

magruder fertilizer

check sample program



STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 210112

Micronutrients

Statistical Summary

Analytes: 32

Labs Reporting: 84

Issue Date : 02/28/2021

Analyte Code	Analyte Sample # 210112	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	Analyte IA Ratio	Average Range (R-bar)	Horwitz %RSD
001	Ammoniacal N (%)	2	2	1.840	0.4313								
010	Total N (%)	9	9	2.101	0.0444	2.101	0.4900	0.0503	0.0210	2.39%	0.24	0.0284	3.58%
020	Total P2O5 (%)	5	5	0.0595	0.0285	0.0595		0.0285	0.0159	47.90%		0.0028	6.12%
041	Direct Available P2O5 (%)	5	5	0.0774	0.0421	0.0774	0.6700	0.0421	0.0235	54.40%	0.15	0.0008	5.88%
050	Soluble K2O (%)	12	11	0.7419	0.0714	0.7392	0.4100	0.0805	0.0303	10.89%	0.46	0.0108	4.19%
060	Water (Free) (%)	1		2.633									
101	Acid Soluble Ca (5%)	70	67	6.258	0.8234	6.236	0.5118	0.8214	0.1254	13.17%	3.74	0.1125	3.04%
121	Acid Soluble Mg (9.5%)	22	21	0.3735	0.1857	0.3610	0.2181	0.1753	0.0478	48.56%	1.87	0.0194	4.66%
143	Elemental S (%)	7	7	8.490	3.566	9.495		1.257	0.5937	13.23%		0.1815	2.85%
145	Sulfate S, HCl soluble (%)	9	9	9.531	0.2243	9.531		0.2544	0.1060	2.67%		0.2022	2.85%
146	Total S in Liquid (%)	1		9.500									
148	Total S (%)	53	50	9.727	1.149	9.773	0.6887	0.3779	0.0668	3.87%	1.28	0.1442	2.84%
149	S - HNO3 soluble (%)	5	5	9.575	0.4829	9.575		0.4829	0.2699	5.04%		0.1059	2.85%
151	Acid Soluble As (ppm)	19	18	4.367	2.236	3.893		0.6956	0.2049	17.87%		0.6056	13.04%
165	Acid Soluble B (1.25%)	56	54	1.186	0.1971	1.155	0.1763	0.0896	0.0152	7.75%	1.18	0.0406	3.91%
171	Water Soluble B (%)	7	7	1.196	0.1036	1.200		0.1083	0.0512	9.03%		0.0411	3.89%
181	Acid Soluble Cd (ppm)	22	22	11.63	2.088	11.66		2.232	0.5948	19.14%		1.149	11.05%
190	Water Soluble Cl (%)	1		0.3300									
191	Acid Soluble Cr (ppm)	20	20	35.11	11.24	35.00		12.51	3.498	35.75%		1.849	9.37%
202	Acid Soluble Co (ppm)	20	19	20.47	4.576	20.96	7.2881	4.236	1.215	20.21%	1.35	1.096	10.12%
221	Acid Soluble Cu (%)	32	30	0.0192	0.0061	0.0196	0.0070	0.0020	0.0005	10.38%	0.68	0.0012	7.23%
241	Acid Soluble Fe (%)	18	18	0.8227	0.1162	0.8234	0.0873	0.1302	0.0384	15.82%	3.47	0.0428	4.12%
251	Acid Soluble Pb (ppm)	23	23	140.6	22.65	142.6		20.08	5.233	14.08%		9.440	7.58%
261	Acid Soluble Mn (5%)	66	63	5.270	0.7063	5.191	0.5241	0.2963	0.0467	5.71%	1.32	0.0938	3.12%
271	Water Soluble Mn (%)	1		5.200									
281	Acid Soluble Hg (ppm)	14	12	1.260	0.5617	1.307		0.3539	0.1277	27.07%		0.1248	15.36%
289	Acid Soluble Mo (ppm)	16	14	6.075	2.725	5.986	2.7957	3.191	1.066	53.30%	2.66	0.5803	12.22%
291	Acid Soluble Ni (ppm)	22	22	145.5	27.25	147.9		25.85	6.890	17.48%		10.000	7.54%
301	Acid Soluble Se (ppm)	14	11	12.99	15.20	15.33		18.39	6.931	119.94%		0.7560	10.61%
311	Sodium (%)	9	8	1.329	0.1480	1.308	0.1358	0.1623	0.0717	12.41%	2.79	0.0149	3.84%
321	Acid Soluble Zn (7.5%)	70	68	8.657	1.194	8.646	0.8696	0.9915	0.1503	11.47%	2.66	0.2442	2.89%
325	Water Soluble Zn (%)	4	4	7.786	0.6541	7.786		0.6541	0.4088	8.40%		0.1372	2.94%

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

Analyte Code	Analyte Sample # 210112	# 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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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.

