

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 210511

Gypsum 95

Statistical Summary

Analytes: 31

Labs Reporting: 71

Issue Date : 06/30/2021

Analyte Code	Analyte Sample # 210511	# 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 (%)	1		0.0008									
005	Urea N (%)	1		0.1003									
010	Total N (%)	6	4	0.0396	0.0348	0.0318	0.4900	0.0209	0.0130	65.50%	0.10	0.0038	6.72%
020	Total P2O5 (%)	7	5	0.0771	0.0451	0.0779		0.0152	0.0085	19.56%		0.0016	5.87%
041	Direct Available P2O5 (%)	4	3	0.0463	0.0363	0.0283	0.6700	0.0073	0.0053	25.84%	0.03	0.0053	6.84%
050	Soluble K2O (%)	12	9	0.1203	0.1154	0.0992	0.4100	0.0553	0.0230	55.69%	0.31	0.0030	5.66%
060	Water (Free) (%)	1		10.91									
101	Acid Soluble Ca (21%)	58	56	21.63	1.244	21.65	1.0000	1.287	0.2150	5.94%	3.00	0.3952	2.15%
121	Acid Soluble Mg (0.1%)	47	45	0.7366	0.1802	0.7518	0.2376	0.0613	0.0114	8.16%	0.60	0.0216	4.18%
131	Water Soluble Mg (%)	2	2	0.2435	0.1930								
143	Elemental S (%)	5	5	17.52	2.842	17.52		2.842	1.589	16.22%		0.2500	2.39%
145	Sulfate S, HCl soluble (%)	16	15	15.69	2.942	16.47		0.6284	0.2028	3.82%		0.1020	2.46%
147	Total S in Urea/Formulations (17%)	1		17.00									
148	Total S (17%)	44	42	16.10	2.017	16.49	1.0000	0.7422	0.1431	4.50%	1.73	0.3064	2.46%
149	S - HNO3 soluble (%)	4	4	15.13	2.607	15.13		2.607	1.629	17.23%		0.2416	2.57%
151	Acid Soluble As (ppm)	16	9	1.533	2.319	1.006		0.1278	0.0533	12.71%		0.0493	15.98%
165	Acid Soluble B (%)	9	5	1.623	4.861	2.918	0.4407	6.522	3.646	223.49%	34.48	0.2060	3.40%
181	Acid Soluble Cd (ppm)	17	5	0.6819	1.280	0.0302		0.0169	0.0095	56.01%		0.0039	22.00%
190	Water Soluble Cl (%)	1		0.1000									
191	Acid Soluble Cr (ppm)	17	15	8.198	4.484	6.671		2.401	0.7751	36.00%		0.4219	12.02%
202	Acid Soluble Co (ppm)	16	13	3.208	4.598	1.759	1.5278	0.6484	0.2248	36.85%	0.99	0.2409	14.69%
221	Acid Soluble Cu (%)	17	8	0.1304	0.5017	0.0005	0.0051	0.0008	0.0004	153.89%	0.37	0.0000	12.47%
241	Acid Soluble Fe (%)	13	12	0.2241	0.2332	0.1562	0.0206	0.0309	0.0111	19.77%	3.49	0.0233	5.29%
251	Acid Soluble Pb (ppm)	18	14	1.683	1.708	0.7683		0.3335	0.1114	43.41%		0.1424	16.64%
261	Acid Soluble Mn (%)	11	6	0.0086	0.0174	0.0030	0.0053	0.0001	0.0001	4.45%	0.06	0.0001	9.60%
281	Acid Soluble Hg (ppm)	10	2	2.308	6.922	11.00		15.55	13.75	141.37%		0.9003	11.15%
289	Acid Soluble Mo (ppm)	11	5	10.05	29.88	0.3341	1.1002	0.1029	0.0575	30.80%	0.22	0.0521	18.87%
291	Acid Soluble Ni (ppm)	19	14	4.010	3.496	2.725		0.8203	0.2740	30.11%		0.3963	13.76%
301	Acid Soluble Se (ppm)	11	6	0.9638	0.9357	0.9412		0.3736	0.1907	39.70%		0.2393	16.14%
311	Sodium (%)	6	5	0.0158	0.0078	0.0170	0.0067	0.0081	0.0045	47.72%	2.82	0.0047	7.38%
321	Acid Soluble Zn (%)	21	11	1.235	4.232	0.0036	0.0054	0.0051	0.0019	142.12%	2.21	0.0766	9.34%

The Analyte IA Ratio = 2.33 * Robust SD / 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

Analyte Code	Analyte Sample # 210511	# 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
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calculated using the Thompson Modification, Analyst, 2000, 125, 385-386.

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Analyte Proficiency From All Labs

