

Analyte Proficiency From All Labs
Sample # 220341
18-46-0 DAP

Magruder Fertilizer PT Program
Phosphorous Select PT Scheme
Statistical Summary

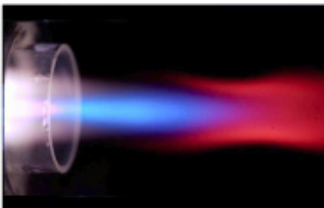
Analytes: 28
Labs Reporting: 32
Issue Date : 04/30/2022

Analyte Code	Analyte Sample # 220341	# 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 (%)	11	10	17.24	0.2813	17.17		0.0818	0.0323	0.48%		0.0560	2.41%
010	Total N (18%)	28	27	17.69	0.2806	17.70	0.6956	0.2713	0.0653	1.53%	0.91	0.1227	2.38%
020	Total P2O5 (%)	23	23	46.44	0.6461	46.49		0.4998	0.1303	1.07%		0.1715	1.47%
030	Citrate Insoluble P2O5 (%)	5	5	0.0760	0.0452	0.0760		0.0452	0.0253	59.47%		0.0240	5.89%
040	Indirect Available P2O5 (46%)	4	4	46.60	0.4207	46.60	1.0090	0.4207	0.2629	0.90%	0.97	0.1650	1.46%
041	Direct Available P2O5 (46%)	14	14	46.04	0.4930	46.08	1.0011	0.4906	0.1639	1.06%	1.14	0.2740	1.47%
048	Water Soluble P2O5 (%)	9	9	41.30	1.912	41.69		0.9586	0.3994	2.30%		0.1889	1.55%
050	Soluble K2O (%)	3	2	0.1543	0.0659	0.1907	0.4100	0.0273	0.0241	14.29%	0.15	0.0005	5.13%
060	Water (Free) (%)	3	3	2.173	0.7600	2.173		0.7600	0.5485	34.97%		0.1400	3.56%
101	Acid Soluble Ca (%)	4	4	0.3395	0.0792	0.3395	0.2170	0.0792	0.0495	23.33%	0.85	0.0048	4.71%
121	Acid Soluble Mg (%)	4	4	0.6400	0.0448	0.6400	0.2320	0.0448	0.0280	7.00%	0.45	0.0249	4.28%
148	Total S (%)	5	5	1.222	0.2762	1.222	0.2611	0.2762	0.1544	22.61%	2.46	0.0158	3.88%
151	Acid Soluble As (ppm)	14	12	9.149	7.761	7.303		5.800	2.093	79.41%		0.1804	11.86%
165	Acid Soluble B (%)	3	3	0.0375	0.0426	0.0375	0.0086	0.0425	0.0307	113.62%	11.50	0.0022	6.56%
181	Acid Soluble Cd (ppm)	13	12	6.716	11.41	3.140		1.617	0.5836	51.51%		0.2398	13.47%
191	Acid Soluble Cr (ppm)	13	13	106.0	49.75	103.1		5.552	1.925	5.38%		4.058	7.96%
202	Acid Soluble Co (ppm)	10	8	4.093	2.441	3.834	2.1501	0.4019	0.1776	10.48%	0.44	0.1968	13.07%
221	Acid Soluble Cu (%)	6	2	0.0038	0.0058	0.0063	0.0056	0.0087	0.0077	139.16%	3.60	0.0004	8.59%
241	Acid Soluble Fe (%)	4	4	1.002	0.2516	1.002	0.1052	0.2516	0.1573	25.11%	5.57	0.0066	4.00%
251	Acid Soluble Pb (ppm)	12	9	3.261	3.623	2.518		2.569	1.071	102.02%		0.6362	13.92%
261	Acid Soluble Mn (%)	4	4	0.0252	0.0088	0.0252	0.0075	0.0088	0.0055	34.93%	2.73	0.0003	6.96%
281	Acid Soluble Hg (ppm)	5	2	0.5161	0.8550	0.0397		0.0482	0.0426	121.46%		0.0026	22.00%
289	Acid Soluble Mo (ppm)	13	12	10.47	4.509	11.27	4.3812	2.468	0.8906	21.90%	1.31	0.5404	11.11%
291	Acid Soluble Ni (ppm)	13	13	14.97	4.720	15.99		2.048	0.7098	12.81%		0.8844	10.54%
301	Acid Soluble Se (ppm)	10	5	3.705	3.794	2.980		2.251	1.258	75.53%		0.2672	13.57%
311	Sodium (%)	3	3	0.4016	0.3797	0.4016	0.0452	0.3797	0.2740	94.54%	19.59	0.0082	4.59%
321	Acid Soluble Zn (%)	10	9	17.69	37.50	0.0102	0.0060	0.0048	0.0020	46.83%	1.86	0.1266	7.97%
325	Water Soluble Zn (%)	1		109.0									

