96	-1.16	010.99	0
010	Total N (46%)	0498	45.80	0.6000	46.25	0.4025	0.2041	96	-1.11	010.12	0
010	Total N (46%)	0356	45.81	0.3260	46.25	0.4025	0.2041	96	-1.08	010.60	0
010	Total N (46%)	0472	45.83	0.1300	46.25	0.4025	0.2041	96	-1.05	010.60	0
010	Total N (46%)	0136	45.85	0.1000	46.25	0.4025	0.2041	96	-0.99	010.60	0
010	Total N (46%)	0532	45.92	0.1200	46.25	0.4025	0.2041	96	-0.81	010.99	0
010	Total N (46%)	0234	45.95	0.3000	46.25	0.4025	0.2041	96	-0.74	010.60	0
010	Total N (46%)	0095	45.96	0.1000	46.25	0.4025	0.2041	96	-0.71	010.60	0
010	Total N (46%)	0536	45.96	0.1200	46.25	0.4025	0.2041	96	-0.71	010.99	0
010	Total N (46%)	0102	45.97	0.0500	46.25	0.4025	0.2041	96	-0.70	010.60	0
010	Total N (46%)	0564	45.97	0.1600	46.25	0.4025	0.2041	96	-0.69	010.99	0
010	Total N (46%)	0560	45.99	0.0610	46.25	0.4025	0.2041	96	-0.64	010.99	0
010	Total N (46%)	0600	46.00	0.0600	46.25	0.4025	0.2041	96	-0.62	010.11	0
010	Total N (46%)	0576	46.00	0.0000	46.25	0.4025	0.2041	96	-0.62	010.99	0
010	Total N (46%)	0600	46.01	0.0600	46.25	0.4025	0.2041	96	-0.59	010.99	0
010	Total N (46%)	0539	46.01	0.1000	46.25	0.4025	0.2041	96	-0.59	010.11	0
010	Total N (46%)	0556	46.02	0.0200	46.25	0.4025	0.2041	96	-0.57	010.99	0
010	Total N (46%)	0211	46.03	0.1400	46.25	0.4025	0.2041	96	-0.54	010.12	0
010	Total N (46%)	0377	46.04	0.4800	46.25	0.4025	0.2041	96	-0.52	010.60	0
010	Total N (46%)	0043	46.05	0.0500	46.25	0.4025	0.2041	96	-0.50	010.60	0
010	Total N (46%)	0572	46.06	0.0500	46.25	0.4025	0.2041	96	-0.48	010.12	0
010	Total N (46%)	0231	46.09	0.1000	46.25	0.4025	0.2041	96	-0.39	010.60	0
010	Total N (46%)	0042	46.10	0.4000	46.25	0.4025	0.2041	96	-0.37	010.60	0
010	Total N (46%)	0389	46.12	0.0400	46.25	0.4025	0.2041	96	-0.32	010.60	0
010	Total N (46%)	0548	46.13	0.1100	46.25	0.4025	0.2041	96	-0.30	010.11	0
010	Total N (46%)	0027	46.15	0.3000	46.25	0.4025	0.2041	96	-0.24	010.60	0
010	Total N (46%)	0325	46.15	1.500	46.25	0.4025	0.2041	96	-0.24	010.60	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010	Total N (46%)	0451	46.15	0.5000	46.25	0.4025	0.2041	96	-0.24	010.60	0
010	Total N (46%)	0562	46.15	0.1000	46.25	0.4025	0.2041	96	-0.24	010.99	0
010	Total N (46%)	0559	46.16	0.0100	46.25	0.4025	0.2041	96	-0.23	010.99	0
010	Total N (46%)	0551	46.17	0.0000	46.25	0.4025	0.2041	96	-0.19	010.99	0
010	Total N (46%)	0567	46.17	0.0000	46.25	0.4025	0.2041	96	-0.19	010.99	0
010	Total N (46%)	0494	46.19	0.1100	46.25	0.4025	0.2041	96	-0.16	010.60	0
