

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 210811

11-52-0 MAP

Statistical Summary

Analytes: 34

Labs Reporting: 92

Issue Date : 09/30/2021

Analyte Code	Analyte Sample # 210811	# 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 (%)	34	33	10.64	1.935	10.99		0.2959	0.0644	2.69%		0.1686	2.79%
002	Nitrate N (%)	1		0.0050									
005	Urea N (%)	1		0.0500									
010	Total N (11%)	72	70	11.27	0.8307	11.21	0.5982	0.2550	0.0381	2.27%	0.99	0.1423	2.78%
020	Total P2O5 (%)	46	45	51.33	2.310	51.84		0.7488	0.1395	1.44%		0.3775	1.39%
030	Citrate Insoluble P2O5 (%)	3	2	34.62	29.97	51.92		0.4985	0.4406	0.96%		0.2350	1.39%
040	Indirect Available P2O5 (52%)	1		52.45									
041	Direct Available P2O5 (52%)	54	52	51.66	1.925	51.89	1.0984	0.6231	0.1080	1.20%	1.32	0.4291	1.39%
048	Water Soluble P2O5 (%)	6	5	44.72	4.632	45.45		4.785	2.675	10.53%		0.1200	1.48%
050	Soluble K2O (%)	13	9	0.2912	0.2677	0.2873	0.4100	0.0268	0.0112	9.33%	0.15	0.0143	4.83%
060	Water (Free) (%)	1		1.165									
101	Acid Soluble Ca (%)	9	8	0.3298	0.3532	0.2280	0.2114	0.0630	0.0279	27.65%	0.69	0.0103	5.00%
121	Acid Soluble Mg (%)	12	11	1.601	0.3930	1.744	0.2872	0.1355	0.0511	7.77%	1.10	0.0283	3.68%
143	Elemental S (%)	1		1.705									
145	Sulfate S, HCl soluble (%)	1		1.680									
146	Total S in Liquid (%)	1		1.820									
148	Total S (%)	5	5	1.744	0.3084	1.744	0.2872	0.3084	0.1724	17.68%	2.50	0.0207	3.68%
149	S - HNO3 soluble (%)	2	2	1.702	0.0728								
151	Acid Soluble As (ppm)	14	11	3.610	4.084	2.629		0.6595	0.2485	25.08%		0.2305	13.83%
165	Acid Soluble B (%)	9	8	0.0109	0.0026	0.0113	0.0047	0.0025	0.0011	22.54%	1.26	0.0004	7.86%
181	Acid Soluble Cd (ppm)	20	19	59.58	15.46	60.18		9.165	2.628	15.23%		1.592	8.63%
190	Water Soluble Cl (%)	1		0.1000									
191	Acid Soluble Cr (ppm)	17	17	273.9	38.71	277.4		35.82	10.86	12.91%		4.802	6.86%
202	Acid Soluble Co (ppm)	13	11	10.07	21.85	2.410	1.7231	0.7683	0.2896	31.87%	1.04	0.6673	14.01%
221	Acid Soluble Cu (%)	14	5	0.0019	0.0029	0.0009	0.0051	0.0014	0.0008	152.38%	0.65	0.0003	11.44%
241	Acid Soluble Fe (%)	13	13	1.319	0.4760	1.453	0.1503	0.2495	0.0865	17.17%	3.87	0.0345	3.78%
251	Acid Soluble Pb (ppm)	15	9	2.756	5.708	0.7113		0.6480	0.2700	91.10%		0.0976	16.84%
261	Acid Soluble Mn (%)	12	11	0.0169	0.0075	0.0196	0.0070	0.0023	0.0009	11.88%	0.78	0.0007	7.23%
281	Acid Soluble Hg (ppm)	9	3	0.0092	0.0158	0.0020		0.0026	0.0019	128.28%		0.0007	22.00%
289	Acid Soluble Mo (ppm)	14	13	14.44	5.370	13.79	5.1361	3.745	1.298	27.16%	1.70	0.4207	10.78%
291	Acid Soluble Ni (ppm)	20	19	44.32	8.928	43.89		7.202	2.065	16.41%		2.438	9.05%
301	Acid Soluble Se (ppm)	10	6	3.423	4.117	3.023		1.963	1.002	64.91%		0.3015	13.54%
311	Sodium (%)	5	5	0.2010	0.0112	0.2010	0.0251	0.0112	0.0062	5.55%	1.04	0.0020	5.09%

Analyte Code	Analyte Sample # 210811	# 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 (%)	26	25	28.33	144.0	0.0919	0.0142	0.0144	0.0036	15.66%	2.36	0.0055	5.73%

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.