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STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs

Sample # 210112

Micronutrients

Lab Values

Analytes: 32

Labs Reporting: 84

Issue Date : 02/28/2021

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 (%)	0524	1.535	0.1100				2		001.99	0
001	Ammoniacal N (%)	0553	2.145	0.0700				2		001.99	0
010	Total N (%)	0568	2.040	0.0800	2.101	0.0503	0.0284	9	-1.12	010.12	0
010	Total N (%)	0523	2.050	0.1000	2.101	0.0503	0.0284	9	-0.94	010.60	0
010	Total N (%)	0421	2.065	0.0300	2.101	0.0503	0.0284	9	-0.66	010.60	0
010	Total N (%)	0524	2.090	0.0076	2.101	0.0503	0.0284	9	-0.19	010.99	0
010	Total N (%)	0472	2.096	0.0040	2.101	0.0503	0.0284	9	-0.09	010.60	0
010	Total N (%)	0527	2.120	0.0040	2.101	0.0503	0.0284	9	0.35	010.60	0
010	Total N (%)	0354	2.135	0.0100	2.101	0.0503	0.0284	9	0.62	010.60	0
010	Total N (%)	0521	2.142	0.0000	2.101	0.0503	0.0284	9	0.76	010.60	0
010	Total N (%)	0325	2.170	0.0200	2.101	0.0503	0.0284	9	1.27	010.60	0
020	Total P2O5 (%)	0515	0.0212	0.0021	0.0595	0.0285	0.0028	5	-1.35	020.99	0
020	Total P2O5 (%)	0524	0.0531	0.0014	0.0595	0.0285	0.0028	5	-0.22	020.50	0
020	Total P2O5 (%)	0389	0.0550	0.0100	0.0595	0.0285	0.0028	5	-0.16	020.50	0
020	Total P2O5 (%)	0527	0.0683	0.0006	0.0595	0.0285	0.0028	5	0.31	020.50	0
020	Total P2O5 (%)	0523	0.1000	0.0000	0.0595	0.0285	0.0028	5	1.42	020.50	0
041	Direct Available P2O5 (%)	0553	0.0225	0.0010	0.0774	0.0421	0.0008	5	-1.30	041.20	0
041	Direct Available P2O5 (%)	0568	0.0500	0.0000	0.0774	0.0421	0.0008	5	-0.65	041.21	0
041	Direct Available P2O5 (%)	0354	0.0845	0.0030	0.0774	0.0421	0.0008	5	0.17	041.21	0
041	Direct Available P2O5 (%)	0325	0.1000	0.0000	0.0774	0.0421	0.0008	5	0.54	041.50	0
041	Direct Available P2O5 (%)	0472	0.1300	0.0000	0.0774	0.0421	0.0008	5	1.25	041.21	0
050	Soluble K2O (%)	0423	0.6280	0.0120	0.7392	0.0805	0.0108	11	-1.38	050.52	0
050	Soluble K2O (%)	0354	0.6515	0.0130	0.7392	0.0805	0.0108	11	-1.09	050.52	0
050	Soluble K2O (%)	0368	0.6739	0.0051	0.7392	0.0805	0.0108	11	-0.81	050.51	0
050	Soluble K2O (%)	0523	0.7000	0.0000	0.7392	0.0805	0.0108	11	-0.49	050.99	0
050	Soluble K2O (%)	0553	0.7440	0.0180	0.7392	0.0805	0.0108	11	0.06	050.99	0
050	Soluble K2O (%)	0568	0.7450	0.0100	0.7392	0.0805	0.0108	11	0.07	050.51	0
050	Soluble K2O (%)	0521	0.7472	0.0000	0.7392	0.0805	0.0108	11	0.10	050.99	0
050	Soluble K2O (%)	0389	0.7800	0.0200	0.7392	0.0805	0.0108	11	0.51	050.99	0
050	Soluble K2O (%)	0524	0.7841	0.0179	0.7392	0.0805	0.0108	11	0.56	050.99	0
050	Soluble K2O (%)	0527	0.8176	0.0126	0.7392	0.0805	0.0108	11	0.97	050.99	0
050	Soluble K2O (%)	0563	0.8816	0.0103	0.7392	0.0805	0.0108	11	1.77	050.99	0