Sample # 210511

Gypsum 95

Lab Values

Analytes: 31

Labs Reporting: 71

Issue Date : 06/30/2021

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 (%)	0553	< 0.0008					0		001.99	5
005	Urea N (%)	0524	0.1003	0.1394				1		005.99	0
010	Total N (%)	0568	0.0116	0.0101	0.0318	0.0209	0.0038	4	-0.83	010.12	0
010	Total N (%)	0354	0.0185	0.0010	0.0318	0.0209	0.0038	4	-0.54	010.60	0
010	Total N (%)	0389	0.0400	0.0000	0.0318	0.0209	0.0038	4	0.33	010.60	0
010	Total N (%)	0524	0.0573	0.0042	0.0318	0.0209	0.0038	4	1.04	010.99	0
010	Total N (%)	0527	< 0.01		0.0318	0.0209	0.0038	4		010.60	5
010	Total N (%)	0325	< 0.1		0.0318	0.0209	0.0038	4		010.60	5
020	Total P2O5 (%)	0423	0.0630	0.0040	0.0779	0.0152	0.0016	5	-0.86	020.50	0
020	Total P2O5 (%)	0515	0.0654	0.0021	0.0779	0.0152	0.0016	5	-0.72	020.99	0
020	Total P2O5 (%)	0524	0.0738	0.0009	0.0779	0.0152	0.0016	5	-0.24	020.50	0
020	Total P2O5 (%)	0389	0.0900	0.0000	0.0779	0.0152	0.0016	5	0.69	020.50	0
020	Total P2O5 (%)	0527	0.0976	0.0009	0.0779	0.0152	0.0016	5	1.12	020.50	0
020	Total P2O5 (%)	0516	0.1500	0.1000	0.0779	0.0152	0.0016	5	4.13	020.50	1
020	Total P2O5 (%)	0552	0.0000	0.0000	0.0779	0.0152	0.0016	5		020.50	4
041	Direct Available P2O5 (%)	0553	0.0205	0.0010	0.0283	0.0073	0.0053	3	-1.07	041.20	0
041	Direct Available P2O5 (%)	0354	0.0295	0.0050	0.0283	0.0073	0.0053	3	0.16	041.21	0
041	Direct Available P2O5 (%)	0568	0.0350	0.0100	0.0283	0.0073	0.0053	3	0.91	041.21	0
041	Direct Available P2O5 (%)	0325	< 0.1		0.0283	0.0073	0.0053	3		041.50	5
050	Soluble K2O (%)	0553	0.0285	0.0030	0.0992	0.0553	0.0030	9	-1.28	050.99	0
050	Soluble K2O (%)	0354	0.0365	0.0010	0.0992	0.0553	0.0030	9	-1.14	050.52	0
050	Soluble K2O (%)	0389	0.0560	0.0020	0.0992	0.0553	0.0030	9	-0.78	050.99	0
050	Soluble K2O (%)	0568	0.0900	0.0000	0.0992	0.0553	0.0030	9	-0.17	050.51	0
050	Soluble K2O (%)	0563	0.1175	0.0141	0.0992	0.0553	0.0030	9	0.33	050.99	0
050	Soluble K2O (%)	0524	0.1219	0.0020	0.0992	0.0553	0.0030	9	0.41	050.99	0
050	Soluble K2O (%)	0423	0.1360	0.0040	0.0992	0.0553	0.0030	9	0.67	050.52	0
050	Soluble K2O (%)	0527	0.1490	0.0011	0.0992	0.0553	0.0030	9	0.90	050.99	0
050	Soluble K2O (%)	0521	0.1579	0.0000	0.0992	0.0553	0.0030	9	1.06	050.99	0
050	Soluble K2O (%)	0516	0.4500	0.1000	0.0992	0.0553	0.0030	9	6.35	050.99	1
050	Soluble K2O (%)	0552	0.0000	0.0000	0.0992	0.0553	0.0030	9		050.99	4
050	Soluble K2O (%)	0325	< 0.1		0.0992	0.0553	0.0030	9		050.99	5
060	Water (Free) (%)	0513	10.91	0.0700				1		060.99	0
101	Acid Soluble Ca (21%)	0073	18.85†	0.8700	21.65	1.287	0.3952	56	-2.18	101.30	0
101	Acid Soluble Ca (21%)	0472	19.28†	0.3100	21.65	1.287	0.3952	56	-1.85	101.30	0
101	Acid Soluble Ca (21%)	0117	19.44†	2.433	21.65	1.287	0.3952	56	-1.72	101.33	0
101	Acid Soluble Ca (21%)	0506	19.65†	0.2900	21.65	1.287	0.3952	56	-1.56	101.99	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				
101	Acid Soluble Ca (21%)	0486	19.73†	0.6000	21.65	1.287	0.3952	56	-1.49	101.33	0
101	Acid Soluble Ca (21%)	0102	19.78†	0.0900	21.65	1.287	0.3952	56	-1.46	101.30	0
101	Acid Soluble Ca (21%)	0481	20.01†	0.7100	21.65	1.287	0.3952	56	-1.28	101.99	0
101	Acid Soluble Ca (21%)	0523	20.15†	0.5200	21.65	1.287	0.3952	56	-1.17	101.99	0
101	Acid Soluble Ca (21%)	0029	20.51†	0.0600	21.65	1.287	0.3952	56	-0.89	101.99	0
101	Acid Soluble Ca (21%)	0027	20.65†	0.2370	21.65	1.287	0.3952	56	-0.78	101.99	0
101	Acid Soluble Ca (21%)	0485	20.66	0.3300	21.65	1.287	0.3952	56	-0.78	101.00	0
101	Acid Soluble Ca (21%)	0533	20.73	0.0600	21.65	1.287	0.3952	56	-0.72	101.00	0
101	Acid Soluble Ca (21%)	0558	20.77	0.0200	21.65	1.287	0.3952	56	-0.69	101.99	0
101	Acid Soluble Ca (21%)	0255	20.79	0.1000	21.65	1.287	0.3952	56	-0.67	101.30	0
101	Acid Soluble Ca (21%)	0538	20.80	0.2000	21.65	1.287	0.3952	56	-0.66	101.00	0
101	Acid Soluble Ca (21%)	0535	20.85	0.1000	21.65	1.287	0.3952	56	-0.62	101.00	0
101	Acid Soluble Ca (21%)	0539	20.85	0.1000	21.65	1.287	0.3952	56	-0.62	101.00	0
101	Acid Soluble Ca (21%)	0106	20.95	0.0938	21.65	1.287	0.3952	56	-0.54	101.33	0
101	Acid Soluble Ca (21%)	0177	21.00	0.0843	21.65	1.287	0.3952	56	-0.51	101.33	0
101	Acid Soluble Ca (21%)	0444	21.18	1.270	21.65	1.287	0.3952	56	-0.37	101.30	0
101	Acid Soluble Ca (21%)	0292	21.28	0.0100	21.65	1.287	0.3952	56	-0.29	101.33	0
101	Acid Soluble Ca (21%)	0450	21.28	0.0600	21.65	1.287	0.3952	56	-0.29	101.99	0
101	Acid Soluble Ca (21%)	0200	21.48	0.0900	21.65	1.287	0.3952	56	-0.14	101.70	0
101	Acid Soluble Ca (21%)	0534	21.50	0.2000	21.65	1.287	0.3952	56	-0.12	101.00	0
101	Acid Soluble Ca (21%)	0451	21.56	0.3200	21.65	1.287	0.3952	56	-0.07	101.30	0
101	Acid Soluble Ca (21%)	0231	21.57	0.1000	21.65	1.287	0.3952	56	-0.06	101.30	0
101	Acid Soluble Ca (21%)	0544	21.60	0.0800	21.65	1.287	0.3952	56	-0.04	101.70	0
101	Acid Soluble Ca (21%)	0513	21.68	0.0600	21.65	1.287	0.3952	56	0.02	101.00	0
101	Acid Soluble Ca (21%)	0042	21.71	1.190	21.65	1.287	0.3952	56	0.04	101.99	0