010	Total N (46%)	0585	46.19	0.0000	46.25	0.4025	0.2041	96	-0.14	010.17	0
010	Total N (46%)	0547	46.21	0.0300	46.25	0.4025	0.2041	96	-0.11	010.60	0
010	Total N (46%)	0585	46.22	0.0400	46.25	0.4025	0.2041	96	-0.07	010.99	0
010	Total N (46%)	0041	46.23	0.5300	46.25	0.4025	0.2041	96	-0.06	010.60	0
010	Total N (46%)	0405	46.23	0.0200	46.25	0.4025	0.2041	96	-0.04	010.60	0
010	Total N (46%)	0493	46.23	0.1000	46.25	0.4025	0.2041	96	-0.04	010.99	0
010	Total N (46%)	0055	46.24	0.2800	46.25	0.4025	0.2041	96	-0.02	010.60	0
010	Total N (46%)	0444	46.25	0.1000	46.25	0.4025	0.2041	96	0.01	010.60	0
010	Total N (46%)	0595	46.26	0.0000	46.25	0.4025	0.2041	96	0.03	010.99	0
010	Total N (46%)	0602	46.30	0.1700	46.25	0.4025	0.2041	96	0.12	010.12	0
010	Total N (46%)	0602	46.30	0.1300	46.25	0.4025	0.2041	96	0.12	010.99	0
010	Total N (46%)	0260	46.30	0.2000	46.25	0.4025	0.2041	96	0.13	010.60	0
010	Total N (46%)	0594	46.30	0.0000	46.25	0.4025	0.2041	96	0.13	010.99	0
010	Total N (46%)	0513	46.31	0.0900	46.25	0.4025	0.2041	96	0.14	010.99	0
010	Total N (46%)	0579	46.33	0.1960	46.25	0.4025	0.2041	96	0.21	010.60	0
010	Total N (46%)	0481	46.35	0.6500	46.25	0.4025	0.2041	96	0.24	010.60	0
010	Total N (46%)	0452	46.35	0.0200	46.25	0.4025	0.2041	96	0.25	010.60	0
010	Total N (46%)	0586	46.37	0.2200	46.25	0.4025	0.2041	96	0.30	010.60	0
010	Total N (46%)	0177	46.40	0.1630	46.25	0.4025	0.2041	96	0.38	010.60	0
010	Total N (46%)	0220	46.41	0.0400	46.25	0.4025	0.2041	96	0.40	010.60	0
010	Total N (46%)	0169	46.42	0.0200	46.25	0.4025	0.2041	96	0.43	010.60	0
010	Total N (46%)	0360	46.43	0.0300	46.25	0.4025	0.2041	96	0.44	010.60	0
010	Total N (46%)	0023	46.43	0.0420	46.25	0.4025	0.2041	96	0.45	010.60	0
010	Total N (46%)	0510	46.46	0.1165	46.25	0.4025	0.2041	96	0.53	010.11	0
010	Total N (46%)	0575	46.47	0.0860	46.25	0.4025	0.2041	96	0.55	010.99	0
010	Total N (46%)	0390	46.50	0.0120	46.25	0.4025	0.2041	96	0.62	010.60	0
010	Total N (46%)	0534	46.50	0.0000	46.25	0.4025	0.2041	96	0.63	010.60	0
010	Total N (46%)	0029	46.51	0.3800	46.25	0.4025	0.2041	96	0.65	010.60	0
010	Total N (46%)	0563	46.52	0.4400	46.25	0.4025	0.2041	96	0.68	010.99	0
010	Total N (46%)	0568	46.55	0.1000	46.25	0.4025	0.2041	96	0.75	010.12	0
010	Total N (46%)	0521	46.59	0.0000	46.25	0.4025	0.2041	96	0.86	010.60	0
010	Total N (46%)	0561	46.61	0.3500	46.25	0.4025	0.2041	96	0.89	010.60	0
010	Total N (46%)	0049	46.62	0.2900	46.25	0.4025	0.2041	96	0.91	010.60	0