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 210811

11-52-0 MAP

Lab Values

Analytes: 34

Labs Reporting: 92

Issue Date : 09/30/2021

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 (%)	0136	9.195	0.7300	10.99	0.2959	0.1686	33	-6.08	001.10	0
001	Ammoniacal N (%)	0117	10.05	0.8500	10.99	0.2959	0.1686	33	-3.21	001.10	0
001	Ammoniacal N (%)	0533	10.52	0.0300	10.99	0.2959	0.1686	33	-1.62	001.99	0
001	Ammoniacal N (%)	0513	10.56	0.0400	10.99	0.2959	0.1686	33	-1.47	001.99	0
001	Ammoniacal N (%)	0451	10.57	0.1200	10.99	0.2959	0.1686	33	-1.43	001.10	0
001	Ammoniacal N (%)	0546	10.70	0.3100	10.99	0.2959	0.1686	33	-1.01	001.99	0
001	Ammoniacal N (%)	0551	10.70	0.2000	10.99	0.2959	0.1686	33	-1.00	001.99	0
001	Ammoniacal N (%)	0567	10.81	0.0200	10.99	0.2959	0.1686	33	-0.62	001.99	0
001	Ammoniacal N (%)	0559	10.86	0.0100	10.99	0.2959	0.1686	33	-0.47	001.99	0
001	Ammoniacal N (%)	0562	10.90	0.1000	10.99	0.2959	0.1686	33	-0.32	001.99	0
001	Ammoniacal N (%)	0574	10.90	0.1000	10.99	0.2959	0.1686	33	-0.32	001.99	0
001	Ammoniacal N (%)	0564	10.94	0.0100	10.99	0.2959	0.1686	33	-0.20	001.99	0
001	Ammoniacal N (%)	0549	11.00	0.0300	10.99	0.2959	0.1686	33	0.00	001.99	0
001	Ammoniacal N (%)	0368	11.00	0.0920	10.99	0.2959	0.1686	33	0.00	001.99	0
001	Ammoniacal N (%)	0531	11.00	0.0200	10.99	0.2959	0.1686	33	0.02	001.99	0
001	Ammoniacal N (%)	0548	11.00	0.3000	10.99	0.2959	0.1686	33	0.02	001.99	0
001	Ammoniacal N (%)	0536	11.04	0.0200	10.99	0.2959	0.1686	33	0.15	001.99	0
001	Ammoniacal N (%)	0255	11.05	0.0700	10.99	0.2959	0.1686	33	0.17	001.99	0
001	Ammoniacal N (%)	0394	11.05	0.2310	10.99	0.2959	0.1686	33	0.19	001.99	0
001	Ammoniacal N (%)	0535	11.05	0.1000	10.99	0.2959	0.1686	33	0.19	001.99	0
001	Ammoniacal N (%)	0539	11.08	0.1000	10.99	0.2959	0.1686	33	0.29	001.99	0
001	Ammoniacal N (%)	0553	11.10	0.8000	10.99	0.2959	0.1686	33	0.36	001.99	0
001	Ammoniacal N (%)	0200	11.12	0.0100	10.99	0.2959	0.1686	33	0.41	001.99	0
001	Ammoniacal N (%)	0444	11.15	0.0300	10.99	0.2959	0.1686	33	0.51	001.10	0
001	Ammoniacal N (%)	0220	11.15	0.0000	10.99	0.2959	0.1686	33	0.53	001.99	0
001	Ammoniacal N (%)	0569	11.16	0.0700	10.99	0.2959	0.1686	33	0.54	001.99	0
001	Ammoniacal N (%)	0532	11.22	0.0800	10.99	0.2959	0.1686	33	0.76	001.99	0
001	Ammoniacal N (%)	0563	11.25	0.7600	10.99	0.2959	0.1686	33	0.86	001.10	0
001	Ammoniacal N (%)	0493	11.25	0.1000	10.99	0.2959	0.1686	33	0.86	001.99	0
001	Ammoniacal N (%)	0405	11.32	0.0700	10.99	0.2959	0.1686	33	1.08	001.99	0
001	Ammoniacal N (%)	0027	11.41	0.0000	10.99	0.2959	0.1686	33	1.40	001.99	0
001	Ammoniacal N (%)	0522	11.65	0.0400	10.99	0.2959	0.1686	33	2.22	001.99	0
001	Ammoniacal N (%)	0545	12.01	0.1200	10.99	0.2959	0.1686	33	3.43	001.99	0
001	Ammoniacal N (%)	0524	0.0009	0.0001	10.99	0.2959	0.1686	33	-37.16	001.99	2
002	Nitrate N (%)	0553	0.0050	0.0000				1		002.99	0
005	Urea N (%)	0574	0.0500	0.0000				1		005.00	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 (11%)	0070	10.10†	0.0900	11.21	0.2550	0.1423	70	-4.38	010.60	0
010	Total N (11%)	0117	10.50†	0.0000	11.21	0.2550	0.1423	70	-2.79	010.60	0
010	Total N (11%)	0422	10.55†	0.1000	11.21	0.2550	0.1423	70	-2.59	010.60	0
010	Total N (11%)	0042	10.60†	0.4000	11.21	0.2550	0.1423	70	-2.40	010.60	0
010	Total N (11%)	0523	10.71	0.0300	11.21	0.2550	0.1423	70	-1.99	010.60	0
010	Total N (11%)	0485	10.74	0.3900	11.21	0.2550	0.1423	70	-1.87	010.60	0
010	Total N (11%)	0102	10.88	0.0900	11.21	0.2550	0.1423	70	-1.32	010.60	0
010	Total N (11%)	0567	10.89	0.0200	11.21	0.2550	0.1423	70	-1.26	010.99	0
010	Total N (11%)	0559	10.90	0.0200	11.21	0.2550	0.1423	70	-1.22	010.99	0
010	Total N (11%)	0547	10.92	0.1600	11.21	0.2550	0.1423	70	-1.14	010.60	0
010	Total N (11%)	0574	10.95	0.1000	11.21	0.2550	0.1423	70	-1.02	010.99	0
010	Total N (11%)	0234	10.97	0.0540	11.21	0.2550	0.1423	70	-0.95	010.60	0
010	Total N (11%)	0423	10.99	0.0700	11.21	0.2550	0.1423	70	-0.89	010.60	0
010	Total N (11%)	0534	11.00	0.2000	11.21	0.2550	0.1423	70	-0.83	010.60	0
010	Total N (11%)	0292	11.03	0.0100	11.21	0.2550	0.1423	70	-0.73	010.60	0
010	Total N (11%)	0524	11.03	0.2145	11.21	0.2550	0.1423	70	-0.73	010.99	0
010	Total N (11%)	0402	11.04	0.0500	11.21	0.2550	0.1423	70	-0.69	010.60	0
010	Total N (11%)	0394	11.05	0.2310	11.21	0.2550	0.1423	70	-0.63	010.99	0
010	Total N (11%)	0562	11.05	0.1000	11.21	0.2550	0.1423	70	-0.63	010.99	0
010	Total N (11%)	0564	11.09	0.0200	11.21	0.2550	0.1423	70	-0.48	010.99	0
010	Total N (11%)	0443	11.10	0.1100	11.21	0.2550	0.1423	70	-0.46	010.60	0
010	Total N (11%)	0521	11.10	0.0000	11.21	0.2550	0.1423	70	-0.45	010.60	0
010	Total N (11%)	0354	11.10	0.0000	11.21	0.2550	0.1423	70	-0.44	010.60	0
010	Total N (11%)	0494	11.13	0.1500	11.21	0.2550	0.1423	70	-0.34	010.60	0
010	Total N (11%)	0055	11.14	0.0300	11.21	0.2550	0.1423	70	-0.30	010.60	0
010	Total N (11%)	0548	11.16	0.2100	11.21	0.2550	0.1423	70	-0.22	010.11	0
010	Total N (11%)	0325	11.16	0.7900	11.21	0.2550	0.1423	70	-0.22	010.60	0
010	Total N (11%)	0537	11.16	0.0800	11.21	0.2550	0.1423	70	-0.20	010.99	0
010	Total N (11%)	0169	11.18	0.0800	11.21	0.2550	0.1423	70	-0.12	010.60	0
010	Total N (11%)	0231	11.18	0.0000	11.21	0.2550	0.1423	70	-0.12	010.60	0
010	Total N (11%)	0291	11.20	0.0100	11.21	0.2550	0.1423	70	-0.06	010.60	0
010	Total N (11%)	0136	11.20	0.2000	11.21	0.2550	0.1423	70	-0.04	010.60	0
010	Total N (11%)	0157	11.20	0.0000	11.21	0.2550	0.1423	70	-0.04	010.60	0