101	Acid Soluble Ca (21%)	0234	21.75	0.0900	21.65	1.287	0.3952	56	0.07	101.30	0
101	Acid Soluble Ca (21%)	0043	21.83	1.220	21.65	1.287	0.3952	56	0.14	101.33	0
101	Acid Soluble Ca (21%)	0423	21.87	0.0600	21.65	1.287	0.3952	56	0.17	101.32	0
101	Acid Soluble Ca (21%)	0324	21.90	0.8000	21.65	1.287	0.3952	56	0.19	101.30	0
101	Acid Soluble Ca (21%)	0136	21.95	0.1000	21.65	1.287	0.3952	56	0.23	101.33	0
101	Acid Soluble Ca (21%)	0157	22.00	0.2000	21.65	1.287	0.3952	56	0.27	101.30	0
101	Acid Soluble Ca (21%)	0354	22.00	0.4000	21.65	1.287	0.3952	56	0.27	101.30	0
101	Acid Soluble Ca (21%)	0561	22.09	0.0100	21.65	1.287	0.3952	56	0.34	101.99	0
101	Acid Soluble Ca (21%)	0095	22.27	0.9100	21.65	1.287	0.3952	56	0.48	101.32	0
101	Acid Soluble Ca (21%)	0553	22.30	0.2000	21.65	1.287	0.3952	56	0.50	101.00	0
101	Acid Soluble Ca (21%)	0377	22.40	0.3600	21.65	1.287	0.3952	56	0.58	101.30	0
101	Acid Soluble Ca (21%)	0552	22.44	0.5700	21.65	1.287	0.3952	56	0.61	101.99	0
101	Acid Soluble Ca (21%)	0389	22.55	0.1000	21.65	1.287	0.3952	56	0.70	101.99	0
101	Acid Soluble Ca (21%)	0034	22.67‡	2.160	21.65	1.287	0.3952	56	0.79	101.33	0
101	Acid Soluble Ca (21%)	0049	22.68‡	0.7400	21.65	1.287	0.3952	56	0.80	101.30	0
101	Acid Soluble Ca (21%)	0231	22.70‡	0.0000	21.65	1.287	0.3952	56	0.81	101.99	0
101	Acid Soluble Ca (21%)	0405	22.70‡	0.0000	21.65	1.287	0.3952	56	0.81	101.99	0
101	Acid Soluble Ca (21%)	0521	22.79‡	0.0000	21.65	1.287	0.3952	56	0.88	101.99	0
101	Acid Soluble Ca (21%)	0055	22.81‡	0.7400	21.65	1.287	0.3952	56	0.90	101.33	0
101	Acid Soluble Ca (21%)	0547	22.90‡	0.0000	21.65	1.287	0.3952	56	0.97	101.99	0
101	Acid Soluble Ca (21%)	0157	22.95‡	0.1000	21.65	1.287	0.3952	56	1.01	101.00	0
101	Acid Soluble Ca (21%)	0433	23.42‡	0.2000	21.65	1.287	0.3952	56	1.37	101.30	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				
101	Acid Soluble Ca (21%)	0527	23.45‡	0.0722	21.65	1.287	0.3952	56	1.40	101.33	0
101	Acid Soluble Ca (21%)	0035	23.50‡	0.8000	21.65	1.287	0.3952	56	1.44	101.30	0
101	Acid Soluble Ca (21%)	0325	23.60‡	1.000	21.65	1.287	0.3952	56	1.51	101.30	0
101	Acid Soluble Ca (21%)	0169	24.35‡	0.0500	21.65	1.287	0.3952	56	2.09	101.33	0
101	Acid Soluble Ca (21%)	0394	24.44‡	0.6630	21.65	1.287	0.3952	56	2.16	101.33	0
101	Acid Soluble Ca (21%)	0040	20.20†	3.170	21.65	1.287	0.3952	56	-1.13	101.33	1
101	Acid Soluble Ca (21%)	0568	21.85	4.100	21.65	1.287	0.3952	56	0.15	101.30	1
121	Acid Soluble Mg (0.1%)	0309	0.07500†	0.0100	0.7518	0.0613	0.0216	45	-11.03	121.00	0
121	Acid Soluble Mg (0.1%)	0292	0.2200†	0.0000	0.7518	0.0613	0.0216	45	-8.67	121.32	0
121	Acid Soluble Mg (0.1%)	0042	0.4300†	0.0200	0.7518	0.0613	0.0216	45	-5.25	121.99	0
121	Acid Soluble Mg (0.1%)	0523	0.6600	0.0200	0.7518	0.0613	0.0216	45	-1.50	121.99	0
121	Acid Soluble Mg (0.1%)	0561	0.6750	0.0100	0.7518	0.0613	0.0216	45	-1.25	121.33	0
121	Acid Soluble Mg (0.1%)	0481	0.6750	0.0100	0.7518	0.0613	0.0216	45	-1.25	121.99	0
121	Acid Soluble Mg (0.1%)	0516	0.6800	0.0200	0.7518	0.0613	0.0216	45	-1.17	121.99	0
121	Acid Soluble Mg (0.1%)	0515	0.6858	0.0245	0.7518	0.0613	0.0216	45	-1.08	121.99	0
121	Acid Soluble Mg (0.1%)	0055	0.6950	0.0500	0.7518	0.0613	0.0216	45	-0.93	121.33	0
121	Acid Soluble Mg (0.1%)	0377	0.7000	0.0400	0.7518	0.0613	0.0216	45	-0.84	121.30	0
121	Acid Soluble Mg (0.1%)	0506	0.7050	0.0100	0.7518	0.0613	0.0216	45	-0.76	121.99	0
121	Acid Soluble Mg (0.1%)	0405	0.7200	0.0000	0.7518	0.0613	0.0216	45	-0.52	121.99	0
121	Acid Soluble Mg (0.1%)	0568	0.7310	0.0120	0.7518	0.0613	0.0216	45	-0.34	121.30	0
121	Acid Soluble Mg (0.1%)	0177	0.7311	0.0233	0.7518	0.0613	0.0216	45	-0.34	121.33	0
121	Acid Soluble Mg (0.1%)	0521	0.7318	0.0000	0.7518	0.0613	0.0216	45	-0.33	121.99	0
121	Acid Soluble Mg (0.1%)	0524	0.7329	0.0244	0.7518	0.0613	0.0216	45	-0.31	121.99	0
121	Acid Soluble Mg (0.1%)	0106	0.7335	0.0033	0.7518	0.0613	0.0216	45	-0.30	121.33	0
121	Acid Soluble Mg (0.1%)	0035	0.7400	0.1080	0.7518	0.0613	0.0216	45	-0.19	121.30	0
121	Acid Soluble Mg (0.1%)	0486	0.7400	0.0000	0.7518	0.0613	0.0216	45	-0.19	121.33	0
121	Acid Soluble Mg (0.1%)	0433	0.7550	0.0100	0.7518	0.0613	0.0216	45	0.05	121.30	0
121	Acid Soluble Mg (0.1%)	0136	0.7550	0.0100	0.7518	0.0613	0.0216	45	0.05	121.33	0
121	Acid Soluble Mg (0.1%)	0558	0.7550	0.0100	0.7518	0.0613	0.0216	45	0.05	121.99	0
121	Acid Soluble Mg (0.1%)	0423	0.7580	0.0040	0.7518	0.0613	0.0216	45	0.10	121.32	0
121	Acid Soluble Mg (0.1%)	0049	0.7600	0.0200	0.7518	0.0613	0.0216	45	0.13	121.30	0
121	Acid Soluble Mg (0.1%)	0389	0.7615	0.0030	0.7518	0.0613	0.0216	45	0.16	121.99	0
121	Acid Soluble Mg (0.1%)	0095	0.7650	0.0100	0.7518	0.0613	0.0216	45	0.22	121.32	0
121	Acid Soluble Mg (0.1%)	0451	0.7661	0.0342	0.7518	0.0613	0.0216	45	0.23	121.30	0
121	Acid Soluble Mg (0.1%)	0255	0.7665	0.0070	0.7518	0.0613	0.0216	45	0.24	121.30	0
121	Acid Soluble Mg (0.1%)	0231	0.7700	0.0200	0.7518	0.0613	0.0216	45	0.30	121.30	0