010	Total N (46%)	0040	46.65	0.3000	46.25	0.4025	0.2041	96	1.00	010.60	0
010	Total N (46%)	0073	46.65	0.3400	46.25	0.4025	0.2041	96	1.00	010.60	0
010	Total N (46%)	0422	46.66	0.1200	46.25	0.4025	0.2041	96	1.02	010.60	0
010	Total N (46%)	0072	46.67	0.1500	46.25	0.4025	0.2041	96	1.04	010.60	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010	Total N (46%)	0537	46.68	0.6000	46.25	0.4025	0.2041	96	1.07	010.99	0
010	Total N (46%)	0035	46.70	0.0000	46.25	0.4025	0.2041	96	1.12	010.60	0
010	Total N (46%)	0354	46.70	0.0000	46.25	0.4025	0.2041	96	1.12	010.60	0
010	Total N (46%)	0527	46.71	0.0030	46.25	0.4025	0.2041	96	1.15	010.60	0
010	Total N (46%)	0291	46.74	0.0100	46.25	0.4025	0.2041	96	1.21	010.60	0
010	Total N (46%)	0230	46.75	0.1000	46.25	0.4025	0.2041	96	1.25	010.60	0
010	Total N (46%)	0324	46.75	0.1000	46.25	0.4025	0.2041	96	1.25	010.60	0
010	Total N (46%)	0485	46.78	0.4800	46.25	0.4025	0.2041	96	1.32	010.60	0
010	Total N (46%)	0481	46.89	0.1100	46.25	0.4025	0.2041	96	1.58	010.99	0
010	Total N (46%)	0543	46.93	0.0100	46.25	0.4025	0.2041	96	1.68	010.60	0
010	Total N (46%)	0542	47.25‡	0.0480	46.25	0.4025	0.2041	96	2.49	010.60	0
010	Total N (46%)	0587	47.29‡	0.2300	46.25	0.4025	0.2041	96	2.58	010.60	0
010	Total N (46%)	0255	47.41‡	0.3270	46.25	0.4025	0.2041	96	2.88	010.60	0
010	Total N (46%)	0545	48.04‡	0.0600	46.25	0.4025	0.2041	96	4.45	010.99	0
010	Total N (46%)	0368	48.21‡	0.3290	46.25	0.4025	0.2041	96	4.88	010.60	0
010	Total N (46%)	0157	45.75	1.900	46.25	0.4025	0.2041	96	-1.24	010.60	1
010	Total N (46%)	0131	48.36‡	3.820	46.25	0.4025	0.2041	96	5.24	010.60	1
020	Total P2O5 (%)	0515	0.0015	0.0001				2		020.99	0
020	Total P2O5 (%)	0524	0.0019	0.0002				2		020.50	0
041	Direct Available P2O5 (%)	0354	0.0330	0.0060				2		041.21	0
041	Direct Available P2O5 (%)	0568	0.0800	0.0000				2		041.21	0
041	Direct Available P2O5 (%)	0325	< 0.1					2		041.50	5
050	Soluble K2O (%)	0515	0.0014	0.0002	0.0301	0.0304	0.0008	4	-0.94	050.99	0
050	Soluble K2O (%)	0524	0.0124	0.0019	0.0301	0.0304	0.0008	4	-0.58	050.99	0
050	Soluble K2O (%)	0354	0.0365	0.0010	0.0301	0.0304	0.0008	4	0.21	050.52	0
050	Soluble K2O (%)	0568	0.0700	0.0000	0.0301	0.0304	0.0008	4	1.31	050.51	0
050	Soluble K2O (%)	0325	< 0.1		0.0301	0.0304	0.0008	4		050.99	5
060	Water (Free) (%)	0586	0.0750	0.0300	0.1931	0.0962	0.0164	13	-1.23	060.99	0
060	Water (Free) (%)	0405	0.1000	0.0000	0.1931	0.0962	0.0164	13	-0.97	060.00	0
060	Water (Free) (%)	0220	0.1100	0.0200	0.1931	0.0962	0.0164	13	-0.86	060.00	0