010	Total N (11%)	0230	11.20	0.0000	11.21	0.2550	0.1423	70	-0.04	010.60	0
010	Total N (11%)	0389	11.21	0.1700	11.21	0.2550	0.1423	70	-0.03	010.60	0
010	Total N (11%)	0572	11.21	0.3100	11.21	0.2550	0.1423	70	-0.03	010.12	0
010	Total N (11%)	0177	11.22	0.0200	11.21	0.2550	0.1423	70	0.04	010.60	0
010	Total N (11%)	0007	11.25	0.1000	11.21	0.2550	0.1423	70	0.15	010.60	0
010	Total N (11%)	0324	11.25	0.1000	11.21	0.2550	0.1423	70	0.15	010.60	0
010	Total N (11%)	0371	11.25	0.1000	11.21	0.2550	0.1423	70	0.15	010.60	0
010	Total N (11%)	0368	11.26	0.2390	11.21	0.2550	0.1423	70	0.18	010.60	0
010	Total N (11%)	0486	11.26	0.1000	11.21	0.2550	0.1423	70	0.19	010.60	0
010	Total N (11%)	0518	11.27	0.2700	11.21	0.2550	0.1423	70	0.21	010.99	0
010	Total N (11%)	0356	11.27	0.1930	11.21	0.2550	0.1423	70	0.22	010.60	0
010	Total N (11%)	0561	11.28	0.0100	11.21	0.2550	0.1423	70	0.25	010.60	0
010	Total N (11%)	0451	11.29	0.2700	11.21	0.2550	0.1423	70	0.29	010.60	0
010	Total N (11%)	0390	11.30	0.0500	11.21	0.2550	0.1423	70	0.33	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 (11%)	0377	11.30	0.0800	11.21	0.2550	0.1423	70	0.35	010.60	0
010	Total N (11%)	0095	11.31	0.0900	11.21	0.2550	0.1423	70	0.37	010.60	0
010	Total N (11%)	0073	11.31	0.1600	11.21	0.2550	0.1423	70	0.39	010.60	0
010	Total N (11%)	0405	11.34	0.0600	11.21	0.2550	0.1423	70	0.50	010.60	0
010	Total N (11%)	0043	11.35	0.0700	11.21	0.2550	0.1423	70	0.52	010.60	0
010	Total N (11%)	0035	11.35	0.7000	11.21	0.2550	0.1423	70	0.54	010.60	0
010	Total N (11%)	0027	11.35	0.1000	11.21	0.2550	0.1423	70	0.54	010.60	0
010	Total N (11%)	0444	11.35	0.0800	11.21	0.2550	0.1423	70	0.54	010.60	0
010	Total N (11%)	0029	11.39	0.1500	11.21	0.2550	0.1423	70	0.68	010.60	0
010	Total N (11%)	0040	11.40	0.0000	11.21	0.2550	0.1423	70	0.74	010.60	0
010	Total N (11%)	0527	11.45	0.0140	11.21	0.2550	0.1423	70	0.92	010.60	0
010	Total N (11%)	0018	11.45	0.1000	11.21	0.2550	0.1423	70	0.94	010.60	0
010	Total N (11%)	0255	11.47	0.1720	11.21	0.2550	0.1423	70	0.99	010.60	0
010	Total N (11%)	0049	11.52	0.0100	11.21	0.2550	0.1423	70	1.19	010.60	0
010	Total N (11%)	0114	11.55	0.0900	11.21	0.2550	0.1423	70	1.31	010.60	0
010	Total N (11%)	0501	11.59	0.2300	11.21	0.2550	0.1423	70	1.46	010.60	0
010	Total N (11%)	0563	11.60	0.1500	11.21	0.2550	0.1423	70	1.50	010.99	0
010	Total N (11%)	0220	11.69	0.0200	11.21	0.2550	0.1423	70	1.88	010.60	0
010	Total N (11%)	0025	11.79	0.5300	11.21	0.2550	0.1423	70	2.25	010.60	0
010	Total N (11%)	0421	11.79	0.1100	11.21	0.2550	0.1423	70	2.25	010.60	0
010	Total N (11%)	0568	11.95‡	0.3000	11.21	0.2550	0.1423	70	2.90	010.12	0
010	Total N (11%)	0571	12.00‡	0.0000	11.21	0.2550	0.1423	70	3.09	010.99	0
010	Total N (11%)	0576	12.60‡	0.8000	11.21	0.2550	0.1423	70	5.44	010.99	0
010	Total N (11%)	0023	9.199†	1.158	11.21	0.2550	0.1423	70	-7.89	010.60	1
010	Total N (11%)	0472	17.25‡	0.0200	11.21	0.2550	0.1423	70	23.68	010.60	2
020	Total P2O5 (%)	0472	42.15	0.1000	51.84	0.7488	0.3775	45	-12.95	020.50	0
020	Total P2O5 (%)	0389	45.26	0.0900	51.84	0.7488	0.3775	45	-8.80	020.50	0
020	Total P2O5 (%)	0390	47.75	0.9000	51.84	0.7488	0.3775	45	-5.47	020.50	0
020	Total P2O5 (%)	0049	49.86	0.6000	51.84	0.7488	0.3775	45	-2.65	020.10	0
020	Total P2O5 (%)	0547	50.00	0.4000	51.84	0.7488	0.3775	45	-2.46	020.20	0
020	Total P2O5 (%)	0035	50.01	0.5300	51.84	0.7488	0.3775	45	-2.46	020.40	0
020	Total P2O5 (%)	0546	50.67	0.0410	51.84	0.7488	0.3775	45	-1.58	020.50	0
020	Total P2O5 (%)	0521	51.07	0.0000	51.84	0.7488	0.3775	45	-1.03	020.50	0
020	Total P2O5 (%)	0572	51.18	1.870	51.84	0.7488	0.3775	45	-0.89	020.99	0
020	Total P2O5 (%)	0561	51.30	0.2700	51.84	0.7488	0.3775	45	-0.73	020.20	0
020	Total P2O5 (%)	0114	51.46	0.5700	51.84	0.7488	0.3775	45	-0.52	020.10	0
020	Total P2O5 (%)	0292	51.50	0.0600	51.84	0.7488	0.3775	45	-0.46	020.20	0
020	Total P2O5 (%)	0548	51.58	0.0700	51.84	0.7488	0.3775	45	-0.36	020.20	0
020	Total P2O5 (%)	0444	51.60	0.4200	51.84	0.7488	0.3775	45	-0.33	020.50	0
020	Total P2O5 (%)	0394	51.64	0.9710	51.84	0.7488	0.3775	45	-0.27	020.20	0
020	Total P2O5 (%)	0443	51.68	0.0100	51.84	0.7488	0.3775	45	-0.23	020.99	0
020	Total P2O5 (%)	0493	51.70	0.1000	51.84	0.7488	0.3775	45	-0.19	020.20	0
020	Total P2O5 (%)	0513	51.78	0.0400	51.84	0.7488	0.3775	45	-0.09	020.99	0
020	Total P2O5 (%)	0493	51.80	0.1000	51.84	0.7488	0.3775	45	-0.06	020.10	0
020	Total P2O5 (%)	0231	51.81	0.0400	51.84	0.7488	0.3775	45	-0.05	020.20	0
020	Total P2O5 (%)	0574	51.85	0.1000	51.84	0.7488	0.3775	45	0.01	020.10	0
020	Total P2O5 (%)	0534	51.85	0.1000	51.84	0.7488	0.3775	45	0.01	020.20	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				
020	Total P2O5 (%)	0523	51.85	0.3000	51.84	0.7488	0.3775	45	0.01	020.50	0
020	Total P2O5 (%)	0524	51.88	0.5301	51.84	0.7488	0.3775	45	0.04	020.50	0
020	Total P2O5 (%)	0433	51.90	1.170	51.84	0.7488	0.3775	45	0.07	020.50	0
020	Total P2O5 (%)	0564	51.93	0.0200	51.84	0.7488	0.3775	45	0.11	020.99	0
020	Total P2O5 (%)	0371	52.10	0.2000	51.84	0.7488	0.3775	45	0.34	020.20	0
020	Total P2O5 (%)	0255	52.12	0.1830	51.84	0.7488	0.3775	45	0.37	020.50	0
020	Total P2O5 (%)	0405	52.14	0.1100	51.84	0.7488	0.3775	45	0.39	020.20	0
020	Total P2O5 (%)	0402	52.20	0.4545	51.84	0.7488	0.3775	45	0.48	020.50	0
020	Total P2O5 (%)	0169	52.23	0.0900	51.84	0.7488	0.3775	45	0.51	020.20	0
020	Total P2O5 (%)	0027	52.26	1.080	51.84	0.7488	0.3775	45	0.55	020.20	0
020	Total P2O5 (%)	0291	52.31	0.0100	51.84	0.7488	0.3775	45	0.61	020.50	0