050	Soluble K2O (%)	0325	0.7500	0.1000	0.7392	0.0805	0.0108	11	0.13	050.99	1
060	Water (Free) (%)	0510	2.633	0.0485				1		060.99	0
101	Acid Soluble Ca (5%)	0476	4.364†	0.0416	6.236	0.8214	0.1125	67	-2.28	101.70	0
101	Acid Soluble Ca (5%)	0510	4.792†	0.0754	6.236	0.8214	0.1125	67	-1.76	101.70	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 (5%)	0540	4.955†	0.0300	6.236	0.8214	0.1125	67	-1.56	101.99	0
101	Acid Soluble Ca (5%)	0516	4.971†	0.0450	6.236	0.8214	0.1125	67	-1.54	101.99	0
101	Acid Soluble Ca (5%)	0042	4.975†	0.1700	6.236	0.8214	0.1125	67	-1.54	101.99	0
101	Acid Soluble Ca (5%)	0549	4.985†	0.2100	6.236	0.8214	0.1125	67	-1.52	101.70	0
101	Acid Soluble Ca (5%)	0551	5.100†	0.2000	6.236	0.8214	0.1125	67	-1.38	101.00	0
101	Acid Soluble Ca (5%)	0535	5.150†	0.1000	6.236	0.8214	0.1125	67	-1.32	101.00	0
101	Acid Soluble Ca (5%)	0539	5.150†	0.1000	6.236	0.8214	0.1125	67	-1.32	101.00	0
101	Acid Soluble Ca (5%)	0558	5.160†	0.0000	6.236	0.8214	0.1125	67	-1.31	101.99	0
101	Acid Soluble Ca (5%)	0025	5.200†	0.0200	6.236	0.8214	0.1125	67	-1.26	101.33	0
101	Acid Soluble Ca (5%)	0035	5.220†	0.1000	6.236	0.8214	0.1125	67	-1.24	101.30	0
101	Acid Soluble Ca (5%)	0537	5.325†	0.1500	6.236	0.8214	0.1125	67	-1.11	101.70	0
101	Acid Soluble Ca (5%)	0534	5.385†	0.1900	6.236	0.8214	0.1125	67	-1.04	101.03	0
101	Acid Soluble Ca (5%)	0532	5.420†	0.0800	6.236	0.8214	0.1125	67	-0.99	101.70	0
101	Acid Soluble Ca (5%)	0255	5.470†	0.4810	6.236	0.8214	0.1125	67	-0.93	101.30	0
101	Acid Soluble Ca (5%)	0486	5.610†	0.1400	6.236	0.8214	0.1125	67	-0.76	101.33	0
101	Acid Soluble Ca (5%)	0506	5.620†	0.0000	6.236	0.8214	0.1125	67	-0.75	101.99	0
101	Acid Soluble Ca (5%)	0422	5.625†	0.1500	6.236	0.8214	0.1125	67	-0.74	101.31	0
101	Acid Soluble Ca (5%)	0073	5.810	0.0000	6.236	0.8214	0.1125	67	-0.52	101.30	0
101	Acid Soluble Ca (5%)	0553	5.825	0.1500	6.236	0.8214	0.1125	67	-0.50	101.00	0
101	Acid Soluble Ca (5%)	0521	5.987	0.0000	6.236	0.8214	0.1125	67	-0.30	101.32	0
101	Acid Soluble Ca (5%)	0234	6.065	0.0100	6.236	0.8214	0.1125	67	-0.21	101.30	0
101	Acid Soluble Ca (5%)	0231	6.170	0.0200	6.236	0.8214	0.1125	67	-0.08	101.31	0
101	Acid Soluble Ca (5%)	0538	6.225	0.1500	6.236	0.8214	0.1125	67	-0.01	101.99	0
101	Acid Soluble Ca (5%)	0561	6.245	0.0500	6.236	0.8214	0.1125	67	0.01	101.99	0
101	Acid Soluble Ca (5%)	0177	6.304	0.1334	6.236	0.8214	0.1125	67	0.08	101.33	0
101	Acid Soluble Ca (5%)	0292	6.310	0.0000	6.236	0.8214	0.1125	67	0.09	101.33	0
101	Acid Soluble Ca (5%)	0389	6.310	0.1000	6.236	0.8214	0.1125	67	0.09	101.99	0
101	Acid Soluble Ca (5%)	0055	6.350	0.0600	6.236	0.8214	0.1125	67	0.14	101.33	0
101	Acid Soluble Ca (5%)	0040	6.375	0.0100	6.236	0.8214	0.1125	67	0.17	101.33	0