121	Acid Soluble Mg (0.1%)	0354	0.7700	0.0400	0.7518	0.0613	0.0216	45	0.30	121.30	0
121	Acid Soluble Mg (0.1%)	0043	0.7700	0.0200	0.7518	0.0613	0.0216	45	0.30	121.33	0
121	Acid Soluble Mg (0.1%)	0394	0.7752	0.0243	0.7518	0.0613	0.0216	45	0.38	121.33	0
121	Acid Soluble Mg (0.1%)	0117	0.7756	0.0157	0.7518	0.0613	0.0216	45	0.39	121.33	0
121	Acid Soluble Mg (0.1%)	0234	0.7812	0.0094	0.7518	0.0613	0.0216	45	0.48	121.30	0
121	Acid Soluble Mg (0.1%)	0553	0.7875	0.0250	0.7518	0.0613	0.0216	45	0.58	121.00	0
121	Acid Soluble Mg (0.1%)	0324	0.7950	0.0900	0.7518	0.0613	0.0216	45	0.70	121.30	0
121	Acid Soluble Mg (0.1%)	0552	0.7950	0.0500	0.7518	0.0613	0.0216	45	0.70	121.99	0
121	Acid Soluble Mg (0.1%)	0534	0.7950	0.0100	0.7518	0.0613	0.0216	45	0.70	121.00	0
121	Acid Soluble Mg (0.1%)	0547	0.8100	0.0200	0.7518	0.0613	0.0216	45	0.95	121.99	0
121	Acid Soluble Mg (0.1%)	0472	0.8300	0.0000	0.7518	0.0613	0.0216	45	1.28	121.30	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				
121	Acid Soluble Mg (0.1%)	0563	0.8425	0.0234	0.7518	0.0613	0.0216	45	1.48	121.33	0
121	Acid Soluble Mg (0.1%)	0527	0.8780	0.0011	0.7518	0.0613	0.0216	45	2.06	121.33	0
121	Acid Soluble Mg (0.1%)	0102	0.8800	0.0400	0.7518	0.0613	0.0216	45	2.09	121.30	0
121	Acid Soluble Mg (0.1%)	0444	1.025‡	0.0100	0.7518	0.0613	0.0216	45	4.45	121.30	0
121	Acid Soluble Mg (0.1%)	0538	1.400‡	0.0800	0.7518	0.0613	0.0216	45	10.57	121.00	0
121	Acid Soluble Mg (0.1%)	0485	0.7380	0.1180	0.7518	0.0613	0.0216	45	-0.22	121.00	1
121	Acid Soluble Mg (0.1%)	0450	< 0.5		0.7518	0.0613	0.0216	45		121.99	5
131	Water Soluble Mg (%)	0027	0.1070	0.0060				2		131.30	0
131	Water Soluble Mg (%)	0556	0.3800	0.0200				2		131.00	0
143	Elemental S (%)	0472	13.43	0.2200	17.52	2.842	0.2500	5	-1.44	143.99	0
143	Elemental S (%)	0521	16.80	0.0000	17.52	2.842	0.2500	5	-0.25	143.99	0
143	Elemental S (%)	0255	16.98	0.2300	17.52	2.842	0.2500	5	-0.19	143.99	0
143	Elemental S (%)	0389	19.75	0.7000	17.52	2.842	0.2500	5	0.78	143.99	0
143	Elemental S (%)	0325	20.65	0.1000	17.52	2.842	0.2500	5	1.10	143.99	0
145	Sulfate S, HCl soluble (%)	0486	14.66	0.1400	16.47	0.6284	0.1020	15	-2.88	145.99	0
145	Sulfate S, HCl soluble (%)	0106	15.38	0.2300	16.47	0.6284	0.1020	15	-1.74	145.00	0
145	Sulfate S, HCl soluble (%)	0481	15.77	0.0200	16.47	0.6284	0.1020	15	-1.11	145.00	0
145	Sulfate S, HCl soluble (%)	0027	16.10	0.1900	16.47	0.6284	0.1020	15	-0.60	145.00	0
145	Sulfate S, HCl soluble (%)	0485	16.33	0.0100	16.47	0.6284	0.1020	15	-0.23	145.00	0
145	Sulfate S, HCl soluble (%)	0544	16.35	0.0400	16.47	0.6284	0.1020	15	-0.19	145.00	0
145	Sulfate S, HCl soluble (%)	0029	16.41	0.0400	16.47	0.6284	0.1020	15	-0.09	145.00	0
145	Sulfate S, HCl soluble (%)	0136	16.50	0.0000	16.47	0.6284	0.1020	15	0.05	145.99	0
145	Sulfate S, HCl soluble (%)	0564	16.59	0.0200	16.47	0.6284	0.1020	15	0.19	145.00	0
145	Sulfate S, HCl soluble (%)	0569	16.78	0.1500	16.47	0.6284	0.1020	15	0.49	145.99	0
145	Sulfate S, HCl soluble (%)	0553	16.85	0.1000	16.47	0.6284	0.1020	15	0.61	145.99	0
145	Sulfate S, HCl soluble (%)	0549	16.93	0.1600	16.47	0.6284	0.1020	15	0.73	145.00	0
145	Sulfate S, HCl soluble (%)	0538	17.00	0.0700	16.47	0.6284	0.1020	15	0.84	145.00	0
145	Sulfate S, HCl soluble (%)	0561	17.05	0.0800	16.47	0.6284	0.1020	15	0.92	145.00	0
145	Sulfate S, HCl soluble (%)	0200	17.35	0.2800	16.47	0.6284	0.1020	15	1.40	145.00	0
145	Sulfate S, HCl soluble (%)	0556	4.950	0.1000	16.47	0.6284	0.1020	15	-18.33	145.00	2
147	Total S in Urea/Formulations (17%)	0538	17.00‡	0.1000				1		147.00	0
148	Total S (17%)	0515	12.59†	1.540	16.49	0.7422	0.3064	42	-5.25	148.99	0
148	Total S (17%)	0117	13.21†	1.744	16.49	0.7422	0.3064	42	-4.42	148.07	0
148	Total S (17%)	0523	14.29†	0.6800	16.49	0.7422	0.3064	42	-2.96	148.99	0
148	Total S (17%)	0102	14.70†	0.6000	16.49	0.7422	0.3064	42	-2.41	148.07	0
148	Total S (17%)	0506	15.45†	0.7000	16.49	0.7422	0.3064	42	-1.40	148.99	0
148	Total S (17%)	0049	15.48†	0.1200	16.49	0.7422	0.3064	42	-1.36	148.00	0
148	Total S (17%)	0450	15.66	0.1800	16.49	0.7422	0.3064	42	-1.12	148.99	0
148	Total S (17%)	0233	15.84	0.0200	16.49	0.7422	0.3064	42	-0.88	148.07	0
148	Total S (17%)	0040	15.85	0.3000	16.49	0.7422	0.3064	42	-0.86	148.07	0
148	Total S (17%)	0231	16.00	0.0000	16.49	0.7422	0.3064	42	-0.66	148.01	0
148	Total S (17%)	0177	16.02	0.1447	16.49	0.7422	0.3064	42	-0.63	148.07	0
148	Total S (17%)	0516	16.10	0.0000	16.49	0.7422	0.3064	42	-0.53	148.99	0
148	Total S (17%)	0035	16.15	0.1000	16.49	0.7422	0.3064	42	-0.46	148.99	0
148	Total S (17%)	0547	16.20	0.0000	16.49	0.7422	0.3064	42	-0.39	148.99	0
148	Total S (17%)	0354	16.25	0.1000	16.49	0.7422	0.3064	42	-0.32	148.99	0
148	Total S (17%)	0513	16.36	0.0800	16.49	0.7422	0.3064	42	-0.17	148.01	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				
148	Total S (17%)	0114	16.40	1.075	16.49	0.7422	0.3064	42	-0.12	148.00	0