020	Total P2O5 (%)	0324	52.35	1.500	51.84	0.7488	0.3775	45	0.67	020.20	0
020	Total P2O5 (%)	0444	52.39	0.3100	51.84	0.7488	0.3775	45	0.72	020.10	0
020	Total P2O5 (%)	0527	52.42	0.2572	51.84	0.7488	0.3775	45	0.77	020.50	0
020	Total P2O5 (%)	0451	52.43	0.6300	51.84	0.7488	0.3775	45	0.77	020.50	0
020	Total P2O5 (%)	0177	52.44	0.2096	51.84	0.7488	0.3775	45	0.79	020.50	0
020	Total P2O5 (%)	0220	52.45	0.2100	51.84	0.7488	0.3775	45	0.80	020.20	0
020	Total P2O5 (%)	0356	52.59	0.3570	51.84	0.7488	0.3775	45	0.99	020.20	0
020	Total P2O5 (%)	0522	52.66	0.0400	51.84	0.7488	0.3775	45	1.09	020.20	0
020	Total P2O5 (%)	0423	52.67	0.4600	51.84	0.7488	0.3775	45	1.10	020.50	0
020	Total P2O5 (%)	0571	53.01	0.0000	51.84	0.7488	0.3775	45	1.56	020.20	0
020	Total P2O5 (%)	0368	54.05	0.3838	51.84	0.7488	0.3775	45	2.95	020.50	0
020	Total P2O5 (%)	0422	55.25	1.100	51.84	0.7488	0.3775	45	4.55	020.50	0
020	Total P2O5 (%)	0515	43.99	4.698	51.84	0.7488	0.3775	45	-10.50	020.99	1
030	Citrate Insoluble P2O5 (%)	0444	51.57	0.3300				2		030.10	0
030	Citrate Insoluble P2O5 (%)	0537	52.27	0.1400				2		030.99	0
030	Citrate Insoluble P2O5 (%)	0220	< 0.01					2		030.20	5
040	Indirect Available P2O5 (52%)	0220	52.45±	0.2100				1		040.20	0
041	Direct Available P2O5 (52%)	0230	49.70†	0.6000	51.89	0.6231	0.4291	52	-3.52	041.21	0
041	Direct Available P2O5 (52%)	0007	49.90†	1.400	51.89	0.6231	0.4291	52	-3.20	041.50	0
041	Direct Available P2O5 (52%)	0095	50.01†	0.6300	51.89	0.6231	0.4291	52	-3.03	041.21	0
041	Direct Available P2O5 (52%)	0377	50.45†	0.4500	51.89	0.6231	0.4291	52	-2.32	041.51	0
041	Direct Available P2O5 (52%)	0027	50.66†	0.8800	51.89	0.6231	0.4291	52	-1.98	041.20	0
041	Direct Available P2O5 (52%)	0102	51.20	0.1000	51.89	0.6231	0.4291	52	-1.11	041.10	0
041	Direct Available P2O5 (52%)	0025	51.20	0.2000	51.89	0.6231	0.4291	52	-1.11	041.51	0
041	Direct Available P2O5 (52%)	0200	51.25	0.2000	51.89	0.6231	0.4291	52	-1.03	041.21	0
041	Direct Available P2O5 (52%)	0325	51.30	1.000	51.89	0.6231	0.4291	52	-0.95	041.50	0
041	Direct Available P2O5 (52%)	0177	51.34	0.1518	51.89	0.6231	0.4291	52	-0.89	041.21	0
041	Direct Available P2O5 (52%)	0040	51.45	1.500	51.89	0.6231	0.4291	52	-0.71	041.10	0
041	Direct Available P2O5 (52%)	0553	51.45	1.700	51.89	0.6231	0.4291	52	-0.71	041.20	0
041	Direct Available P2O5 (52%)	0421	51.45	0.1000	51.89	0.6231	0.4291	52	-0.71	041.50	0
041	Direct Available P2O5 (52%)	0423	51.46	0.4740	51.89	0.6231	0.4291	52	-0.70	041.51	0
041	Direct Available P2O5 (52%)	0551	51.56	0.1800	51.89	0.6231	0.4291	52	-0.53	041.99	0
041	Direct Available P2O5 (52%)	0405	51.58	0.0100	51.89	0.6231	0.4291	52	-0.51	041.21	0
041	Direct Available P2O5 (52%)	0494	51.64	1.030	51.89	0.6231	0.4291	52	-0.41	041.51	0
041	Direct Available P2O5 (52%)	0536	51.66	0.1600	51.89	0.6231	0.4291	52	-0.37	041.99	0
041	Direct Available P2O5 (52%)	0018	51.70	0.0000	51.89	0.6231	0.4291	52	-0.31	041.40	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				
041	Direct Available P2O5 (52%)	0055	51.73	0.1800	51.89	0.6231	0.4291	52	-0.26	041.11	0
041	Direct Available P2O5 (52%)	0231	51.74	0.1700	51.89	0.6231	0.4291	52	-0.25	041.21	0
041	Direct Available P2O5 (52%)	0405	51.79	0.1600	51.89	0.6231	0.4291	52	-0.16	041.11	0
041	Direct Available P2O5 (52%)	0535	51.85	0.1000	51.89	0.6231	0.4291	52	-0.07	041.99	0
041	Direct Available P2O5 (52%)	0559	51.87	0.0100	51.89	0.6231	0.4291	52	-0.04	041.99	0
041	Direct Available P2O5 (52%)	0562	51.88	0.1500	51.89	0.6231	0.4291	52	-0.03	041.99	0
041	Direct Available P2O5 (52%)	0394	51.92	1.305	51.89	0.6231	0.4291	52	0.05	041.21	0
041	Direct Available P2O5 (52%)	0220	51.93	0.1000	51.89	0.6231	0.4291	52	0.06	041.11	0
041	Direct Available P2O5 (52%)	0569	51.95	0.1500	51.89	0.6231	0.4291	52	0.08	041.99	0
041	Direct Available P2O5 (52%)	0533	51.95	0.1400	51.89	0.6231	0.4291	52	0.09	041.99	0
041	Direct Available P2O5 (52%)	0086	51.99	0.0092	51.89	0.6231	0.4291	52	0.15	041.10	0
041	Direct Available P2O5 (52%)	0177	51.99	0.0185	51.89	0.6231	0.4291	52	0.15	041.10	0
041	Direct Available P2O5 (52%)	0549	51.99	0.2200	51.89	0.6231	0.4291	52	0.16	041.99	0
041	Direct Available P2O5 (52%)	0576	52.00	2.000	51.89	0.6231	0.4291	52	0.17	041.20	0
041	Direct Available P2O5 (52%)	0531	52.01	0.0200	51.89	0.6231	0.4291	52	0.19	041.99	0
041	Direct Available P2O5 (52%)	0539	52.03	0.1500	51.89	0.6231	0.4291	52	0.21	041.99	0
041	Direct Available P2O5 (52%)	0513	52.09	0.0800	51.89	0.6231	0.4291	52	0.32	041.11	0
041	Direct Available P2O5 (52%)	0518	52.11	0.0400	51.89	0.6231	0.4291	52	0.35	041.99	0
041	Direct Available P2O5 (52%)	0522	52.24	0.0400	51.89	0.6231	0.4291	52	0.56	041.21	0
041	Direct Available P2O5 (52%)	0532	52.28	0.0700	51.89	0.6231	0.4291	52	0.61	041.99	0
041	Direct Available P2O5 (52%)	0485	52.30	0.1500	51.89	0.6231	0.4291	52	0.65	041.11	0
041	Direct Available P2O5 (52%)	0494	52.42	0.1600	51.89	0.6231	0.4291	52	0.85	041.10	0
041	Direct Available P2O5 (52%)	0043	52.44	0.1900	51.89	0.6231	0.4291	52	0.87	041.11	0
041	Direct Available P2O5 (52%)	0545	52.45	0.0600	51.89	0.6231	0.4291	52	0.89	041.99	0
041	Direct Available P2O5 (52%)	0136	52.55	0.7000	51.89	0.6231	0.4291	52	1.05	041.51	0
041	Direct Available P2O5 (52%)	0486	52.58	0.1100	51.89	0.6231	0.4291	52	1.09	041.51	0
041	Direct Available P2O5 (52%)	0073	52.63	0.2700	51.89	0.6231	0.4291	52	1.18	041.11	0
041	Direct Available P2O5 (52%)	0354	52.65	0.1000	51.89	0.6231	0.4291	52	1.22	041.21	0