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

Analyte Code	Analyte Sample # 220341	# 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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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: 28

Sample # 220341

Phosphorous Select PT Scheme

Labs Reporting: 32

18-46-0 DAP

Lab Values

Issue Date : 04/30/2022

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 (%)	0096	16.89	0.0100	17.17	0.0818	0.0560	10	-3.19	001.99	0
001	Ammoniacal N (%)	0581	17.10	0.0600	17.17	0.0818	0.0560	10	-0.75	001.99	0
001	Ammoniacal N (%)	0027	17.12	0.0000	17.17	0.0818	0.0560	10	-0.52	001.99	0
001	Ammoniacal N (%)	0582	17.13	0.0000	17.17	0.0818	0.0560	10	-0.41	001.99	0
001	Ammoniacal N (%)	0570	17.14	0.0700	17.17	0.0818	0.0560	10	-0.35	001.10	0
001	Ammoniacal N (%)	0493	17.20	0.1000	17.17	0.0818	0.0560	10	0.39	001.99	0
001	Ammoniacal N (%)	0586	17.20	0.1000	17.17	0.0818	0.0560	10	0.39	001.99	0
001	Ammoniacal N (%)	0513	17.22	0.0300	17.17	0.0818	0.0560	10	0.56	001.99	0
001	Ammoniacal N (%)	0593	17.23	0.1500	17.17	0.0818	0.0560	10	0.68	001.99	0
001	Ammoniacal N (%)	0405	17.45	0.0400	17.17	0.0818	0.0560	10	3.23	001.99	0
001	Ammoniacal N (%)	0368	17.99	0.6870	17.17	0.0818	0.0560	10	9.36	001.99	1
010	Total N (18%)	0185	17.28	0.1400	17.70	0.2713	0.1227	27	-1.56	010.60	0
010	Total N (18%)	0541	17.34	0.0100	17.70	0.2713	0.1227	27	-1.36	010.99	0
010	Total N (18%)	0450	17.35	0.1000	17.70	0.2713	0.1227	27	-1.31	010.60	0
010	Total N (18%)	0472	17.40	0.0900	17.70	0.2713	0.1227	27	-1.14	010.60	0
010	Total N (18%)	0534	17.40	0.2000	17.70	0.2713	0.1227	27	-1.12	010.60	0
010	Total N (18%)	0493	17.40	0.1000	17.70	0.2713	0.1227	27	-1.12	010.99	0
010	Total N (18%)	0421	17.55	0.3800	17.70	0.2713	0.1227	27	-0.57	010.60	0
010	Total N (18%)	0073	17.57	0.1600	17.70	0.2713	0.1227	27	-0.49	010.60	0
010	Total N (18%)	0561	17.60	0.0500	17.70	0.2713	0.1227	27	-0.40	010.60	0
010	Total N (18%)	0494	17.60	0.1200	17.70	0.2713	0.1227	27	-0.38	010.60	0
010	Total N (18%)	0516	17.65	0.1000	17.70	0.2713	0.1227	27	-0.20	010.60	0
010	Total N (18%)	0586	17.69	0.0500	17.70	0.2713	0.1227	27	-0.07	010.60	0
010	Total N (18%)	0593	17.69	0.2700	17.70	0.2713	0.1227	27	-0.07	010.60	0
010	Total N (18%)	0356	17.72	0.3260	17.70	0.2713	0.1227	27	0.06	010.60	0
010	Total N (18%)	0582	17.74	0.0400	17.70	0.2713	0.1227	27	0.13	010.60	0
010	Total N (18%)	0405	17.77	0.0300	17.70	0.2713	0.1227	27	0.22	010.60	0
010	Total N (18%)	0027	17.78	0.0100	17.70	0.2713	0.1227	27	0.26	010.60	0
010	Total N (18%)	0037	17.81	0.0140	17.70	0.2713	0.1227	27	0.38	010.60	0
010	Total N (18%)	0527	17.85	0.0340	17.70	0.2713	0.1227	27	0.53	010.60	0
010	Total N (18%)	0040	17.85	0.1000	17.70	0.2713	0.1227	27	0.54	010.60	0
010	Total N (18%)	0025	17.90	0.2500	17.70	0.2713	0.1227	27	0.70	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 (18%)	0531	17.95	0.1000	17.70	0.2713	0.1227	27	0.91	010.11	0