101	Acid Soluble Ca (5%)	0472	6.390	0.0000	6.236	0.8214	0.1125	67	0.19	101.30	0
101	Acid Soluble Ca (5%)	0034	6.479	0.0980	6.236	0.8214	0.1125	67	0.30	101.33	0
101	Acid Soluble Ca (5%)	0451	6.509	0.0740	6.236	0.8214	0.1125	67	0.33	101.30	0
101	Acid Soluble Ca (5%)	0368	6.513	0.0420	6.236	0.8214	0.1125	67	0.34	101.33	0
101	Acid Soluble Ca (5%)	0405	6.515	0.3300	6.236	0.8214	0.1125	67	0.34	101.99	0
101	Acid Soluble Ca (5%)	0527	6.523	0.1486	6.236	0.8214	0.1125	67	0.35	101.33	0
101	Acid Soluble Ca (5%)	0220	6.530	0.2000	6.236	0.8214	0.1125	67	0.36	101.32	0
101	Acid Soluble Ca (5%)	0390	6.535	0.1500	6.236	0.8214	0.1125	67	0.36	101.99	0
101	Acid Soluble Ca (5%)	0485	6.579	0.0022	6.236	0.8214	0.1125	67	0.42	101.00	0
101	Acid Soluble Ca (5%)	0043	6.585	0.0900	6.236	0.8214	0.1125	67	0.42	101.33	0
101	Acid Soluble Ca (5%)	0494	6.586	0.0954	6.236	0.8214	0.1125	67	0.43	101.33	0
101	Acid Soluble Ca (5%)	0360	6.602	0.0950	6.236	0.8214	0.1125	67	0.44	101.30	0
101	Acid Soluble Ca (5%)	0419	6.605	0.0300	6.236	0.8214	0.1125	67	0.45	101.33	0
101	Acid Soluble Ca (5%)	0568	6.610	0.1200	6.236	0.8214	0.1125	67	0.45	101.30	0
101	Acid Soluble Ca (5%)	0547	6.610	0.1000	6.236	0.8214	0.1125	67	0.45	101.99	0
101	Acid Soluble Ca (5%)	0037	6.634	0.0180	6.236	0.8214	0.1125	67	0.48	101.33	0
101	Acid Soluble Ca (5%)	0028	6.660	0.0400	6.236	0.8214	0.1125	67	0.52	101.32	0
101	Acid Soluble Ca (5%)	0117	6.703	0.1363	6.236	0.8214	0.1125	67	0.57	101.33	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				
101	Acid Soluble Ca (5%)	0354	6.730	0.0600	6.236	0.8214	0.1125	67	0.60	101.30	0
101	Acid Soluble Ca (5%)	0433	6.750‡	0.1000	6.236	0.8214	0.1125	67	0.63	101.30	0
101	Acid Soluble Ca (5%)	0371	6.760‡	0.2800	6.236	0.8214	0.1125	67	0.64	101.30	0
101	Acid Soluble Ca (5%)	0423	6.765‡	0.0300	6.236	0.8214	0.1125	67	0.64	101.32	0
101	Acid Soluble Ca (5%)	0023	6.775‡	0.0300	6.236	0.8214	0.1125	67	0.66	101.31	0
101	Acid Soluble Ca (5%)	0325	6.850‡	0.1000	6.236	0.8214	0.1125	67	0.75	101.30	0
101	Acid Soluble Ca (5%)	0136	6.850‡	0.5000	6.236	0.8214	0.1125	67	0.75	101.33	0
101	Acid Soluble Ca (5%)	0444	6.880‡	0.0200	6.236	0.8214	0.1125	67	0.78	101.30	0
101	Acid Soluble Ca (5%)	0444	6.880‡	0.0200	6.236	0.8214	0.1125	67	0.78	101.99	0
101	Acid Soluble Ca (5%)	0095	6.890‡	0.4000	6.236	0.8214	0.1125	67	0.80	101.32	0
101	Acid Soluble Ca (5%)	0546	6.911‡	0.0268	6.236	0.8214	0.1125	67	0.82	101.03	0
101	Acid Soluble Ca (5%)	0029	7.064‡	0.0240	6.236	0.8214	0.1125	67	1.01	101.00	0
101	Acid Soluble Ca (5%)	0324	7.075‡	0.2100	6.236	0.8214	0.1125	67	1.02	101.30	0
101	Acid Soluble Ca (5%)	0169	7.350‡	0.1000	6.236	0.8214	0.1125	67	1.36	101.33	0