041	Direct Available P2O5 (52%)	0368	52.79	0.5844	51.89	0.6231	0.4291	52	1.44	041.50	0
041	Direct Available P2O5 (52%)	0034	53.24‡	3.370	51.89	0.6231	0.4291	52	2.15	041.40	0
041	Direct Available P2O5 (52%)	0029	53.55‡	0.2400	51.89	0.6231	0.4291	52	2.66	041.40	0
041	Direct Available P2O5 (52%)	0055	53.92‡	0.2000	51.89	0.6231	0.4291	52	3.25	041.21	0
041	Direct Available P2O5 (52%)	0023	54.35‡	0.3000	51.89	0.6231	0.4291	52	3.94	041.51	0
041	Direct Available P2O5 (52%)	0568	52.35	6.900	51.89	0.6231	0.4291	52	0.73	041.21	1
041	Direct Available P2O5 (52%)	0472	39.21†	0.6000	51.89	0.6231	0.4291	52	-20.36	041.21	2
048	Water Soluble P2O5 (%)	0472	38.26	0.3000	45.45	4.785	0.1200	5	-1.31	048.20	0
048	Water Soluble P2O5 (%)	0513	45.45	0.0400	45.45	4.785	0.1200	5	0.00	048.99	0
048	Water Soluble P2O5 (%)	0444	45.66	0.1000	45.45	4.785	0.1200	5	0.04	048.10	0
048	Water Soluble P2O5 (%)	0444	46.14	0.1100	45.45	4.785	0.1200	5	0.13	048.50	0
048	Water Soluble P2O5 (%)	0567	51.73	0.0500	45.45	4.785	0.1200	5	1.15	048.99	0
048	Water Soluble P2O5 (%)	0572	41.11	4.170	45.45	4.785	0.1200	5	-0.79	048.99	1
050	Soluble K2O (%)	0023	0.2605	0.0030	0.2873	0.0268	0.0143	9	-1.00	050.52	0
050	Soluble K2O (%)	0568	0.2650	0.0500	0.2873	0.0268	0.0143	9	-0.83	050.51	0
050	Soluble K2O (%)	0422	0.2680	0.0260	0.2873	0.0268	0.0143	9	-0.72	050.50	0
050	Soluble K2O (%)	0553	0.2730	0.0020	0.2873	0.0268	0.0143	9	-0.53	050.99	0
050	Soluble K2O (%)	0524	0.2859	0.0067	0.2873	0.0268	0.0143	9	-0.06	050.99	0
050	Soluble K2O (%)	0354	0.2865	0.0090	0.2873	0.0268	0.0143	9	-0.03	050.52	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				
050	Soluble K2O (%)	0389	0.3050	0.0100	0.2873	0.0268	0.0143	9	0.66	050.99	0
050	Soluble K2O (%)	0527	0.3146	0.0018	0.2873	0.0268	0.0143	9	1.02	050.99	0
050	Soluble K2O (%)	0423	0.3300	0.0200	0.2873	0.0268	0.0143	9	1.59	050.52	0
050	Soluble K2O (%)	0515	1.097	0.2044	0.2873	0.0268	0.0143	9	30.18	050.99	1
050	Soluble K2O (%)	0472	0.0000	0.0000	0.2873	0.0268	0.0143	9		050.32	4
050	Soluble K2O (%)	0571	0.0000	0.0000	0.2873	0.0268	0.0143	9		050.99	4
050	Soluble K2O (%)	0325	< 0.1		0.2873	0.0268	0.0143	9		050.99	5
060	Water (Free) (%)	0513	1.165	0.0100				1		060.00	0
101	Acid Soluble Ca (%)	0553	0.0300	0.0000	0.2280	0.0630	0.0103	8	-2.87	101.00	0
101	Acid Soluble Ca (%)	0527	0.1804	0.0084	0.2280	0.0630	0.0103	8	-0.69	101.33	0
101	Acid Soluble Ca (%)	0389	0.2000	0.0000	0.2280	0.0630	0.0103	8	-0.41	101.99	0
101	Acid Soluble Ca (%)	0035	0.2395	0.0090	0.2280	0.0630	0.0103	8	0.17	101.30	0
101	Acid Soluble Ca (%)	0354	0.2400	0.0000	0.2280	0.0630	0.0103	8	0.17	101.30	0
101	Acid Soluble Ca (%)	0568	0.2550	0.0020	0.2280	0.0630	0.0103	8	0.39	101.30	0
101	Acid Soluble Ca (%)	0494	0.2607	0.0327	0.2280	0.0630	0.0103	8	0.47	101.33	0
101	Acid Soluble Ca (%)	0472	0.3150	0.0300	0.2280	0.0630	0.0103	8	1.26	101.33	0
101	Acid Soluble Ca (%)	0423	1.248	2.003	0.2280	0.0630	0.0103	8	14.79	101.32	1
121	Acid Soluble Mg (%)	0472	0.8500	0.0000	1.744	0.1355	0.0283	11	-6.60	121.33	0
121	Acid Soluble Mg (%)	0524	1.590	0.0367	1.744	0.1355	0.0283	11	-1.14	121.99	0
121	Acid Soluble Mg (%)	0521	1.629	0.0000	1.744	0.1355	0.0283	11	-0.85	121.32	0
121	Acid Soluble Mg (%)	0568	1.655	0.0300	1.744	0.1355	0.0283	11	-0.66	121.30	0
121	Acid Soluble Mg (%)	0553	1.760	0.0000	1.744	0.1355	0.0283	11	0.12	121.00	0
121	Acid Soluble Mg (%)	0423	1.775	0.0300	1.744	0.1355	0.0283	11	0.23	121.32	0
121	Acid Soluble Mg (%)	0527	1.812	0.0096	1.744	0.1355	0.0283	11	0.51	121.33	0
121	Acid Soluble Mg (%)	0354	1.840	0.0600	1.744	0.1355	0.0283	11	0.71	121.30	0
121	Acid Soluble Mg (%)	0389	1.840	0.0200	1.744	0.1355	0.0283	11	0.71	121.99	0
121	Acid Soluble Mg (%)	0494	1.860	0.1047	1.744	0.1355	0.0283	11	0.86	121.33	0
121	Acid Soluble Mg (%)	0035	1.880	0.0200	1.744	0.1355	0.0283	11	1.01	121.30	0
121	Acid Soluble Mg (%)	0515	0.7225	0.2177	1.744	0.1355	0.0283	11	-7.54	121.99	1
143	Elemental S (%)	0389	1.705	0.0500				1		143.99	0
145	Sulfate S, HCl soluble (%)	0553	1.680	0.0200				1		145.99	0
146	Total S in Liquid (%)	0522	1.820	0.0200				1		146.00	0
148	Total S (%)	0527	1.398	0.0172	1.744	0.3084	0.0207	5	-1.12	148.07	0
148	Total S (%)	0354	1.675	0.0300	1.744	0.3084	0.0207	5	-0.22	148.99	0
148	Total S (%)	0563	1.676	0.0244	1.744	0.3084	0.0207	5	-0.22	148.07	0
148	Total S (%)	0494	1.726	0.0218	1.744	0.3084	0.0207	5	-0.06	148.07	0
148	Total S (%)	0472	2.245	0.0100	1.744	0.3084	0.0207	5	1.62	148.07	0
149	S - HNO3 soluble (%)	0423	1.650	0.0400				2		149.04	0
149	S - HNO3 soluble (%)	0524	1.753	0.1252				2		149.04	0
151	Acid Soluble As (ppm)	0534	0.7100	0.0400	2.629	0.6595	0.2305	11	-2.91	151.00	0
151	Acid Soluble As (ppm)	0548	2.045	0.0300	2.629	0.6595	0.2305	11	-0.89	151.33	0
151	Acid Soluble As (ppm)	0572	2.250	0.0800	2.629	0.6595	0.2305	11	-0.57	151.99	0
151	Acid Soluble As (ppm)	0169	2.363	0.1800	2.629	0.6595	0.2305	11	-0.40	151.30	0
151	Acid Soluble As (ppm)	0527	2.492	0.1295	2.629	0.6595	0.2305	11	-0.21	151.33	0
151	Acid Soluble As (ppm)	0136	2.530	0.0000	2.629	0.6595	0.2305	11	-0.15	151.33	0
151	Acid Soluble As (ppm)	0501	2.550	0.1000	2.629	0.6595	0.2305	11	-0.12	151.30	0
151	Acid Soluble As (ppm)	0405	3.000	0.0000	2.629	0.6595	0.2305	11	0.56	151.99	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				
151	Acid Soluble As (ppm)	0524	3.166	0.1089	2.629	0.6595	0.2305	11	0.81	151.30	0
151	Acid Soluble As (ppm)	0563	3.267	0.0669	2.629	0.6595	0.2305	11	0.97	151.33	0