010	Total N (18%)	0531	17.95	0.1000	17.70	0.2713	0.1227	27	0.91	010.99	0
010	Total N (18%)	0547	17.99	0.0200	17.70	0.2713	0.1227	27	1.05	010.60	0
010	Total N (18%)	0576	18.00	0.0000	17.70	0.2713	0.1227	27	1.09	010.99	0
010	Total N (18%)	0211	18.10	0.2600	17.70	0.2713	0.1227	27	1.46	010.17	0
010	Total N (18%)	0368	18.36	0.2580	17.70	0.2713	0.1227	27	2.41	010.60	0
010	Total N (18%)	0042	17.10	0.6000	17.70	0.2713	0.1227	27	-2.23	010.60	1
020	Total P2O5 (%)	0472	44.38	0.0400	46.49	0.4998	0.1715	23	-4.23	020.50	0
020	Total P2O5 (%)	0450	45.51	0.4000	46.49	0.4998	0.1715	23	-1.97	020.50	0
020	Total P2O5 (%)	0027	45.76	0.2500	46.49	0.4998	0.1715	23	-1.48	020.20	0
020	Total P2O5 (%)	0576	46.00	0.0000	46.49	0.4998	0.1715	23	-0.99	020.99	0
020	Total P2O5 (%)	0527	46.16	0.3679	46.49	0.4998	0.1715	23	-0.66	020.50	0
020	Total P2O5 (%)	0534	46.19	0.0700	46.49	0.4998	0.1715	23	-0.62	020.20	0
020	Total P2O5 (%)	0570	46.36	0.2500	46.49	0.4998	0.1715	23	-0.28	020.10	0
020	Total P2O5 (%)	0593	46.36	0.0700	46.49	0.4998	0.1715	23	-0.28	020.20	0
020	Total P2O5 (%)	0581	46.37	0.1400	46.49	0.4998	0.1715	23	-0.25	020.20	0
020	Total P2O5 (%)	0493	46.40	0.1000	46.49	0.4998	0.1715	23	-0.19	020.20	0
020	Total P2O5 (%)	0493	46.42	0.0700	46.49	0.4998	0.1715	23	-0.16	020.10	0
020	Total P2O5 (%)	0561	46.47	0.1600	46.49	0.4998	0.1715	23	-0.05	020.20	0
020	Total P2O5 (%)	0368	46.51	0.5368	46.49	0.4998	0.1715	23	0.03	020.50	0
020	Total P2O5 (%)	0211	46.58	0.3000	46.49	0.4998	0.1715	23	0.17	020.10	0
020	Total P2O5 (%)	0586	46.64	0.1500	46.49	0.4998	0.1715	23	0.28	020.40	0
020	Total P2O5 (%)	0513	46.65	0.0300	46.49	0.4998	0.1715	23	0.30	020.99	0
020	Total P2O5 (%)	0582	46.68	0.0600	46.49	0.4998	0.1715	23	0.37	020.20	0
020	Total P2O5 (%)	0405	46.89	0.1500	46.49	0.4998	0.1715	23	0.78	020.20	0
020	Total P2O5 (%)	0547	46.90	0.0000	46.49	0.4998	0.1715	23	0.81	020.20	0
020	Total P2O5 (%)	0541	47.03	0.1000	46.49	0.4998	0.1715	23	1.07	020.20	0
020	Total P2O5 (%)	0356	47.13	0.0710	46.49	0.4998	0.1715	23	1.27	020.20	0
020	Total P2O5 (%)	0096	47.15	0.0600	46.49	0.4998	0.1715	23	1.31	020.40	0
020	Total P2O5 (%)	0516	47.60	0.5690	46.49	0.4998	0.1715	23	2.22	020.50	0
030	Citrate Insoluble P2O5 (%)	0593	0.0350	0.0300	0.0760	0.0452	0.0240	5	-0.91	030.50	0
030	Citrate Insoluble P2O5 (%)	0096	0.0400	0.0200	0.0760	0.0452	0.0240	5	-0.80	030.40	0
030	Citrate Insoluble P2O5 (%)	0582	0.0600	0.0400	0.0760	0.0452	0.0240	5	-0.35	030.50	0
030	Citrate Insoluble P2O5 (%)	0405	0.1050	0.0100	0.0760	0.0452	0.0240	5	0.64	030.20	0
030	Citrate Insoluble P2O5 (%)	0581	0.1400	0.0200	0.0760	0.0452	0.0240	5	1.42	030.50	0
040	Indirect Available P2O5 (46%)	0547	46.20	0.4000	46.60	0.4207	0.1650	4	-0.96	040.50	0
040	Indirect Available P2O5 (46%)	0593	46.32	0.0400	46.60	0.4207	0.1650	4	-0.67	040.50	0