148	Total S (17%)	0534	16.41	0.0100	16.49	0.7422	0.3064	42	-0.11	148.01	0
148	Total S (17%)	0029	16.41	0.0400	16.49	0.7422	0.3064	42	-0.11	148.01	0
148	Total S (17%)	0157	16.45	0.3000	16.49	0.7422	0.3064	42	-0.05	148.01	0
148	Total S (17%)	0444	16.51	0.7700	16.49	0.7422	0.3064	42	0.02	148.01	0
148	Total S (17%)	0444	16.51	0.0800	16.49	0.7422	0.3064	42	0.03	148.07	0
148	Total S (17%)	0485	16.55	0.3000	16.49	0.7422	0.3064	42	0.08	148.01	0
148	Total S (17%)	0073	16.57	0.5600	16.49	0.7422	0.3064	42	0.11	148.01	0
148	Total S (17%)	0564	16.73	0.0500	16.49	0.7422	0.3064	42	0.32	148.01	0
148	Total S (17%)	0324	16.75	0.5000	16.49	0.7422	0.3064	42	0.35	148.01	0
148	Total S (17%)	0043	16.77	1.360	16.49	0.7422	0.3064	42	0.38	148.07	0
148	Total S (17%)	0558	16.84	0.0800	16.49	0.7422	0.3064	42	0.47	148.99	0
148	Total S (17%)	0220	16.99	0.0400	16.49	0.7422	0.3064	42	0.67	148.99	0
148	Total S (17%)	0220	17.03	0.0400	16.49	0.7422	0.3064	42	0.73	148.01	0
148	Total S (17%)	0549	17.05	0.1300	16.49	0.7422	0.3064	42	0.75	148.01	0
148	Total S (17%)	0569	17.05	0.1300	16.49	0.7422	0.3064	42	0.75	148.01	0
148	Total S (17%)	0535	17.05	0.1000	16.49	0.7422	0.3064	42	0.75	148.99	0
148	Total S (17%)	0539	17.05	0.1000	16.49	0.7422	0.3064	42	0.75	148.99	0
148	Total S (17%)	0533	17.10	0.0500	16.49	0.7422	0.3064	42	0.82	148.99	0
148	Total S (17%)	0292	17.12	0.0100	16.49	0.7422	0.3064	42	0.84	148.07	0
148	Total S (17%)	0394	17.13	0.0720	16.49	0.7422	0.3064	42	0.86	148.07	0
148	Total S (17%)	0055	17.18	0.0100	16.49	0.7422	0.3064	42	0.92	148.01	0
148	Total S (17%)	0377	17.34	0.3700	16.49	0.7422	0.3064	42	1.14	148.99	0
148	Total S (17%)	0136	17.55‡	0.1000	16.49	0.7422	0.3064	42	1.43	148.00	0
148	Total S (17%)	0527	17.81‡	0.0355	16.49	0.7422	0.3064	42	1.77	148.07	0
148	Total S (17%)	0169	17.98‡	0.2500	16.49	0.7422	0.3064	42	2.00	148.07	0
148	Total S (17%)	0451	17.10	1.800	16.49	0.7422	0.3064	42	0.82	148.00	1
148	Total S (17%)	0556	4.950†	0.1000	16.49	0.7422	0.3064	42	-15.55	148.01	2
149	S - HNO3 soluble (%)	0524	11.34	0.4663	15.13	2.607	0.2416	4	-1.45	149.04	0
149	S - HNO3 soluble (%)	0423	15.85	0.1000	15.13	2.607	0.2416	4	0.28	149.04	0
149	S - HNO3 soluble (%)	0231	16.02	0.2000	15.13	2.607	0.2416	4	0.34	149.04	0
149	S - HNO3 soluble (%)	0518	17.30	0.2000	15.13	2.607	0.2416	4	0.83	149.03	0
151	Acid Soluble As (ppm)	0481	0.7700	0.0200	1.006	0.1278	0.0493	9	-1.85	151.99	0
151	Acid Soluble As (ppm)	0572	0.8750	0.0300	1.006	0.1278	0.0493	9	-1.03	151.99	0
151	Acid Soluble As (ppm)	0450	0.9500	0.1000	1.006	0.1278	0.0493	9	-0.44	151.30	0
151	Acid Soluble As (ppm)	0523	1.020	0.0614	1.006	0.1278	0.0493	9	0.11	151.30	0
151	Acid Soluble As (ppm)	0524	1.032	0.0035	1.006	0.1278	0.0493	9	0.21	151.30	0
151	Acid Soluble As (ppm)	0506	1.040	0.0800	1.006	0.1278	0.0493	9	0.27	151.99	0
151	Acid Soluble As (ppm)	0534	1.050	0.0400	1.006	0.1278	0.0493	9	0.34	151.00	0
151	Acid Soluble As (ppm)	0136	1.075	0.0500	1.006	0.1278	0.0493	9	0.54	151.33	0
151	Acid Soluble As (ppm)	0563	1.240	0.0585	1.006	0.1278	0.0493	9	1.83	151.33	0
151	Acid Soluble As (ppm)	0255	2.460	1.174	1.006	0.1278	0.0493	9	11.37	151.30	1
151	Acid Soluble As (ppm)	0515	0.0215	0.0430	1.006	0.1278	0.0493	9		151.34	4
151	Acid Soluble As (ppm)	0527	< 0.001		1.006	0.1278	0.0493	9		151.33	5
151	Acid Soluble As (ppm)	0220	< 1		1.006	0.1278	0.0493	9		151.32	5
151	Acid Soluble As (ppm)	0220	< 1		1.006	0.1278	0.0493	9		151.99	5
151	Acid Soluble As (ppm)	0405	< 1		1.006	0.1278	0.0493	9		151.99	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				
151	Acid Soluble As (ppm)	0117	< 10		1.006	0.1278	0.0493	9		151.33	5
165	Acid Soluble B (%)	0389	0.0005	0.0001	2.918	6.522	0.2060	5	-0.39	165.30	0
165	Acid Soluble B (%)	0524	0.0012	0.0000	2.918	6.522	0.2060	5	-0.39	165.99	0
165	Acid Soluble B (%)	0553	0.0020	0.0000	2.918	6.522	0.2060	5	-0.39	165.00	0
165	Acid Soluble B (%)	0563	0.0023	0.0001	2.918	6.522	0.2060	5	-0.39	165.99	0
165	Acid Soluble B (%)	0423	14.59	1.030	2.918	6.522	0.2060	5	1.56	165.99	0
165	Acid Soluble B (%)	0515	0.0000	0.0000	2.918	6.522	0.2060	5		165.99	4
165	Acid Soluble B (%)	0552	0.0000	0.0000	2.918	6.522	0.2060	5		165.99	4
165	Acid Soluble B (%)	0354	< 0.01		2.918	6.522	0.2060	5		165.30	5
165	Acid Soluble B (%)	0527	< 0.01		2.918	6.522	0.2060	5		165.99	5
181	Acid Soluble Cd (ppm)	0405	0.0150	0.0100	0.0302	0.0169	0.0039	5	-0.90	181.99	0
181	Acid Soluble Cd (ppm)	0523	0.0169	0.0069	0.0302	0.0169	0.0039	5	-0.79	181.30	0
181	Acid Soluble Cd (ppm)	0389	0.0300	0.0000	0.0302	0.0169	0.0039	5	-0.01	181.30	0
181	Acid Soluble Cd (ppm)	0563	0.0319	0.0023	0.0302	0.0169	0.0039	5	0.10	181.33	0
181	Acid Soluble Cd (ppm)	0524	0.0573	0.0001	0.0302	0.0169	0.0039	5	1.60	181.30	0
181	Acid Soluble Cd (ppm)	0255	2.511	0.8720	0.0302	0.0169	0.0039	5	146.71	181.30	1
181	Acid Soluble Cd (ppm)	0515	0.0000	0.0000	0.0302	0.0169	0.0039	5		181.34	4