151	Acid Soluble As (ppm)	0494	13.40	1.800	2.629	0.6595	0.2305	11	16.33	151.33	0
151	Acid Soluble As (ppm)	0515	12.47	11.22	2.629	0.6595	0.2305	11	14.92	151.34	1
151	Acid Soluble As (ppm)	0255	0.0000	0.0000	2.629	0.6595	0.2305	11		151.30	4
151	Acid Soluble As (ppm)	0368	< 0.3		2.629	0.6595	0.2305	11		151.34	5
165	Acid Soluble B (%)	0515	0.0056	0.0014	0.0113	0.0025	0.0004	8	-2.04	165.99	0
165	Acid Soluble B (%)	0389	0.0100	0.0000	0.0113	0.0025	0.0004	8	-0.46	165.30	0
165	Acid Soluble B (%)	0472	0.0100	0.0000	0.0113	0.0025	0.0004	8	-0.46	165.99	0
165	Acid Soluble B (%)	0524	0.0104	0.0003	0.0113	0.0025	0.0004	8	-0.33	165.99	0
165	Acid Soluble B (%)	0423	0.0120	0.0000	0.0113	0.0025	0.0004	8	0.26	165.99	0
165	Acid Soluble B (%)	0527	0.0129	0.0000	0.0113	0.0025	0.0004	8	0.58	165.99	0
165	Acid Soluble B (%)	0563	0.0130	0.0006	0.0113	0.0025	0.0004	8	0.62	165.99	0
165	Acid Soluble B (%)	0553	0.0145	0.0010	0.0113	0.0025	0.0004	8	1.16	165.00	0
165	Acid Soluble B (%)	0354	< 0.01		0.0113	0.0025	0.0004	8		165.30	5
181	Acid Soluble Cd (ppm)	0534	40.60	4.200	60.18	9.165	1.592	19	-2.14	181.00	0
181	Acid Soluble Cd (ppm)	0501	48.50	1.000	60.18	9.165	1.592	19	-1.27	181.30	0
181	Acid Soluble Cd (ppm)	0444	48.67	2.330	60.18	9.165	1.592	19	-1.26	181.30	0
181	Acid Soluble Cd (ppm)	0389	51.15	0.7000	60.18	9.165	1.592	19	-0.99	181.30	0
181	Acid Soluble Cd (ppm)	0255	54.10	4.640	60.18	9.165	1.592	19	-0.66	181.30	0
181	Acid Soluble Cd (ppm)	0027	56.50	3.000	60.18	9.165	1.592	19	-0.40	181.30	0
181	Acid Soluble Cd (ppm)	0169	56.79	1.080	60.18	9.165	1.592	19	-0.37	181.30	0
181	Acid Soluble Cd (ppm)	0035	58.80	0.6000	60.18	9.165	1.592	19	-0.15	181.30	0
181	Acid Soluble Cd (ppm)	0394	59.51	0.8600	60.18	9.165	1.592	19	-0.07	181.30	0
181	Acid Soluble Cd (ppm)	0524	60.00	0.9739	60.18	9.165	1.592	19	-0.02	181.30	0
181	Acid Soluble Cd (ppm)	0485	61.51	1.500	60.18	9.165	1.592	19	0.14	181.30	0
181	Acid Soluble Cd (ppm)	0368	64.40	0.2000	60.18	9.165	1.592	19	0.46	181.34	0
181	Acid Soluble Cd (ppm)	0572	64.40	0.8200	60.18	9.165	1.592	19	0.46	181.99	0
181	Acid Soluble Cd (ppm)	0136	64.80	1.000	60.18	9.165	1.592	19	0.50	181.33	0
181	Acid Soluble Cd (ppm)	0405	65.10	1.200	60.18	9.165	1.592	19	0.54	181.99	0
181	Acid Soluble Cd (ppm)	0494	65.60	2.800	60.18	9.165	1.592	19	0.59	181.33	0
181	Acid Soluble Cd (ppm)	0563	69.72	2.826	60.18	9.165	1.592	19	1.04	181.33	0
181	Acid Soluble Cd (ppm)	0527	73.58	0.3125	60.18	9.165	1.592	19	1.46	181.33	0
181	Acid Soluble Cd (ppm)	0548	104.8	0.2000	60.18	9.165	1.592	19	4.87	181.33	0
181	Acid Soluble Cd (ppm)	0515	23.10	23.80	60.18	9.165	1.592	19	-4.05	181.34	1
190	Water Soluble Cl (%)	0553	< 0.1					0		190.00	5
191	Acid Soluble Cr (ppm)	0515	185.4	8.542	277.4	35.82	4.802	17	-2.57	191.34	0
191	Acid Soluble Cr (ppm)	0572	203.0	0.2300	277.4	35.82	4.802	17	-2.08	191.99	0
191	Acid Soluble Cr (ppm)	0389	239.0	4.000	277.4	35.82	4.802	17	-1.07	191.30	0
191	Acid Soluble Cr (ppm)	0444	242.5	9.000	277.4	35.82	4.802	17	-0.97	191.30	0
191	Acid Soluble Cr (ppm)	0524	254.3	2.397	277.4	35.82	4.802	17	-0.64	191.30	0
191	Acid Soluble Cr (ppm)	0035	267.0	6.000	277.4	35.82	4.802	17	-0.29	191.30	0
191	Acid Soluble Cr (ppm)	0136	270.0	18.00	277.4	35.82	4.802	17	-0.21	191.33	0
191	Acid Soluble Cr (ppm)	0169	280.5	3.496	277.4	35.82	4.802	17	0.09	191.30	0
191	Acid Soluble Cr (ppm)	0394	281.2	0.0400	277.4	35.82	4.802	17	0.11	191.30	0
191	Acid Soluble Cr (ppm)	0405	285.5	3.000	277.4	35.82	4.802	17	0.23	191.99	0
191	Acid Soluble Cr (ppm)	0027	290.0	0.0000	277.4	35.82	4.802	17	0.35	191.30	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				
191	Acid Soluble Cr (ppm)	0368	299.0	2.000	277.4	35.82	4.802	17	0.60	191.34	0
191	Acid Soluble Cr (ppm)	0563	303.0	2.015	277.4	35.82	4.802	17	0.71	191.33	0
191	Acid Soluble Cr (ppm)	0501	310.0	0.0000	277.4	35.82	4.802	17	0.91	191.30	0
191	Acid Soluble Cr (ppm)	0548	312.3	0.6000	277.4	35.82	4.802	17	0.98	191.33	0
191	Acid Soluble Cr (ppm)	0494	312.3	18.67	277.4	35.82	4.802	17	0.98	191.33	0
191	Acid Soluble Cr (ppm)	0527	321.2	3.650	277.4	35.82	4.802	17	1.23	191.33	0
202	Acid Soluble Co (ppm)	0572	1.390	0.0200	2.410	0.7683	0.6673	11	-1.33	202.99	0
202	Acid Soluble Co (ppm)	0563	1.884	0.0025	2.410	0.7683	0.6673	11	-0.69	202.33	0
202	Acid Soluble Co (ppm)	0548	1.905	0.1700	2.410	0.7683	0.6673	11	-0.66	202.33	0
202	Acid Soluble Co (ppm)	0405	2.000	0.2000	2.410	0.7683	0.6673	11	-0.53	202.99	0
202	Acid Soluble Co (ppm)	0501	2.200	0.0000	2.410	0.7683	0.6673	11	-0.27	202.34	0
202	Acid Soluble Co (ppm)	0527	2.276	0.0908	2.410	0.7683	0.6673	11	-0.18	202.33	0
202	Acid Soluble Co (ppm)	0389	2.485	0.0100	2.410	0.7683	0.6673	11	0.10	202.30	0
202	Acid Soluble Co (ppm)	0368	2.500	0.2000	2.410	0.7683	0.6673	11	0.12	202.34	0
202	Acid Soluble Co (ppm)	0035	2.750	0.9800	2.410	0.7683	0.6673	11	0.44	202.30	0
202	Acid Soluble Co (ppm)	0524	4.015	0.0740	2.410	0.7683	0.6673	11	2.09	202.30	0
202	Acid Soluble Co (ppm)	0515	22.05	5.593	2.410	0.7683	0.6673	11	25.56	202.34	0
202	Acid Soluble Co (ppm)	0255	80.50	36.02	2.410	0.7683	0.6673	11	101.64	202.99	1
202	Acid Soluble Co (ppm)	0136	< 5		2.410	0.7683	0.6673	11		202.33	5
221	Acid Soluble Cu (%)	0394	0.0002	0.0001	0.0009	0.0014	0.0003	5	-0.55	221.32	0
221	Acid Soluble Cu (%)	0368	0.0002	0.0000	0.0009	0.0014	0.0003	5	-0.52	221.99	0
221	Acid Soluble Cu (%)	0527	0.0003	0.0000	0.0009	0.0014	0.0003	5	-0.44	221.33	0
221	Acid Soluble Cu (%)	0548	0.0006	0.0003	0.0009	0.0014	0.0003	5	-0.27	221.33	0