040	Indirect Available P2O5 (46%)	0405	46.78	0.1400	46.60	0.4207	0.1650	4	0.42	040.99	0
040	Indirect Available P2O5 (46%)	0096	47.11	0.0800	46.60	0.4207	0.1650	4	1.21	040.40	0
041	Direct Available P2O5 (46%)	0472	45.08	0.0700	46.08	0.4906	0.2740	14	-2.04	041.21	0
041	Direct Available P2O5 (46%)	0421	45.17	0.4600	46.08	0.4906	0.2740	14	-1.85	041.50	0
041	Direct Available P2O5 (46%)	0025	45.55	1.100	46.08	0.4906	0.2740	14	-1.07	041.51	0
041	Direct Available P2O5 (46%)	0405	46.00	0.0500	46.08	0.4906	0.2740	14	-0.16	041.21	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 (46%)	0531	46.02	0.0100	46.08	0.4906	0.2740	14	-0.12	041.99	0
041	Direct Available P2O5 (46%)	0027	46.08	0.2500	46.08	0.4906	0.2740	14	0.00	041.20	0
041	Direct Available P2O5 (46%)	0040	46.10	1.000	46.08	0.4906	0.2740	14	0.05	041.10	0
041	Direct Available P2O5 (46%)	0405	46.12	0.0600	46.08	0.4906	0.2740	14	0.09	041.11	0
041	Direct Available P2O5 (46%)	0185	46.14	0.2000	46.08	0.4906	0.2740	14	0.13	041.11	0
041	Direct Available P2O5 (46%)	0037	46.26	0.4460	46.08	0.4906	0.2740	14	0.38	041.50	0
041	Direct Available P2O5 (46%)	0513	46.30	0.0100	46.08	0.4906	0.2740	14	0.45	041.11	0
041	Direct Available P2O5 (46%)	0494	46.34	0.0000	46.08	0.4906	0.2740	14	0.54	041.51	0
041	Direct Available P2O5 (46%)	0073	46.68	0.1200	46.08	0.4906	0.2740	14	1.23	041.11	0
041	Direct Available P2O5 (46%)	0494	46.81	0.0600	46.08	0.4906	0.2740	14	1.50	041.10	0
048	Water Soluble P2O5 (%)	0472	36.58	0.3300	41.69	0.9586	0.1889	9	-4.92	048.20	0
048	Water Soluble P2O5 (%)	0570	40.67	0.6300	41.69	0.9586	0.1889	9	-0.98	048.10	0
048	Water Soluble P2O5 (%)	0581	41.53	0.1800	41.69	0.9586	0.1889	9	-0.15	048.20	0
048	Water Soluble P2O5 (%)	0513	41.56	0.0500	41.69	0.9586	0.1889	9	-0.13	048.99	0
048	Water Soluble P2O5 (%)	0593	41.77	0.1600	41.69	0.9586	0.1889	9	0.08	048.20	0
048	Water Soluble P2O5 (%)	0582	41.98	0.1100	41.69	0.9586	0.1889	9	0.28	048.20	0
048	Water Soluble P2O5 (%)	0405	42.15	0.0100	41.69	0.9586	0.1889	9	0.44	048.20	0
048	Water Soluble P2O5 (%)	0561	42.16	0.0200	41.69	0.9586	0.1889	9	0.46	048.20	0
048	Water Soluble P2O5 (%)	0096	43.37	0.2100	41.69	0.9586	0.1889	9	1.62	048.40	0
050	Soluble K2O (%)	0527	0.1715	0.0009				2		050.99	0
050	Soluble K2O (%)	0096	0.2100	0.0000				2		050.99	0
050	Soluble K2O (%)	0516	0.0815	0.1630				2		050.99	4
060	Water (Free) (%)	0513	1.410	0.0200	2.173	0.7600	0.1400	3	-1.00	060.00	0
060	Water (Free) (%)	0493	2.180	0.1000	2.173	0.7600	0.1400	3	0.01	060.00	0
060	Water (Free) (%)	0096	2.930	0.3000	2.173	0.7600	0.1400	3	1.00	060.00	0
101	Acid Soluble Ca (%)	0527	0.2276	0.0096	0.3395	0.0792	0.0048	4	-1.41	101.33	0
101	Acid Soluble Ca (%)	0472	0.3500	0.0000	0.3395	0.0792	0.0048	4	0.13	101.33	0
101	Acid Soluble Ca (%)	0096	0.3675	0.0050	0.3395	0.0792	0.0048	4	0.35	101.30	0