101	Acid Soluble Ca (5%)	0027	7.375‡	0.3700	6.236	0.8214	0.1125	67	1.39	101.99	0
101	Acid Soluble Ca (5%)	0563	7.394‡	0.2526	6.236	0.8214	0.1125	67	1.41	101.33	0
101	Acid Soluble Ca (5%)	0550	7.520‡	0.1800	6.236	0.8214	0.1125	67	1.56	101.00	0
101	Acid Soluble Ca (5%)	0421	9.460‡	0.1000	6.236	0.8214	0.1125	67	3.92	101.33	0
101	Acid Soluble Ca (5%)	0515	6.069	1.075	6.236	0.8214	0.1125	67	-0.20	101.33	1
101	Acid Soluble Ca (5%)	0377	6.365	0.7900	6.236	0.8214	0.1125	67	0.16	101.30	1
101	Acid Soluble Ca (5%)	0450	6.740	0.8000	6.236	0.8214	0.1125	67	0.61	101.30	1
121	Acid Soluble Mg (9.5%)	0516	0.1775	0.0030	0.3610	0.1753	0.0194	21	-1.05	121.99	0
121	Acid Soluble Mg (9.5%)	0472	0.1850	0.0300	0.3610	0.1753	0.0194	21	-1.00	121.30	0
121	Acid Soluble Mg (9.5%)	0515	0.2029	0.0700	0.3610	0.1753	0.0194	21	-0.90	121.99	0
121	Acid Soluble Mg (9.5%)	0539	0.2100	0.0200	0.3610	0.1753	0.0194	21	-0.86	121.00	0
121	Acid Soluble Mg (9.5%)	0535	0.2150	0.0300	0.3610	0.1753	0.0194	21	-0.83	121.00	0
121	Acid Soluble Mg (9.5%)	0524	0.2155	0.0088	0.3610	0.1753	0.0194	21	-0.83	121.99	0
121	Acid Soluble Mg (9.5%)	0419	0.2500	0.0000	0.3610	0.1753	0.0194	21	-0.63	121.33	0
121	Acid Soluble Mg (9.5%)	0553	0.2580	0.0100	0.3610	0.1753	0.0194	21	-0.59	121.00	0
121	Acid Soluble Mg (9.5%)	0389	0.2850	0.0100	0.3610	0.1753	0.0194	21	-0.43	121.99	0
121	Acid Soluble Mg (9.5%)	0523	0.3000	0.0000	0.3610	0.1753	0.0194	21	-0.35	121.99	0
121	Acid Soluble Mg (9.5%)	0028	0.3355	0.0110	0.3610	0.1753	0.0194	21	-0.15	121.32	0
121	Acid Soluble Mg (9.5%)	0568	0.3450	0.0100	0.3610	0.1753	0.0194	21	-0.09	121.30	0
121	Acid Soluble Mg (9.5%)	0368	0.3474	0.0189	0.3610	0.1753	0.0194	21	-0.08	121.33	0
121	Acid Soluble Mg (9.5%)	0354	0.3600	0.0200	0.3610	0.1753	0.0194	21	-0.01	121.30	0
121	Acid Soluble Mg (9.5%)	0423	0.4785	0.0110	0.3610	0.1753	0.0194	21	0.67	121.32	0
121	Acid Soluble Mg (9.5%)	0515	0.4914	0.0311	0.3610	0.1753	0.0194	21	0.74	121.33	0
121	Acid Soluble Mg (9.5%)	0534	0.5350	0.0500	0.3610	0.1753	0.0194	21	0.99	121.03	0
121	Acid Soluble Mg (9.5%)	0494	0.5396	0.0142	0.3610	0.1753	0.0194	21	1.02	121.33	0
121	Acid Soluble Mg (9.5%)	0563	0.6118‡	0.0473	0.3610	0.1753	0.0194	21	1.43	121.33	0
121	Acid Soluble Mg (9.5%)	0527	0.6151‡	0.0023	0.3610	0.1753	0.0194	21	1.45	121.33	0
121	Acid Soluble Mg (9.5%)	0421	0.9250‡	0.0100	0.3610	0.1753	0.0194	21	3.22	121.33	0
121	Acid Soluble Mg (9.5%)	0035	0.3345	0.1110	0.3610	0.1753	0.0194	21	-0.15	121.30	1
143	Elemental S (%)	0405	0.5750	0.1300	9.495	1.257	0.1815	7	-6.42	143.00	0
143	Elemental S (%)	0390	9.090	0.2000	9.495	1.257	0.1815	7	-0.29	143.99	0
143	Elemental S (%)	0472	9.095	0.0300	9.495	1.257	0.1815	7	-0.29	143.99	0