181	Acid Soluble Cd (ppm)	0527	< 0.001		0.0302	0.0169	0.0039	5		181.33	5
181	Acid Soluble Cd (ppm)	0220	< 0.1		0.0302	0.0169	0.0039	5		181.32	5
181	Acid Soluble Cd (ppm)	0220	< 0.1		0.0302	0.0169	0.0039	5		181.99	5
181	Acid Soluble Cd (ppm)	0572	< 0.23		0.0302	0.0169	0.0039	5		181.99	5
181	Acid Soluble Cd (ppm)	0534	< 0.5		0.0302	0.0169	0.0039	5		181.00	5
181	Acid Soluble Cd (ppm)	0450	< 0.5		0.0302	0.0169	0.0039	5		181.30	5
181	Acid Soluble Cd (ppm)	0481	< 0.5		0.0302	0.0169	0.0039	5		181.99	5
181	Acid Soluble Cd (ppm)	0136	< 1		0.0302	0.0169	0.0039	5		181.33	5
181	Acid Soluble Cd (ppm)	0553	< 1		0.0302	0.0169	0.0039	5		181.99	5
181	Acid Soluble Cd (ppm)	0117	< 5		0.0302	0.0169	0.0039	5		181.33	5
190	Water Soluble Cl (%)	0553	< 0.1					0		190.00	5
191	Acid Soluble Cr (ppm)	0389	3.100	0.0000	6.671	2.401	0.4219	15	-1.49	191.30	0
191	Acid Soluble Cr (ppm)	0444	3.615	0.1900	6.671	2.401	0.4219	15	-1.27	191.30	0
191	Acid Soluble Cr (ppm)	0524	5.108	0.2938	6.671	2.401	0.4219	15	-0.65	191.30	0
191	Acid Soluble Cr (ppm)	0136	5.400	0.8000	6.671	2.401	0.4219	15	-0.53	191.33	0
191	Acid Soluble Cr (ppm)	0572	5.905	0.4500	6.671	2.401	0.4219	15	-0.32	191.99	0
191	Acid Soluble Cr (ppm)	0450	6.000	0.0000	6.671	2.401	0.4219	15	-0.28	191.30	0
191	Acid Soluble Cr (ppm)	0035	6.210	0.2600	6.671	2.401	0.4219	15	-0.19	191.30	0
191	Acid Soluble Cr (ppm)	0405	6.500	1.000	6.671	2.401	0.4219	15	-0.07	191.99	0
191	Acid Soluble Cr (ppm)	0220	6.600	0.6000	6.671	2.401	0.4219	15	-0.03	191.32	0
191	Acid Soluble Cr (ppm)	0563	7.002	0.3574	6.671	2.401	0.4219	15	0.14	191.33	0
191	Acid Soluble Cr (ppm)	0220	7.050	0.1000	6.671	2.401	0.4219	15	0.16	191.99	0
191	Acid Soluble Cr (ppm)	0394	7.431	0.2410	6.671	2.401	0.4219	15	0.32	191.33	0
191	Acid Soluble Cr (ppm)	0527	9.599	0.1693	6.671	2.401	0.4219	15	1.22	191.33	0
191	Acid Soluble Cr (ppm)	0523	10.75	1.267	6.671	2.401	0.4219	15	1.70	191.30	0
191	Acid Soluble Cr (ppm)	0506	12.80	0.6000	6.671	2.401	0.4219	15	2.55	191.99	0
191	Acid Soluble Cr (ppm)	0515	16.30	2.101	6.671	2.401	0.4219	15	4.01	191.34	1
191	Acid Soluble Cr (ppm)	0481	< 20		6.671	2.401	0.4219	15		191.99	5
202	Acid Soluble Co (ppm)	0389	0.6500	0.1000	1.759	0.6484	0.2409	13	-1.71	202.30	0
202	Acid Soluble Co (ppm)	0255	1.254	0.5310	1.759	0.6484	0.2409	13	-0.78	202.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
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202	Acid Soluble Co (ppm)	0220	1.300	0.0000	1.759	0.6484	0.2409	13	-0.71	202.32	0
202	Acid Soluble Co (ppm)	0423	1.395	0.1700	1.759	0.6484	0.2409	13	-0.56	202.32	0
202	Acid Soluble Co (ppm)	0220	1.450	0.1000	1.759	0.6484	0.2409	13	-0.48	202.99	0
202	Acid Soluble Co (ppm)	0515	1.531	1.300	1.759	0.6484	0.2409	13	-0.35	202.34	0
202	Acid Soluble Co (ppm)	0527	1.545	0.0114	1.759	0.6484	0.2409	13	-0.33	202.33	0
202	Acid Soluble Co (ppm)	0572	1.850	0.0400	1.759	0.6484	0.2409	13	0.14	202.99	0
202	Acid Soluble Co (ppm)	0563	1.878	0.2692	1.759	0.6484	0.2409	13	0.18	202.33	0
202	Acid Soluble Co (ppm)	0524	2.252	0.1591	1.759	0.6484	0.2409	13	0.76	202.30	0
202	Acid Soluble Co (ppm)	0405	2.350	0.1000	1.759	0.6484	0.2409	13	0.91	202.99	0
202	Acid Soluble Co (ppm)	0450	2.550	0.1000	1.759	0.6484	0.2409	13	1.22	202.30	0
202	Acid Soluble Co (ppm)	0553	2.775	0.2500	1.759	0.6484	0.2409	13	1.57	202.99	0
202	Acid Soluble Co (ppm)	0523	3.548	2.302	1.759	0.6484	0.2409	13	2.76	202.30	1
202	Acid Soluble Co (ppm)	0136	< 5		1.759	0.6484	0.2409	13		202.33	5
202	Acid Soluble Co (ppm)	0481	< 20		1.759	0.6484	0.2409	13		202.99	5
221	Acid Soluble Cu (%)	0527	0.0001	0.0000	0.0005	0.0008	0.0000	8	-0.53	221.33	0
221	Acid Soluble Cu (%)	0563	0.0001	0.0000	0.0005	0.0008	0.0000	8	-0.53	221.33	0
221	Acid Soluble Cu (%)	0405	0.0001	0.0000	0.0005	0.0008	0.0000	8	-0.53	221.99	0
221	Acid Soluble Cu (%)	0572	0.0001	0.0000	0.0005	0.0008	0.0000	8	-0.53	221.99	0
221	Acid Soluble Cu (%)	0394	0.0002	0.0001	0.0005	0.0008	0.0000	8	-0.46	221.33	0
221	Acid Soluble Cu (%)	0524	0.0003	0.0000	0.0005	0.0008	0.0000	8	-0.28	221.99	0
221	Acid Soluble Cu (%)	0515	0.0016	0.0002	0.0005	0.0008	0.0000	8	1.34	221.99	0
221	Acid Soluble Cu (%)	0552	0.0100	0.0000	0.0005	0.0008	0.0000	8	11.80	221.30	0
221	Acid Soluble Cu (%)	0444	2.075	0.5100	0.0005	0.0008	0.0000	8	2581.72	221.30	2
221	Acid Soluble Cu (%)	0255	0.0000	0.0000	0.0005	0.0008	0.0000	8		221.30	4
221	Acid Soluble Cu (%)	0106	0.0003	0.0005	0.0005	0.0008	0.0000	8		221.33	4
221	Acid Soluble Cu (%)	0481	< 0.001		0.0005	0.0008	0.0000	8		221.99	5
221	Acid Soluble Cu (%)	0136	< 0.0025		0.0005	0.0008	0.0000	8		221.33	5
221	Acid Soluble Cu (%)	0553	< 0.005		0.0005	0.0008	0.0000	8		221.00	5
221	Acid Soluble Cu (%)	0102	< 0.01		0.0005	0.0008	0.0000	8		221.30	5
221	Acid Soluble Cu (%)	0354	< 0.01		0.0005	0.0008	0.0000	8		221.30	5
221	Acid Soluble Cu (%)	0389	< 0.1		0.0005	0.0008	0.0000	8		221.99	5
241	Acid Soluble Fe (%)	0553	0.0835	0.0010	0.1562	0.0309	0.0233	12	-2.35	241.00	0