101	Acid Soluble Ca (%)	0494	0.4130	0.0046	0.3395	0.0792	0.0048	4	0.93	101.33	0
121	Acid Soluble Mg (%)	0494	0.5883	0.0383	0.6400	0.0448	0.0249	4	-1.15	121.33	0
121	Acid Soluble Mg (%)	0472	0.6200	0.0000	0.6400	0.0448	0.0249	4	-0.45	121.33	0
121	Acid Soluble Mg (%)	0096	0.6620	0.0160	0.6400	0.0448	0.0249	4	0.49	121.30	0
121	Acid Soluble Mg (%)	0527	0.6897	0.0453	0.6400	0.0448	0.0249	4	1.11	121.33	0
148	Total S (%)	0527	0.7813	0.0098	1.222	0.2762	0.0158	5	-1.59	148.07	0
148	Total S (%)	0472	1.150	0.0000	1.222	0.2762	0.0158	5	-0.26	148.07	0
148	Total S (%)	0494	1.285	0.0470	1.222	0.2762	0.0158	5	0.23	148.07	0
148	Total S (%)	0096	1.420	0.0200	1.222	0.2762	0.0158	5	0.72	148.99	0
148	Total S (%)	0516	1.472	0.0020	1.222	0.2762	0.0158	5	0.91	148.99	0
151	Acid Soluble As (ppm)	0582	0.0300	0.0400	7.303	5.800	0.1804	12	-1.25	151.30	0
151	Acid Soluble As (ppm)	0593	0.1230	0.0000	7.303	5.800	0.1804	12	-1.24	151.30	0
151	Acid Soluble As (ppm)	0220	3.400	0.0000	7.303	5.800	0.1804	12	-0.67	151.99	0
151	Acid Soluble As (ppm)	0220	3.700	0.4000	7.303	5.800	0.1804	12	-0.62	151.32	0
151	Acid Soluble As (ppm)	0096	4.250	0.1000	7.303	5.800	0.1804	12	-0.53	151.30	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				
151	Acid Soluble As (ppm)	0368	4.400	0.0000	7.303	5.800	0.1804	12	-0.50	151.34	0
151	Acid Soluble As (ppm)	0037	10.89	0.2050	7.303	5.800	0.1804	12	0.62	151.33	0
151	Acid Soluble As (ppm)	0586	11.00	0.0000	7.303	5.800	0.1804	12	0.64	151.30	0
151	Acid Soluble As (ppm)	0405	11.00	0.0000	7.303	5.800	0.1804	12	0.64	151.32	0
151	Acid Soluble As (ppm)	0541	12.15	0.1000	7.303	5.800	0.1804	12	0.84	151.30	0
151	Acid Soluble As (ppm)	0450	12.85	0.3000	7.303	5.800	0.1804	12	0.96	151.30	0
151	Acid Soluble As (ppm)	0527	13.85	1.020	7.303	5.800	0.1804	12	1.13	151.33	0
151	Acid Soluble As (ppm)	0494	30.45	3.500	7.303	5.800	0.1804	12	3.99	151.33	1
151	Acid Soluble As (ppm)	0027	< 10		7.303	5.800	0.1804	12		151.30	5
165	Acid Soluble B (%)	0527	0.0064	0.0002	0.0375	0.0425	0.0022	3	-0.73	165.99	0
165	Acid Soluble B (%)	0472	0.0200	0.0000	0.0375	0.0425	0.0022	3	-0.41	165.99	0
165	Acid Soluble B (%)	0494	0.0860	0.0065	0.0375	0.0425	0.0022	3	1.14	165.30	0
181	Acid Soluble Cd (ppm)	0593	0.0270	0.0001	3.140	1.617	0.2398	12	-1.92	181.30	0
181	Acid Soluble Cd (ppm)	0534	2.060	0.2400	3.140	1.617	0.2398	12	-0.67	181.00	0
181	Acid Soluble Cd (ppm)	0220	2.350	0.1000	3.140	1.617	0.2398	12	-0.49	181.99	0
181	Acid Soluble Cd (ppm)	0220	2.350	0.3000	3.140	1.617	0.2398	12	-0.49	181.32	0
181	Acid Soluble Cd (ppm)	0368	2.550	0.1000	3.140	1.617	0.2398	12	-0.36	181.34	0
181	Acid Soluble Cd (ppm)	0037	2.879	0.0440	3.140	1.617	0.2398	12	-0.16	181.33	0
181	Acid Soluble Cd (ppm)	0527	2.998	0.1434	3.140	1.617	0.2398	12	-0.09	181.33	0
181	Acid Soluble Cd (ppm)	0405	3.000	0.0000	3.140	1.617	0.2398	12	-0.09	181.32	0