143	Elemental S (%)	0255	9.490	0.4210	9.495	1.257	0.1815	7	0.00	143.99	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				
143	Elemental S (%)	0368	9.556	0.0397	9.495	1.257	0.1815	7	0.04	143.99	0
143	Elemental S (%)	0389	10.73	0.0500	9.495	1.257	0.1815	7	0.89	143.99	0
143	Elemental S (%)	0325	10.90	0.4000	9.495	1.257	0.1815	7	1.01	143.99	0
145	Sulfate S, HCl soluble (%)	0562	9.200	0.2000	9.531	0.2544	0.2022	9	-1.20	145.99	0
145	Sulfate S, HCl soluble (%)	0444	9.205	0.2100	9.531	0.2544	0.2022	9	-1.18	145.99	0
145	Sulfate S, HCl soluble (%)	0027	9.405	0.4100	9.531	0.2544	0.2022	9	-0.46	145.00	0
145	Sulfate S, HCl soluble (%)	0553	9.550	0.1000	9.531	0.2544	0.2022	9	0.07	145.99	0
145	Sulfate S, HCl soluble (%)	0537	9.555	0.2700	9.531	0.2544	0.2022	9	0.09	145.99	0
145	Sulfate S, HCl soluble (%)	0405	9.620	0.1200	9.531	0.2544	0.2022	9	0.32	145.00	0
145	Sulfate S, HCl soluble (%)	0550	9.665	0.3700	9.531	0.2544	0.2022	9	0.49	145.00	0
145	Sulfate S, HCl soluble (%)	0561	9.720	0.0400	9.531	0.2544	0.2022	9	0.69	145.00	0
145	Sulfate S, HCl soluble (%)	0419	9.860	0.1000	9.531	0.2544	0.2022	9	1.19	145.99	0
146	Total S in Liquid (%)	0538	9.500	0.2000				1		146.00	0
148	Total S (%)	0521	8.191	0.0000	9.773	0.3779	0.1442	50	-4.19	148.07	0
148	Total S (%)	0450	8.705	0.0300	9.773	0.3779	0.1442	50	-2.83	148.99	0
148	Total S (%)	0523	8.725	0.0900	9.773	0.3779	0.1442	50	-2.77	148.99	0
148	Total S (%)	0117	9.197	0.1709	9.773	0.3779	0.1442	50	-1.52	148.07	0
148	Total S (%)	0049	9.275	0.0500	9.773	0.3779	0.1442	50	-1.32	148.00	0
148	Total S (%)	0564	9.420	0.0600	9.773	0.3779	0.1442	50	-0.93	148.01	0
148	Total S (%)	0486	9.420	0.1800	9.773	0.3779	0.1442	50	-0.93	148.07	0
148	Total S (%)	0444	9.445	0.4500	9.773	0.3779	0.1442	50	-0.87	148.01	0
148	Total S (%)	0073	9.480	0.2600	9.773	0.3779	0.1442	50	-0.78	148.01	0
148	Total S (%)	0540	9.495	0.1300	9.773	0.3779	0.1442	50	-0.74	148.99	0
148	Total S (%)	0169	9.500	0.1000	9.773	0.3779	0.1442	50	-0.72	148.07	0
148	Total S (%)	0028	9.515	0.3900	9.773	0.3779	0.1442	50	-0.68	148.01	0
148	Total S (%)	0231	9.550	0.1000	9.773	0.3779	0.1442	50	-0.59	148.01	0
148	Total S (%)	0354	9.590	0.0600	9.773	0.3779	0.1442	50	-0.48	148.99	0
148	Total S (%)	0444	9.595	0.3100	9.773	0.3779	0.1442	50	-0.47	148.07	0
148	Total S (%)	0549	9.615	0.0900	9.773	0.3779	0.1442	50	-0.42	148.01	0
148	Total S (%)	0072	9.622	0.0403	9.773	0.3779	0.1442	50	-0.40	148.99	0
148	Total S (%)	0527	9.628	0.1610	9.773	0.3779	0.1442	50	-0.39	148.00	0
148	Total S (%)	0433	9.635	0.0700	9.773	0.3779	0.1442	50	-0.37	148.99	0
148	Total S (%)	0023	9.655	0.0100	9.773	0.3779	0.1442	50	-0.31	148.07	0