060	Water (Free) (%)	0585	0.1300	0.0000	0.1931	0.0962	0.0164	13	-0.66	060.20	0
060	Water (Free) (%)	0595	0.1300	0.0020	0.1931	0.0962	0.0164	13	-0.66	060.20	0
060	Water (Free) (%)	0593	0.1550	0.0500	0.1931	0.0962	0.0164	13	-0.40	060.30	0
060	Water (Free) (%)	0594	0.2050	0.0100	0.1931	0.0962	0.0164	13	0.12	060.20	0
060	Water (Free) (%)	0575	0.2110	0.0220	0.1931	0.0962	0.0164	13	0.19	060.10	0
060	Water (Free) (%)	0513	0.2330	0.0020	0.1931	0.0962	0.0164	13	0.41	060.99	0
060	Water (Free) (%)	0493	0.2350	0.0100	0.1931	0.0962	0.0164	13	0.44	060.20	0
060	Water (Free) (%)	0578	0.2621	0.0007	0.1931	0.0962	0.0164	13	0.72	060.20	0
060	Water (Free) (%)	0510	0.3273	0.0269	0.1931	0.0962	0.0164	13	1.39	060.99	0
060	Water (Free) (%)	0548	0.4300	0.0400	0.1931	0.0962	0.0164	13	2.46	060.99	0
060	Water (Free) (%)	0498	0.6750	0.1100	0.1931	0.0962	0.0164	13	5.01	060.99	1
101	Acid Soluble Ca (%)	0354	0.0900	0.0400				1		101.30	0
101	Acid Soluble Ca (%)	0568	< 0.001					1		101.30	5

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
121	Acid Soluble Mg (%)	0524	0.0019	0.0000	0.0096	0.0061	0.0037	4	-1.27	121.99	0
121	Acid Soluble Mg (%)	0515	0.0097	0.0000	0.0096	0.0061	0.0037	4	0.02	121.33	0
121	Acid Soluble Mg (%)	0354	0.0100	0.0000	0.0096	0.0061	0.0037	4	0.07	121.30	0
121	Acid Soluble Mg (%)	0515	0.0168	0.0147	0.0096	0.0061	0.0037	4	1.18	121.99	0
121	Acid Soluble Mg (%)	0568	< 0.005		0.0096	0.0061	0.0037	4		121.30	5
148	Total S (%)	0515	0.0016	0.0002				2		148.07	0
148	Total S (%)	0354	0.0350	0.0300				2		148.99	0
149	S - HNO3 soluble (%)	0524	0.0004	0.0001				1		149.04	0
151	Acid Soluble As (ppm)	0524	0.0083	0.0089				2		151.30	0
151	Acid Soluble As (ppm)	0519	0.0350	0.0100				2		151.99	0
165	Acid Soluble B (%)	0524	0.0001	0.0000				1		165.99	0
165	Acid Soluble B (%)	0354	< 0.01					1		165.30	5
181	Acid Soluble Cd (ppm)	0519	0.0100	0.0000				1		181.99	0
181	Acid Soluble Cd (ppm)	0524	0.0022	0.0044				1		181.30	4
191	Acid Soluble Cr (ppm)	0524	0.1751	0.0127	1.719	1.901	0.8739	4	-0.81	191.30	0
191	Acid Soluble Cr (ppm)	0519	0.8350	0.0900	1.719	1.901	0.8739	4	-0.46	191.99	0
191	Acid Soluble Cr (ppm)	0515	1.395	0.0300	1.719	1.901	0.8739	4	-0.17	191.33	0
191	Acid Soluble Cr (ppm)	0515	4.472	3.363	1.719	1.901	0.8739	4	1.45	191.34	0
202	Acid Soluble Co (ppm)	0519	0.0100	0.0000	0.2824	0.3743	0.0306	3	-0.73	202.99	0
202	Acid Soluble Co (ppm)	0524	0.1279	0.0480	0.2824	0.3743	0.0306	3	-0.41	202.30	0