181	Acid Soluble Cd (ppm)	0494	3.145	0.0900	3.140	1.617	0.2398	12	0.00	181.33	0
181	Acid Soluble Cd (ppm)	0586	4.500	1.000	3.140	1.617	0.2398	12	0.84	181.30	0
181	Acid Soluble Cd (ppm)	0541	7.755	0.0600	3.140	1.617	0.2398	12	2.85	181.30	0
181	Acid Soluble Cd (ppm)	0096	43.70	0.8000	3.140	1.617	0.2398	12	25.08	181.30	0
181	Acid Soluble Cd (ppm)	0027	< 10		3.140	1.617	0.2398	12		181.30	5
191	Acid Soluble Cr (ppm)	0593	1.095	0.0900	103.1	5.552	4.058	13	-18.38	191.30	0
191	Acid Soluble Cr (ppm)	0027	97.50	5.000	103.1	5.552	4.058	13	-1.01	191.30	0
191	Acid Soluble Cr (ppm)	0368	99.25	5.500	103.1	5.552	4.058	13	-0.70	191.34	0
191	Acid Soluble Cr (ppm)	0037	99.46	1.858	103.1	5.552	4.058	13	-0.66	191.33	0
191	Acid Soluble Cr (ppm)	0220	100.5	1.000	103.1	5.552	4.058	13	-0.47	191.99	0
191	Acid Soluble Cr (ppm)	0220	101.7	10.60	103.1	5.552	4.058	13	-0.26	191.32	0
191	Acid Soluble Cr (ppm)	0527	102.1	0.2098	103.1	5.552	4.058	13	-0.19	191.33	0
191	Acid Soluble Cr (ppm)	0405	105.0	2.000	103.1	5.552	4.058	13	0.34	191.32	0
191	Acid Soluble Cr (ppm)	0586	105.5	3.000	103.1	5.552	4.058	13	0.43	191.30	0
191	Acid Soluble Cr (ppm)	0494	106.5	7.000	103.1	5.552	4.058	13	0.61	191.33	0
191	Acid Soluble Cr (ppm)	0541	108.0	2.000	103.1	5.552	4.058	13	0.88	191.30	0
191	Acid Soluble Cr (ppm)	0450	109.0	10.00	103.1	5.552	4.058	13	1.06	191.30	0
191	Acid Soluble Cr (ppm)	0096	241.9	4.500	103.1	5.552	4.058	13	24.98	191.30	0
202	Acid Soluble Co (ppm)	0450	3.050	0.3000	3.834	0.4019	0.1968	8	-1.78	202.30	0
202	Acid Soluble Co (ppm)	0527	3.552	0.1060	3.834	0.4019	0.1968	8	-0.64	202.33	0
202	Acid Soluble Co (ppm)	0220	3.700	0.0000	3.834	0.4019	0.1968	8	-0.30	202.99	0
202	Acid Soluble Co (ppm)	0220	3.800	0.4000	3.834	0.4019	0.1968	8	-0.08	202.32	0
202	Acid Soluble Co (ppm)	0037	3.950	0.0680	3.834	0.4019	0.1968	8	0.26	202.33	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				
202	Acid Soluble Co (ppm)	0586	4.000	0.0000	3.834	0.4019	0.1968	8	0.38	202.30	0
202	Acid Soluble Co (ppm)	0405	4.000	0.0000	3.834	0.4019	0.1968	8	0.38	202.32	0
202	Acid Soluble Co (ppm)	0368	4.850	0.7000	3.834	0.4019	0.1968	8	2.31	202.34	0
202	Acid Soluble Co (ppm)	0593	< 0.03		3.834	0.4019	0.1968	8		202.30	5
202	Acid Soluble Co (ppm)	0027	< 10		3.834	0.4019	0.1968	8		202.30	5
221	Acid Soluble Cu (%)	0527	0.0001	0.0000				2		221.33	0
221	Acid Soluble Cu (%)	0541	0.0124	0.0008				2		221.33	0
221	Acid Soluble Cu (%)	0368	0.0001	0.0001				2		221.99	4
221	Acid Soluble Cu (%)	0405	< 0.0002					2		221.32	5
221	Acid Soluble Cu (%)	0494	< 0.0002					2		221.33	5
221	Acid Soluble Cu (%)	0586	< 0.01					2		221.99	5
241	Acid Soluble Fe (%)	0096	0.6250	0.0100	1.002	0.2516	0.0066	4	-1.50	241.30	0
241	Acid Soluble Fe (%)	0527	1.115	0.0017	1.002	0.2516	0.0066	4	0.45	241.33	0
241	Acid Soluble Fe (%)	0494	1.123	0.0048	1.002	0.2516	0.0066	4	0.48	241.33	0