148	Total S (%)	0515	9.666	0.1404	9.773	0.3779	0.1442	50	-0.28	148.07	0
148	Total S (%)	0506	9.690	0.0000	9.773	0.3779	0.1442	50	-0.22	148.99	0
148	Total S (%)	0037	9.696	0.0580	9.773	0.3779	0.1442	50	-0.20	148.07	0
148	Total S (%)	0040	9.700	0.2000	9.773	0.3779	0.1442	50	-0.19	148.07	0
148	Total S (%)	0029	9.704	0.1590	9.773	0.3779	0.1442	50	-0.18	148.00	0
148	Total S (%)	0558	9.710	0.1000	9.773	0.3779	0.1442	50	-0.17	148.99	0
148	Total S (%)	0494	9.714	0.3322	9.773	0.3779	0.1442	50	-0.16	148.07	0
148	Total S (%)	0055	9.735	0.0900	9.773	0.3779	0.1442	50	-0.10	148.01	0
148	Total S (%)	0567	9.750	0.1000	9.773	0.3779	0.1442	50	-0.06	148.99	0
148	Total S (%)	0292	9.755	0.0700	9.773	0.3779	0.1442	50	-0.05	148.07	0
148	Total S (%)	0534	9.775	0.0300	9.773	0.3779	0.1442	50	0.00	148.01	0
148	Total S (%)	0177	9.865	0.1536	9.773	0.3779	0.1442	50	0.24	148.07	0
148	Total S (%)	0114	9.885	0.3900	9.773	0.3779	0.1442	50	0.30	148.00	0
148	Total S (%)	0422	9.890	0.1800	9.773	0.3779	0.1442	50	0.31	148.99	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				
148	Total S (%)	0532	9.980	0.1600	9.773	0.3779	0.1442	50	0.55	148.01	0
148	Total S (%)	0220	10.00	0.0600	9.773	0.3779	0.1442	50	0.60	148.99	0
148	Total S (%)	0559	10.01	0.0100	9.773	0.3779	0.1442	50	0.61	148.99	0
148	Total S (%)	0451	10.04	0.4200	9.773	0.3779	0.1442	50	0.71	148.00	0
148	Total S (%)	0371	10.05	0.2500	9.773	0.3779	0.1442	50	0.72	148.99	0
148	Total S (%)	0476	10.08	0.1321	9.773	0.3779	0.1442	50	0.80	148.01	0
148	Total S (%)	0546	10.08	0.0332	9.773	0.3779	0.1442	50	0.81	148.07	0
148	Total S (%)	0405	10.20	0.2500	9.773	0.3779	0.1442	50	1.12	148.01	0
148	Total S (%)	0136	10.20	0.2000	9.773	0.3779	0.1442	50	1.13	148.00	0
148	Total S (%)	0324	10.20	0.0000	9.773	0.3779	0.1442	50	1.13	148.01	0
148	Total S (%)	0527	10.47	0.0888	9.773	0.3779	0.1442	50	1.84	148.07	0
148	Total S (%)	0563	10.79	0.3209	9.773	0.3779	0.1442	50	2.70	148.07	0
148	Total S (%)	0043	10.96	0.1300	9.773	0.3779	0.1442	50	3.13	148.07	0
148	Total S (%)	0551	11.10	0.2000	9.773	0.3779	0.1442	50	3.51	148.99	0
148	Total S (%)	0535	11.65	0.1000	9.773	0.3779	0.1442	50	4.97	148.99	0
148	Total S (%)	0539	11.65	0.1000	9.773	0.3779	0.1442	50	4.97	148.99	0
148	Total S (%)	0421	10.03	1.150	9.773	0.3779	0.1442	50	0.67	148.07	1
148	Total S (%)	0157	11.35	1.100	9.773	0.3779	0.1442	50	4.17	148.01	1
148	Total S (%)	0516	2.906	0.2010	9.773	0.3779	0.1442	50	-18.17	148.99	2
149	S - HNO3 soluble (%)	0547	9.120	0.0400	9.575	0.4829	0.1059	5	-0.94	149.99	0
149	S - HNO3 soluble (%)	0231	9.405	0.0100	9.575	0.4829	0.1059	5	-0.35	149.04	0
149	S - HNO3 soluble (%)	0518	9.445	0.2900	9.575	0.4829	0.1059	5	-0.27	149.03	0