202	Acid Soluble Co (ppm)	0515	0.7092	0.0437	0.2824	0.3743	0.0306	3	1.14	202.33	0
221	Acid Soluble Cu (%)	0524	0.0002	0.0000	0.0005	0.0003	0.0001	3	-1.06	221.99	0
221	Acid Soluble Cu (%)	0515	0.0005	0.0000	0.0005	0.0003	0.0001	3	0.13	221.33	0
221	Acid Soluble Cu (%)	0515	0.0007	0.0002	0.0005	0.0003	0.0001	3	0.93	221.99	0
221	Acid Soluble Cu (%)	0519	< 0.0001		0.0005	0.0003	0.0001	3		221.99	5
221	Acid Soluble Cu (%)	0354	< 0.01		0.0005	0.0003	0.0001	3		221.30	5
241	Acid Soluble Fe (%)	0524	0.0002	0.0001	0.0035	0.0045	0.0028	3	-0.75	241.99	0
241	Acid Soluble Fe (%)	0515	0.0018	0.0005	0.0035	0.0045	0.0028	3	-0.39	241.33	0
241	Acid Soluble Fe (%)	0515	0.0086	0.0077	0.0035	0.0045	0.0028	3	1.14	241.99	0
241	Acid Soluble Fe (%)	0354	< 0.01		0.0035	0.0045	0.0028	3		241.30	5
251	Acid Soluble Pb (ppm)	0519	0.1400	0.0400	1.862	2.013	0.8673	3	-0.86	251.99	0
251	Acid Soluble Pb (ppm)	0515	1.372	1.866	1.862	2.013	0.8673	3	-0.24	251.34	0
251	Acid Soluble Pb (ppm)	0515	4.075	0.6960	1.862	2.013	0.8673	3	1.10	251.33	0
251	Acid Soluble Pb (ppm)	0524	0.0402	0.0804	1.862	2.013	0.8673	3		251.30	4
261	Acid Soluble Mn (%)	0524	0.0002	0.0000				1		261.99	0
261	Acid Soluble Mn (%)	0354	< 0.01					1		261.30	5
281	Acid Soluble Hg (ppm)	0524	0.0022	0.0013				2		281.99	0
281	Acid Soluble Hg (ppm)	0519	0.0100	0.0000				2		281.99	0
281	Acid Soluble Hg (ppm)	0515	0.0000	0.0000				2		281.30	4
289	Acid Soluble Mo (ppm)	0519	0.1350	0.0500				1		289.99	0
289	Acid Soluble Mo (ppm)	0524	0.0279	0.0557				1		289.30	4
291	Acid Soluble Ni (ppm)	0519	0.3350	0.0700				2		291.99	0
291	Acid Soluble Ni (ppm)	0515	0.9805	0.4270				2		291.33	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
291	Acid Soluble Ni (ppm)	0524	0.0065	0.0129				2		291.30	4
301	Acid Soluble Se (ppm)	0524	0.0537	0.0205	2.053	2.322	0.1226	4	-0.86	301.30	0
301	Acid Soluble Se (ppm)	0519	0.0800	0.0400	2.053	2.322	0.1226	4	-0.85	301.99	0
301	Acid Soluble Se (ppm)	0515	3.593	0.1380	2.053	2.322	0.1226	4	0.66	301.33	0
301	Acid Soluble Se (ppm)	0515	4.484	0.2920	2.053	2.322	0.1226	4	1.05	301.34	0
311	Sodium (%)	0354	0.0250	0.0100				1		311.99	0
321	Acid Soluble Zn (%)	0524	0.0003	0.0001				1		321.99	0
321	Acid Soluble Zn (%)	0354	< 0.01					1		321.30	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. Your offset values are higher (‡) or lower (†) than the Robust Analyte value ± Investigational Allowance. Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.