241	Acid Soluble Fe (%)	0472	1.145	0.0100	1.002	0.2516	0.0066	4	0.57	241.33	0
251	Acid Soluble Pb (ppm)	0593	0.0166	0.0003	2.518	2.569	0.6362	9	-0.97	251.30	0
251	Acid Soluble Pb (ppm)	0450	1.100	0.0000	2.518	2.569	0.6362	9	-0.55	251.30	0
251	Acid Soluble Pb (ppm)	0220	1.500	0.6000	2.518	2.569	0.6362	9	-0.40	251.32	0
251	Acid Soluble Pb (ppm)	0220	1.550	0.3000	2.518	2.569	0.6362	9	-0.38	251.99	0
251	Acid Soluble Pb (ppm)	0527	1.770	0.0325	2.518	2.569	0.6362	9	-0.29	251.33	0
251	Acid Soluble Pb (ppm)	0037	1.986	1.715	2.518	2.569	0.6362	9	-0.21	251.33	0
251	Acid Soluble Pb (ppm)	0586	2.000	2.000	2.518	2.569	0.6362	9	-0.20	251.30	0
251	Acid Soluble Pb (ppm)	0405	7.500	1.000	2.518	2.569	0.6362	9	1.94	251.32	0
251	Acid Soluble Pb (ppm)	0541	9.839	0.0780	2.518	2.569	0.6362	9	2.85	251.30	0
251	Acid Soluble Pb (ppm)	0368	< 0.6		2.518	2.569	0.6362	9		251.34	5
251	Acid Soluble Pb (ppm)	0494	< 1.27		2.518	2.569	0.6362	9		251.33	5
251	Acid Soluble Pb (ppm)	0027	< 10		2.518	2.569	0.6362	9		251.30	5
261	Acid Soluble Mn (%)	0096	0.0120	0.0000	0.0252	0.0088	0.0003	4	-1.50	261.30	0
261	Acid Soluble Mn (%)	0527	0.0290	0.0008	0.0252	0.0088	0.0003	4	0.43	261.35	0
261	Acid Soluble Mn (%)	0494	0.0297	0.0004	0.0252	0.0088	0.0003	4	0.51	261.35	0
261	Acid Soluble Mn (%)	0472	0.0300	0.0000	0.0252	0.0088	0.0003	4	0.55	261.35	0
281	Acid Soluble Hg (ppm)	0368	0.0056	0.0034				2		281.99	0
281	Acid Soluble Hg (ppm)	0593	0.0738	0.0017				2		281.30	0
281	Acid Soluble Hg (ppm)	0527	< 0.001					2		281.30	5
281	Acid Soluble Hg (ppm)	0450	< 0.5					2		281.30	5
281	Acid Soluble Hg (ppm)	0405	< 2					2		281.30	5
289	Acid Soluble Mo (ppm)	0593	0.1590	0.0140	11.27	2.468	0.5404	12	-4.50	289.30	0
289	Acid Soluble Mo (ppm)	0096	2.850	1.900	11.27	2.468	0.5404	12	-3.41	289.30	0
289	Acid Soluble Mo (ppm)	0541	10.19	0.6400	11.27	2.468	0.5404	12	-0.44	289.30	0
289	Acid Soluble Mo (ppm)	0450	10.60	0.2000	11.27	2.468	0.5404	12	-0.27	289.30	0
289	Acid Soluble Mo (ppm)	0220	11.30	0.2000	11.27	2.468	0.5404	12	0.01	289.99	0
289	Acid Soluble Mo (ppm)	0368	11.40	2.200	11.27	2.468	0.5404	12	0.05	289.34	0
289	Acid Soluble Mo (ppm)	0527	11.52	0.2234	11.27	2.468	0.5404	12	0.10	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)	0220	11.65	0.9000	11.27	2.468	0.5404	12	0.15	289.32	0
289	Acid Soluble Mo (ppm)	0037	11.78	0.0070	11.27	2.468	0.5404	12	0.20	289.33	0
289	Acid Soluble Mo (ppm)	0405	13.00	0.0000	11.27	2.468	0.5404	12	0.70	289.32	0
289	Acid Soluble Mo (ppm)	0494	13.70	0.2000	11.27	2.468	0.5404	12	0.98	289.33	0
289	Acid Soluble Mo (ppm)	0586	18.00	0.0000	11.27	2.468	0.5404	12	2.73	289.30	0
289	Acid Soluble Mo (ppm)	0027	< 10		11.27	2.468	0.5404	12		289.30	5
291	Acid Soluble Ni (ppm)	0593	0.2600	0.0200	15.99	2.048	0.8844	13	-7.68	291.30	0
291	Acid Soluble Ni (ppm)	0096	12.35	0.5000	15.99	2.048	0.8844	13	-1.78	291.30	0