221	Acid Soluble Cu (%)	0402	0.0035	0.0009	0.0009	0.0014	0.0003	5	1.78	221.30	0
221	Acid Soluble Cu (%)	0515	0.0035	0.0044	0.0009	0.0014	0.0003	5	1.81	221.99	1
221	Acid Soluble Cu (%)	0472	0.0000	0.0000	0.0009	0.0014	0.0003	5		221.33	4
221	Acid Soluble Cu (%)	0255	0.0005	0.0010	0.0009	0.0014	0.0003	5		221.30	4
221	Acid Soluble Cu (%)	0563	< 0.0001		0.0009	0.0014	0.0003	5		221.33	5
221	Acid Soluble Cu (%)	0405	< 0.0001		0.0009	0.0014	0.0003	5		221.99	5
221	Acid Soluble Cu (%)	0572	< 0.0001		0.0009	0.0014	0.0003	5		221.99	5
221	Acid Soluble Cu (%)	0136	< 0.0025		0.0009	0.0014	0.0003	5		221.33	5
221	Acid Soluble Cu (%)	0553	< 0.005		0.0009	0.0014	0.0003	5		221.00	5
221	Acid Soluble Cu (%)	0354	< 0.01		0.0009	0.0014	0.0003	5		221.30	5
241	Acid Soluble Fe (%)	0515	0.3944	0.0762	1.453	0.2495	0.0345	13	-4.24	241.99	0
241	Acid Soluble Fe (%)	0472	0.4050	0.0100	1.453	0.2495	0.0345	13	-4.20	241.33	0
241	Acid Soluble Fe (%)	0553	0.6975	0.0050	1.453	0.2495	0.0345	13	-3.03	241.00	0
241	Acid Soluble Fe (%)	0423	1.455	0.0300	1.453	0.2495	0.0345	13	0.01	241.32	0
241	Acid Soluble Fe (%)	0524	1.487	0.0064	1.453	0.2495	0.0345	13	0.13	241.99	0
241	Acid Soluble Fe (%)	0521	1.524	0.0000	1.453	0.2495	0.0345	13	0.28	241.32	0
241	Acid Soluble Fe (%)	0527	1.558	0.0025	1.453	0.2495	0.0345	13	0.42	241.33	0
241	Acid Soluble Fe (%)	0494	1.574	0.1142	1.453	0.2495	0.0345	13	0.48	241.33	0
241	Acid Soluble Fe (%)	0389	1.580	0.0200	1.453	0.2495	0.0345	13	0.51	241.99	0
241	Acid Soluble Fe (%)	0563	1.589	0.0041	1.453	0.2495	0.0345	13	0.54	241.33	0
241	Acid Soluble Fe (%)	0035	1.605	0.1300	1.453	0.2495	0.0345	13	0.61	241.30	0
241	Acid Soluble Fe (%)	0444	1.635	0.0100	1.453	0.2495	0.0345	13	0.73	241.30	0
241	Acid Soluble Fe (%)	0354	1.650	0.0400	1.453	0.2495	0.0345	13	0.79	241.30	0
251	Acid Soluble Pb (ppm)	0572	0.2050	0.1100	0.7113	0.6480	0.0976	9	-0.78	251.99	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				
251	Acid Soluble Pb (ppm)	0563	0.2683	0.0169	0.7113	0.6480	0.0976	9	-0.68	251.33	0
251	Acid Soluble Pb (ppm)	0501	0.2700	0.0000	0.7113	0.6480	0.0976	9	-0.68	251.30	0
251	Acid Soluble Pb (ppm)	0394	0.2995	0.0410	0.7113	0.6480	0.0976	9	-0.64	251.30	0
251	Acid Soluble Pb (ppm)	0524	0.4258	0.0764	0.7113	0.6480	0.0976	9	-0.44	251.30	0
251	Acid Soluble Pb (ppm)	0405	0.6000	0.4000	0.7113	0.6480	0.0976	9	-0.17	251.99	0
251	Acid Soluble Pb (ppm)	0548	1.285	0.0700	0.7113	0.6480	0.0976	9	0.89	251.33	0
251	Acid Soluble Pb (ppm)	0035	1.365	0.1300	0.7113	0.6480	0.0976	9	1.01	251.30	0
251	Acid Soluble Pb (ppm)	0169	9.712	0.0340	0.7113	0.6480	0.0976	9	13.89	251.30	0
251	Acid Soluble Pb (ppm)	0515	21.41	1.406	0.7113	0.6480	0.0976	9	31.94	251.34	1
251	Acid Soluble Pb (ppm)	0255	0.0000	0.0000	0.7113	0.6480	0.0976	9		251.30	4
251	Acid Soluble Pb (ppm)	0527	< 0.0001		0.7113	0.6480	0.0976	9		251.33	5
251	Acid Soluble Pb (ppm)	0368	< 0.5		0.7113	0.6480	0.0976	9		251.34	5
251	Acid Soluble Pb (ppm)	0534	< 2		0.7113	0.6480	0.0976	9		251.00	5
251	Acid Soluble Pb (ppm)	0136	< 3		0.7113	0.6480	0.0976	9		251.33	5
261	Acid Soluble Mn (%)	0515	0.0027	0.0028	0.0196	0.0023	0.0007	11	-7.26	261.99	0
261	Acid Soluble Mn (%)	0553	0.0160	0.0000	0.0196	0.0023	0.0007	11	-1.56	261.00	0
261	Acid Soluble Mn (%)	0524	0.0184	0.0009	0.0196	0.0023	0.0007	11	-0.55	261.99	0
261	Acid Soluble Mn (%)	0494	0.0191	0.0020	0.0196	0.0023	0.0007	11	-0.23	261.35	0
261	Acid Soluble Mn (%)	0389	0.0199	0.0001	0.0196	0.0023	0.0007	11	0.10	261.99	0
261	Acid Soluble Mn (%)	0354	0.0200	0.0000	0.0196	0.0023	0.0007	11	0.16	261.30	0
261	Acid Soluble Mn (%)	0035	0.0205	0.0005	0.0196	0.0023	0.0007	11	0.35	261.30	0
261	Acid Soluble Mn (%)	0563	0.0205	0.0000	0.0196	0.0023	0.0007	11	0.37	261.35	0
261	Acid Soluble Mn (%)	0423	0.0215	0.0010	0.0196	0.0023	0.0007	11	0.80	261.34	0
261	Acid Soluble Mn (%)	0527	0.0219	0.0008	0.0196	0.0023	0.0007	11	0.97	261.35	0
261	Acid Soluble Mn (%)	0444	0.0220	0.0000	0.0196	0.0023	0.0007	11	1.02	261.30	0
261	Acid Soluble Mn (%)	0472	0.0000	0.0000	0.0196	0.0023	0.0007	11		261.35	4
281	Acid Soluble Hg (ppm)	0368	0.0001	0.0000	0.0020	0.0026	0.0007	3	-0.60	281.99	0
281	Acid Soluble Hg (ppm)	0524	0.0010	0.0002	0.0020	0.0026	0.0007	3	-0.32	281.99	0
281	Acid Soluble Hg (ppm)	0035	0.0050	0.0020	0.0020	0.0026	0.0007	3	0.92	281.99	0
281	Acid Soluble Hg (ppm)	0515	0.0000	0.0000	0.0020	0.0026	0.0007	3		281.30	4
281	Acid Soluble Hg (ppm)	0527	< 0.0001		0.0020	0.0026	0.0007	3		281.30	5
281	Acid Soluble Hg (ppm)	0572	< 0.007		0.0020	0.0026	0.0007	3		281.99	5
281	Acid Soluble Hg (ppm)	0563	< 0.01		0.0020	0.0026	0.0007	3		281.30	5
281	Acid Soluble Hg (ppm)	0405	< 0.01		0.0020	0.0026	0.0007	3		281.99	5
281	Acid Soluble Hg (ppm)	0534	< 0.05		0.0020	0.0026	0.0007	3		281.00	5
289	Acid Soluble Mo (ppm)	0485	3.045	0.0190	13.79	3.745	0.4207	13	-2.87	289.30	0
289	Acid Soluble Mo (ppm)	0402	10.65	0.9000	13.79	3.745	0.4207	13	-0.84	289.30	0
289	Acid Soluble Mo (ppm)	0035	10.65	0.7000	13.79	3.745	0.4207	13	-0.84	289.30	0
289	Acid Soluble Mo (ppm)	0255	11.38	0.2800	13.79	3.745	0.4207	13	-0.64	289.30	0
289	Acid Soluble Mo (ppm)	0524	12.48	0.0268	13.79	3.745	0.4207	13	-0.35	289.30	0
289	Acid Soluble Mo (ppm)	0563	12.88	0.0654	13.79	3.745	0.4207	13	-0.24	289.33	0
289	Acid Soluble Mo (ppm)	0136	13.15	1.300	13.79	3.745	0.4207	13	-0.17	289.33	0
289	Acid Soluble Mo (ppm)	0405	13.75	0.5000	13.79	3.745	0.4207	13	-0.01	289.99	0
289	Acid Soluble Mo (ppm)	0368	15.10	0.0000	13.79	3.745	0.4207	13	0.35	289.34	0