241	Acid Soluble Fe (%)	0035	0.1170	0.0000	0.1562	0.0309	0.0233	12	-1.27	241.30	0
241	Acid Soluble Fe (%)	0389	0.1275	0.0010	0.1562	0.0309	0.0233	12	-0.93	241.99	0
241	Acid Soluble Fe (%)	0524	0.1507	0.0020	0.1562	0.0309	0.0233	12	-0.18	241.99	0
241	Acid Soluble Fe (%)	0538	0.1600	0.0200	0.1562	0.0309	0.0233	12	0.12	241.00	0
241	Acid Soluble Fe (%)	0563	0.1608	0.0025	0.1562	0.0309	0.0233	12	0.15	241.33	0
241	Acid Soluble Fe (%)	0535	0.1615	0.0010	0.1562	0.0309	0.0233	12	0.17	241.00	0
241	Acid Soluble Fe (%)	0539	0.1617	0.0010	0.1562	0.0309	0.0233	12	0.18	241.00	0
241	Acid Soluble Fe (%)	0354	0.1650	0.0100	0.1562	0.0309	0.0233	12	0.29	241.30	0
241	Acid Soluble Fe (%)	0423	0.1665	0.0010	0.1562	0.0309	0.0233	12	0.33	241.32	0
241	Acid Soluble Fe (%)	0527	0.1910	0.0022	0.1562	0.0309	0.0233	12	1.13	241.33	0
241	Acid Soluble Fe (%)	0515	0.2837	0.2373	0.1562	0.0309	0.0233	12	4.13	241.99	0
241	Acid Soluble Fe (%)	0552	0.9850	1.570	0.1562	0.0309	0.0233	12	26.84	241.30	1
251	Acid Soluble Pb (ppm)	0389	0.2000	0.0000	0.7683	0.3335	0.1424	14	-1.70	251.30	0
251	Acid Soluble Pb (ppm)	0255	0.3905	0.0950	0.7683	0.3335	0.1424	14	-1.13	251.30	0
251	Acid Soluble Pb (ppm)	0394	0.3935	0.0210	0.7683	0.3335	0.1424	14	-1.12	251.33	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				
251	Acid Soluble Pb (ppm)	0481	0.6450	0.0500	0.7683	0.3335	0.1424	14	-0.37	251.99	0
251	Acid Soluble Pb (ppm)	0220	0.6500	0.1000	0.7683	0.3335	0.1424	14	-0.35	251.32	0
251	Acid Soluble Pb (ppm)	0572	0.7650	0.0300	0.7683	0.3335	0.1424	14	-0.01	251.99	0
251	Acid Soluble Pb (ppm)	0563	0.7684	0.0320	0.7683	0.3335	0.1424	14	0.00	251.33	0
251	Acid Soluble Pb (ppm)	0405	0.8000	0.0000	0.7683	0.3335	0.1424	14	0.10	251.99	0
251	Acid Soluble Pb (ppm)	0527	0.8420	0.0027	0.7683	0.3335	0.1424	14	0.22	251.33	0
251	Acid Soluble Pb (ppm)	0220	0.8500	0.3000	0.7683	0.3335	0.1424	14	0.24	251.99	0
251	Acid Soluble Pb (ppm)	0524	0.9219	0.1478	0.7683	0.3335	0.1424	14	0.46	251.30	0
251	Acid Soluble Pb (ppm)	0523	0.9249	0.0148	0.7683	0.3335	0.1424	14	0.47	251.30	0
251	Acid Soluble Pb (ppm)	0506	1.845	0.4900	0.7683	0.3335	0.1424	14	3.23	251.99	0
251	Acid Soluble Pb (ppm)	0553	5.095	0.7100	0.7683	0.3335	0.1424	14	12.97	251.99	0
251	Acid Soluble Pb (ppm)	0515	5.208	1.701	0.7683	0.3335	0.1424	14	13.31	251.34	1
251	Acid Soluble Pb (ppm)	0534	< 2		0.7683	0.3335	0.1424	14		251.00	5
251	Acid Soluble Pb (ppm)	0136	< 3		0.7683	0.3335	0.1424	14		251.33	5
251	Acid Soluble Pb (ppm)	0117	< 5		0.7683	0.3335	0.1424	14		251.33	5
261	Acid Soluble Mn (%)	0389	0.0026	0.0000	0.0030	0.0001	0.0001	6	-2.52	261.99	0
261	Acid Soluble Mn (%)	0524	0.0029	0.0000	0.0030	0.0001	0.0001	6	-0.50	261.99	0
261	Acid Soluble Mn (%)	0035	0.0030	0.0001	0.0030	0.0001	0.0001	6	-0.17	261.30	0
261	Acid Soluble Mn (%)	0423	0.0030	0.0000	0.0030	0.0001	0.0001	6	0.17	261.34	0
261	Acid Soluble Mn (%)	0563	0.0031	0.0001	0.0030	0.0001	0.0001	6	0.50	261.35	0
261	Acid Soluble Mn (%)	0527	0.0034	0.0001	0.0030	0.0001	0.0001	6	2.52	261.35	0
261	Acid Soluble Mn (%)	0538	0.0605	0.0050	0.0030	0.0001	0.0001	6	386.97	261.12	1
261	Acid Soluble Mn (%)	0552	0.0000	0.0000	0.0030	0.0001	0.0001	6		261.32	4
261	Acid Soluble Mn (%)	0515	0.0016	0.0032	0.0030	0.0001	0.0001	6		261.99	4
261	Acid Soluble Mn (%)	0553	< 0.005		0.0030	0.0001	0.0001	6		261.11	5
261	Acid Soluble Mn (%)	0354	< 0.01		0.0030	0.0001	0.0001	6		261.30	5
281	Acid Soluble Hg (ppm)	0524	0.0037	0.0006				2		281.99	0
281	Acid Soluble Hg (ppm)	0035	22.00	1.800				2		281.99	0
281	Acid Soluble Hg (ppm)	0515	0.0000	0.0000				2		281.30	4
281	Acid Soluble Hg (ppm)	0527	< 0.001					2		281.30	5
281	Acid Soluble Hg (ppm)	0563	< 0.01					2		281.30	5
281	Acid Soluble Hg (ppm)	0220	< 0.01					2		281.99	5
281	Acid Soluble Hg (ppm)	0405	< 0.01					2		281.99	5
281	Acid Soluble Hg (ppm)	0534	< 0.05					2		281.00	5
281	Acid Soluble Hg (ppm)	0450	< 0.5					2		281.30	5
281	Acid Soluble Hg (ppm)	0481	< 0.5					2		281.99	5
289	Acid Soluble Mo (ppm)	0563	0.2275	0.0156	0.3341	0.1029	0.0521	5	-0.90	289.33	0
289	Acid Soluble Mo (ppm)	0524	0.2829	0.0647	0.3341	0.1029	0.0521	5	-0.43	289.30	0
289	Acid Soluble Mo (ppm)	0405	0.3100	0.0800	0.3341	0.1029	0.0521	5	-0.20	289.99	0
289	Acid Soluble Mo (ppm)	0220	0.3500	0.1000	0.3341	0.1029	0.0521	5	0.14	289.99	0
289	Acid Soluble Mo (ppm)	0220	0.5000	0.0000	0.3341	0.1029	0.0521	5	1.41	289.32	0
289	Acid Soluble Mo (ppm)	0515	3.363	2.796	0.3341	0.1029	0.0521	5	25.70	289.34	1
289	Acid Soluble Mo (ppm)	0255	0.0000	0.0000	0.3341	0.1029	0.0521	5		289.30	4
289	Acid Soluble Mo (ppm)	0106	0.5000	1.000	0.3341	0.1029	0.0521	5		289.33	4
289	Acid Soluble Mo (ppm)	0527	< 0.001		0.3341	0.1029	0.0521	5		289.33	5
289	Acid Soluble Mo (ppm)	0136	< 5		0.3341	0.1029	0.0521	5		289.33	5
289	Acid Soluble Mo (ppm)	0481	< 100		0.3341	0.1029	0.0521	5		289.99	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				