291	Acid Soluble Ni (ppm)	0586	14.50	3.000	15.99	2.048	0.8844	13	-0.73	291.30	0
291	Acid Soluble Ni (ppm)	0450	15.00	0.0000	15.99	2.048	0.8844	13	-0.48	291.30	0
291	Acid Soluble Ni (ppm)	0527	15.99	0.5314	15.99	2.048	0.8844	13	0.00	291.33	0
291	Acid Soluble Ni (ppm)	0220	16.15	1.900	15.99	2.048	0.8844	13	0.08	291.32	0
291	Acid Soluble Ni (ppm)	0220	16.15	0.3000	15.99	2.048	0.8844	13	0.08	291.99	0
291	Acid Soluble Ni (ppm)	0037	16.17	0.1460	15.99	2.048	0.8844	13	0.09	291.33	0
291	Acid Soluble Ni (ppm)	0368	16.45	0.9000	15.99	2.048	0.8844	13	0.23	291.34	0
291	Acid Soluble Ni (ppm)	0027	17.00	2.000	15.99	2.048	0.8844	13	0.49	291.30	0
291	Acid Soluble Ni (ppm)	0405	17.50	1.000	15.99	2.048	0.8844	13	0.74	291.32	0
291	Acid Soluble Ni (ppm)	0494	18.15	1.100	15.99	2.048	0.8844	13	1.06	291.33	0
291	Acid Soluble Ni (ppm)	0541	18.95	0.1000	15.99	2.048	0.8844	13	1.45	291.30	0
301	Acid Soluble Se (ppm)	0220	0.6000	0.0000	2.980	2.251	0.2672	5	-0.92	301.99	0
301	Acid Soluble Se (ppm)	0220	0.6500	0.1000	2.980	2.251	0.2672	5	-0.90	301.32	0
301	Acid Soluble Se (ppm)	0037	3.826	0.8550	2.980	2.251	0.2672	5	0.33	301.33	0
301	Acid Soluble Se (ppm)	0527	4.210	0.3708	2.980	2.251	0.2672	5	0.48	301.33	0
301	Acid Soluble Se (ppm)	0541	5.615	0.0100	2.980	2.251	0.2672	5	1.02	301.30	0
301	Acid Soluble Se (ppm)	0586	< 0.1		2.980	2.251	0.2672	5		301.99	5
301	Acid Soluble Se (ppm)	0494	< 0.95		2.980	2.251	0.2672	5		301.33	5
301	Acid Soluble Se (ppm)	0368	< 1.1		2.980	2.251	0.2672	5		301.34	5
301	Acid Soluble Se (ppm)	0027	< 10		2.980	2.251	0.2672	5		301.30	5
301	Acid Soluble Se (ppm)	0405	< 10		2.980	2.251	0.2672	5		301.32	5
311	Sodium (%)	0527	0.1775	0.0019	0.4016	0.3797	0.0082	3	-0.59	311.33	0
311	Sodium (%)	0494	0.1874	0.0028	0.4016	0.3797	0.0082	3	-0.56	311.33	0
311	Sodium (%)	0096	0.8400	0.0200	0.4016	0.3797	0.0082	3	1.15	311.99	0
321	Acid Soluble Zn (%)	0582	0.0050	0.0000	0.0102	0.0048	0.1266	9	-1.01	321.33	0
321	Acid Soluble Zn (%)	0368	0.0067	0.0001	0.0102	0.0048	0.1266	9	-0.69	321.99	0
321	Acid Soluble Zn (%)	0527	0.0080	0.0001	0.0102	0.0048	0.1266	9	-0.44	321.33	0
321	Acid Soluble Zn (%)	0405	0.0085	0.0001	0.0102	0.0048	0.1266	9	-0.35	321.32	0
321	Acid Soluble Zn (%)	0472	0.0100	0.0000	0.0102	0.0048	0.1266	9	-0.05	321.33	0
321	Acid Soluble Zn (%)	0593	0.0100	0.0000	0.0102	0.0048	0.1266	9	-0.05	321.33	0
321	Acid Soluble Zn (%)	0586	0.0100	0.0000	0.0102	0.0048	0.1266	9	-0.05	321.99	0
321	Acid Soluble Zn (%)	0096	0.0168	0.0019	0.0102	0.0048	0.1266	9	1.25	321.30	0
321	Acid Soluble Zn (%)	0037	79.87	1.137	0.0102	0.0048	0.1266	9	15358.06	321.33	0
321	Acid Soluble Zn (%)	0494	97.00	14.00	0.0102	0.0048	0.1266	9	18652.73	321.33	1
325	Water Soluble Zn (%)	0541	109.0	0.1000				1		325.30	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				

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.