289	Acid Soluble Mo (ppm)	0501	16.00	0.0000	13.79	3.745	0.4207	13	0.59	289.34	0
289	Acid Soluble Mo (ppm)	0527	17.33	0.4577	13.79	3.745	0.4207	13	0.95	289.33	0
289	Acid Soluble Mo (ppm)	0548	18.28	0.3200	13.79	3.745	0.4207	13	1.20	289.33	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				
289	Acid Soluble Mo (ppm)	0494	23.45	0.9000	13.79	3.745	0.4207	13	2.58	289.33	0
289	Acid Soluble Mo (ppm)	0515	24.00	26.00	13.79	3.745	0.4207	13	2.73	289.34	1
291	Acid Soluble Ni (ppm)	0515	21.30	13.77	43.89	7.202	2.438	19	-3.14	291.34	0
291	Acid Soluble Ni (ppm)	0572	34.36	1.500	43.89	7.202	2.438	19	-1.32	291.99	0
291	Acid Soluble Ni (ppm)	0444	35.87	5.480	43.89	7.202	2.438	19	-1.11	291.30	0
291	Acid Soluble Ni (ppm)	0389	37.00	0.0000	43.89	7.202	2.438	19	-0.96	291.30	0
291	Acid Soluble Ni (ppm)	0485	37.40	0.3000	43.89	7.202	2.438	19	-0.90	291.30	0
291	Acid Soluble Ni (ppm)	0563	40.22	2.280	43.89	7.202	2.438	19	-0.51	291.33	0
291	Acid Soluble Ni (ppm)	0524	41.45	0.1140	43.89	7.202	2.438	19	-0.34	291.30	0
291	Acid Soluble Ni (ppm)	0521	41.68	0.0000	43.89	7.202	2.438	19	-0.31	291.30	0
291	Acid Soluble Ni (ppm)	0136	43.70	2.800	43.89	7.202	2.438	19	-0.03	291.33	0
291	Acid Soluble Ni (ppm)	0169	43.73	0.5690	43.89	7.202	2.438	19	-0.02	291.30	0
291	Acid Soluble Ni (ppm)	0027	46.00	2.000	43.89	7.202	2.438	19	0.29	291.30	0
291	Acid Soluble Ni (ppm)	0394	47.05	3.670	43.89	7.202	2.438	19	0.44	291.30	0
291	Acid Soluble Ni (ppm)	0035	47.40	5.800	43.89	7.202	2.438	19	0.49	291.30	0
291	Acid Soluble Ni (ppm)	0501	49.00	0.0000	43.89	7.202	2.438	19	0.71	291.34	0
291	Acid Soluble Ni (ppm)	0405	49.00	2.000	43.89	7.202	2.438	19	0.71	291.99	0
291	Acid Soluble Ni (ppm)	0368	49.70	1.200	43.89	7.202	2.438	19	0.81	291.34	0
291	Acid Soluble Ni (ppm)	0548	50.67	0.0900	43.89	7.202	2.438	19	0.94	291.33	0
291	Acid Soluble Ni (ppm)	0494	51.95	3.500	43.89	7.202	2.438	19	1.12	291.33	0
291	Acid Soluble Ni (ppm)	0527	55.42	1.243	43.89	7.202	2.438	19	1.60	291.33	0
291	Acid Soluble Ni (ppm)	0255	63.45	15.49	43.89	7.202	2.438	19	2.71	291.99	1
301	Acid Soluble Se (ppm)	0524	1.076	0.3362	3.023	1.963	0.3015	6	-0.88	301.30	0
301	Acid Soluble Se (ppm)	0563	1.858	0.0147	3.023	1.963	0.3015	6	-0.53	301.33	0
301	Acid Soluble Se (ppm)	0572	2.290	0.5200	3.023	1.963	0.3015	6	-0.33	301.99	0
301	Acid Soluble Se (ppm)	0501	3.150	0.9000	3.023	1.963	0.3015	6	0.06	301.30	0
301	Acid Soluble Se (ppm)	0548	3.800	0.0200	3.023	1.963	0.3015	6	0.35	301.33	0
301	Acid Soluble Se (ppm)	0527	6.174	0.0181	3.023	1.963	0.3015	6	1.43	301.33	0
301	Acid Soluble Se (ppm)	0515	13.99	17.30	3.023	1.963	0.3015	6	4.98	301.34	1
301	Acid Soluble Se (ppm)	0255	0.0000	0.0000	3.023	1.963	0.3015	6		301.99	4
301	Acid Soluble Se (ppm)	0368	< 0.9		3.023	1.963	0.3015	6		301.34	5
301	Acid Soluble Se (ppm)	0405	< 1		3.023	1.963	0.3015	6		301.99	5
311	Sodium (%)	0527	0.1875	0.0009	0.2010	0.0112	0.0020	5	-1.21	311.33	0
311	Sodium (%)	0423	0.1945	0.0070	0.2010	0.0112	0.0020	5	-0.58	311.33	0
311	Sodium (%)	0354	0.2000	0.0000	0.2010	0.0112	0.0020	5	-0.09	311.99	0
311	Sodium (%)	0035	0.2065	0.0010	0.2010	0.0112	0.0020	5	0.49	311.33	0
311	Sodium (%)	0553	0.2165	0.0010	0.2010	0.0112	0.0020	5	1.39	311.00	0
321	Acid Soluble Zn (%)	0515	0.0378	0.0027	0.0919	0.0144	0.0055	25	-3.76	321.99	0
321	Acid Soluble Zn (%)	0472	0.0400	0.0000	0.0919	0.0144	0.0055	25	-3.60	321.33	0
321	Acid Soluble Zn (%)	0501	0.0720	0.0000	0.0919	0.0144	0.0055	25	-1.38	321.99	0
321	Acid Soluble Zn (%)	0402	0.0750	0.0003	0.0919	0.0144	0.0055	25	-1.18	321.30	0
321	Acid Soluble Zn (%)	0572	0.0832	0.0097	0.0919	0.0144	0.0055	25	-0.61	321.99	0
321	Acid Soluble Zn (%)	0136	0.0835	0.0050	0.0919	0.0144	0.0055	25	-0.58	321.33	0
321	Acid Soluble Zn (%)	0494	0.0858	0.0121	0.0919	0.0144	0.0055	25	-0.42	321.33	0
321	Acid Soluble Zn (%)	0255	0.0860	0.0000	0.0919	0.0144	0.0055	25	-0.41	321.30	0
321	Acid Soluble Zn (%)	0027	0.0860	0.0060	0.0919	0.0144	0.0055	25	-0.41	321.99	0
321	Acid Soluble Zn (%)	0368	0.0884	0.0003	0.0919	0.0144	0.0055	25	-0.24	321.99	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				
321	Acid Soluble Zn (%)	0354	0.0900	0.0000	0.0919	0.0144	0.0055	25	-0.13	321.30	0
321	Acid Soluble Zn (%)	0043	0.0900	0.0060	0.0919	0.0144	0.0055	25	-0.13	321.33	0
321	Acid Soluble Zn (%)	0405	0.0901	0.0040	0.0919	0.0144	0.0055	25	-0.12	321.99	0
321	Acid Soluble Zn (%)	0524	0.0922	0.0002	0.0919	0.0144	0.0055	25	0.02	321.99	0
321	Acid Soluble Zn (%)	0394	0.0924	0.0010	0.0919	0.0144	0.0055	25	0.04	321.32	0
321	Acid Soluble Zn (%)	0389	0.0950	0.0100	0.0919	0.0144	0.0055	25	0.22	321.99	0
321	Acid Soluble Zn (%)	0534	0.0955	0.0090	0.0919	0.0144	0.0055	25	0.25	321.00	0
321	Acid Soluble Zn (%)	0444	0.1000	0.0000	0.0919	0.0144	0.0055	25	0.57	321.30	0
321	Acid Soluble Zn (%)	0553	0.1005	0.0010	0.0919	0.0144	0.0055	25	0.60	321.00	0
321	Acid Soluble Zn (%)	0035	0.1010	0.0100	0.0919	0.0144	0.0055	25	0.64	321.30	0
321	Acid Soluble Zn (%)	0563	0.1029	0.0041	0.0919	0.0144	0.0055	25	0.76	321.33	0
321	Acid Soluble Zn (%)	0527	0.1064	0.0012	0.0919	0.0144	0.0055	25	1.01	321.33	0
321	Acid Soluble Zn (%)	0234	0.1153	0.0039	0.0919	0.0144	0.0055	25	1.63	321.30	0
321	Acid Soluble Zn (%)	0548	0.1650	0.0500	0.0919	0.0144	0.0055	25	5.08	321.33	0
321	Acid Soluble Zn (%)	0423	0.1685	0.0010	0.0919	0.0144	0.0055	25	5.33	321.32	0
321	Acid Soluble Zn (%)	0485	734.3	32.10	0.0919	0.0144	0.0055	25	51027.10	321.00	2

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.