291	Acid Soluble Ni (ppm)	0389	1.350	0.1000	2.725	0.8203	0.3963	14	-1.68	291.30	0
291	Acid Soluble Ni (ppm)	0444	1.620	0.0800	2.725	0.8203	0.3963	14	-1.35	291.30	0
291	Acid Soluble Ni (ppm)	0524	2.200	0.0622	2.725	0.8203	0.3963	14	-0.64	291.30	0
291	Acid Soluble Ni (ppm)	0394	2.298	0.0130	2.725	0.8203	0.3963	14	-0.52	291.33	0
291	Acid Soluble Ni (ppm)	0405	2.500	1.000	2.725	0.8203	0.3963	14	-0.27	291.99	0
291	Acid Soluble Ni (ppm)	0572	2.510	0.1400	2.725	0.8203	0.3963	14	-0.26	291.99	0
291	Acid Soluble Ni (ppm)	0563	2.706	0.0391	2.725	0.8203	0.3963	14	-0.02	291.33	0
291	Acid Soluble Ni (ppm)	0523	2.721	0.0141	2.725	0.8203	0.3963	14	0.00	291.30	0
291	Acid Soluble Ni (ppm)	0527	2.837	0.0234	2.725	0.8203	0.3963	14	0.14	291.33	0
291	Acid Soluble Ni (ppm)	0035	3.050	0.2400	2.725	0.8203	0.3963	14	0.40	291.30	0
291	Acid Soluble Ni (ppm)	0220	3.100	0.4000	2.725	0.8203	0.3963	14	0.46	291.32	0
291	Acid Soluble Ni (ppm)	0220	3.200	0.2000	2.725	0.8203	0.3963	14	0.58	291.99	0
291	Acid Soluble Ni (ppm)	0553	4.580	0.4000	2.725	0.8203	0.3963	14	2.26	291.99	0
291	Acid Soluble Ni (ppm)	0515	6.063	2.837	2.725	0.8203	0.3963	14	4.07	291.34	0
291	Acid Soluble Ni (ppm)	0506	15.45	4.100	2.725	0.8203	0.3963	14	15.51	291.99	1
291	Acid Soluble Ni (ppm)	0255	0.0000	0.0000	2.725	0.8203	0.3963	14		291.99	4
291	Acid Soluble Ni (ppm)	0117	< 5		2.725	0.8203	0.3963	14		291.33	5
291	Acid Soluble Ni (ppm)	0136	< 5		2.725	0.8203	0.3963	14		291.33	5
291	Acid Soluble Ni (ppm)	0481	< 10		2.725	0.8203	0.3963	14		291.99	5
301	Acid Soluble Se (ppm)	0524	0.6470	0.1511	0.9412	0.3736	0.2393	6	-0.70	301.30	0
301	Acid Soluble Se (ppm)	0523	0.6958	0.0323	0.9412	0.3736	0.2393	6	-0.59	301.30	0
301	Acid Soluble Se (ppm)	0220	0.7500	0.1000	0.9412	0.3736	0.2393	6	-0.46	301.99	0
301	Acid Soluble Se (ppm)	0220	0.9000	0.0000	0.9412	0.3736	0.2393	6	-0.10	301.32	0
301	Acid Soluble Se (ppm)	0563	1.154	0.0724	0.9412	0.3736	0.2393	6	0.51	301.33	0
301	Acid Soluble Se (ppm)	0572	1.500	1.080	0.9412	0.3736	0.2393	6	1.33	301.99	0
301	Acid Soluble Se (ppm)	0515	3.445	1.653	0.9412	0.3736	0.2393	6	5.97	301.34	1
301	Acid Soluble Se (ppm)	0255	0.0000	0.0000	0.9412	0.3736	0.2393	6		301.99	4
301	Acid Soluble Se (ppm)	0527	< 0.01		0.9412	0.3736	0.2393	6		301.33	5
301	Acid Soluble Se (ppm)	0481	< 0.5		0.9412	0.3736	0.2393	6		301.99	5
301	Acid Soluble Se (ppm)	0405	< 1		0.9412	0.3736	0.2393	6		301.99	5
311	Sodium (%)	0572	0.0090	0.0004	0.0170	0.0081	0.0047	5	-0.86	311.99	0
311	Sodium (%)	0423	0.0115	0.0010	0.0170	0.0081	0.0047	5	-0.59	311.33	0
311	Sodium (%)	0553	0.0170	0.0020	0.0170	0.0081	0.0047	5	0.00	311.00	0
311	Sodium (%)	0527	0.0176	0.0003	0.0170	0.0081	0.0047	5	0.06	311.33	0
311	Sodium (%)	0354	0.0300	0.0200	0.0170	0.0081	0.0047	5	1.40	311.99	0
311	Sodium (%)	0563	< 0.01		0.0170	0.0081	0.0047	5		311.33	5
321	Acid Soluble Zn (%)	0394	0.0006	0.0000	0.0036	0.0051	0.0766	11	-0.59	321.33	0
321	Acid Soluble Zn (%)	0572	0.0007	0.0001	0.0036	0.0051	0.0766	11	-0.58	321.99	0
321	Acid Soluble Zn (%)	0405	0.0007	0.0000	0.0036	0.0051	0.0766	11	-0.57	321.99	0
321	Acid Soluble Zn (%)	0515	0.0009	0.0001	0.0036	0.0051	0.0766	11	-0.54	321.99	0
321	Acid Soluble Zn (%)	0524	0.0009	0.0001	0.0036	0.0051	0.0766	11	-0.54	321.99	0
321	Acid Soluble Zn (%)	0423	0.0010	0.0000	0.0036	0.0051	0.0766	11	-0.51	321.32	0
321	Acid Soluble Zn (%)	0563	0.0013	0.0001	0.0036	0.0051	0.0766	11	-0.46	321.33	0
321	Acid Soluble Zn (%)	0506	0.0020	0.0000	0.0036	0.0051	0.0766	11	-0.31	321.99	0
321	Acid Soluble Zn (%)	0043	0.0090	0.0020	0.0036	0.0051	0.0766	11	1.07	321.33	0
321	Acid Soluble Zn (%)	0552	0.3350	0.3100	0.0036	0.0051	0.0766	11	65.36	321.30	0
321	Acid Soluble Zn (%)	0444	6.955	0.5300	0.0036	0.0051	0.0766	11	1370.86	321.30	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				
321	Acid Soluble Zn (%)	0072	18.48	0.6275	0.0036	0.0051	0.0766	11	3644.59	321.30	2
321	Acid Soluble Zn (%)	0106	0.0000	0.0000	0.0036	0.0051	0.0766	11		321.33	4
321	Acid Soluble Zn (%)	0255	0.0005	0.0010	0.0036	0.0051	0.0766	11		321.30	4
321	Acid Soluble Zn (%)	0553	< 0.002		0.0036	0.0051	0.0766	11		321.00	5
321	Acid Soluble Zn (%)	0481	< 0.002		0.0036	0.0051	0.0766	11		321.99	5
321	Acid Soluble Zn (%)	0136	< 0.0025		0.0036	0.0051	0.0766	11		321.33	5
321	Acid Soluble Zn (%)	0102	< 0.01		0.0036	0.0051	0.0766	11		321.30	5
321	Acid Soluble Zn (%)	0354	< 0.01		0.0036	0.0051	0.0766	11		321.30	5
321	Acid Soluble Zn (%)	0527	< 0.01		0.0036	0.0051	0.0766	11		321.33	5
321	Acid Soluble Zn (%)	0389	< 0.1		0.0036	0.0051	0.0766	11		321.99	5

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier, 3 = removed from stats, 4 = rejected due to 0s submitted and 5 = LOD. A 9 flag indicates a data problem - scores not calculated. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are grey and included for information only. 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.