149	S - HNO3 soluble (%)	0423	9.510	0.0600	9.575	0.4829	0.1059	5	-0.14	149.04	0
149	S - HNO3 soluble (%)	0524	10.40	0.1295	9.575	0.4829	0.1059	5	1.70	149.04	0
151	Acid Soluble As (ppm)	0550	0.3550	0.1700	3.893	0.6956	0.6056	18	-5.09	151.99	0
151	Acid Soluble As (ppm)	0506	3.300	0.0600	3.893	0.6956	0.6056	18	-0.85	151.99	0
151	Acid Soluble As (ppm)	0255	3.336	1.955	3.893	0.6956	0.6056	18	-0.80	151.30	0
151	Acid Soluble As (ppm)	0220	3.450	0.7000	3.893	0.6956	0.6056	18	-0.64	151.32	0
151	Acid Soluble As (ppm)	0534	3.455	0.2500	3.893	0.6956	0.6056	18	-0.63	151.00	0
151	Acid Soluble As (ppm)	0529	3.460	0.1000	3.893	0.6956	0.6056	18	-0.62	151.32	0
151	Acid Soluble As (ppm)	0220	3.500	0.4000	3.893	0.6956	0.6056	18	-0.56	151.99	0
151	Acid Soluble As (ppm)	0515	3.567	0.3680	3.893	0.6956	0.6056	18	-0.47	151.33	0
151	Acid Soluble As (ppm)	0524	3.773	0.0470	3.893	0.6956	0.6056	18	-0.17	151.30	0
151	Acid Soluble As (ppm)	0515	3.781	2.784	3.893	0.6956	0.6056	18	-0.16	151.34	0
151	Acid Soluble As (ppm)	0136	3.885	0.3500	3.893	0.6956	0.6056	18	-0.01	151.33	0
151	Acid Soluble As (ppm)	0527	4.020	0.0133	3.893	0.6956	0.6056	18	0.18	151.33	0
151	Acid Soluble As (ppm)	0450	4.200	0.6000	3.893	0.6956	0.6056	18	0.44	151.30	0
151	Acid Soluble As (ppm)	0563	4.309	0.0003	3.893	0.6956	0.6056	18	0.60	151.33	0
151	Acid Soluble As (ppm)	0523	4.377	0.1890	3.893	0.6956	0.6056	18	0.70	151.30	0
151	Acid Soluble As (ppm)	0494	4.978	0.6750	3.893	0.6956	0.6056	18	1.56	151.33	0
151	Acid Soluble As (ppm)	0405	5.000	0.0000	3.893	0.6956	0.6056	18	1.59	151.99	0
151	Acid Soluble As (ppm)	0368	10.22	2.240	3.893	0.6956	0.6056	18	9.10	151.34	0
151	Acid Soluble As (ppm)	0117	< 10		3.893	0.6956	0.6056	18		151.33	5
165	Acid Soluble B (1.25%)	0516	0.7720†	0.0080	1.155	0.0896	0.0406	54	-4.28	165.99	0
165	Acid Soluble B (1.25%)	0324	0.9700†	0.0800	1.155	0.0896	0.0406	54	-2.07	165.30	0
165	Acid Soluble B (1.25%)	0055	1.005	0.0200	1.155	0.0896	0.0406	54	-1.68	165.00	0
165	Acid Soluble B (1.25%)	0390	1.015	0.0710	1.155	0.0896	0.0406	54	-1.57	165.99	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				
165	Acid Soluble B (1.25%)	0169	1.024	0.0020	1.155	0.0896	0.0406	54	-1.47	165.30	0
165	Acid Soluble B (1.25%)	0231	1.025	0.0100	1.155	0.0896	0.0406	54	-1.45	165.99	0
165	Acid Soluble B (1.25%)	0521	1.056	0.0000	1.155	0.0896	0.0406	54	-1.11	165.30	0
165	Acid Soluble B (1.25%)	0377	1.065	0.0900	1.155	0.0896	0.0406	54	-1.01	165.30	0
165	Acid Soluble B (1.25%)	0423	1.067	0.0070	1.155	0.0896	0.0406	54	-0.99	165.99	0
165	Acid Soluble B (1.25%)	0421	1.070	0.0400	1.155	0.0896	0.0406	54	-0.95	165.99	0
165	Acid Soluble B (1.25%)	0354	1.090	0.0400	1.155	0.0896	0.0406	54	-0.73	165.30	0
165	Acid Soluble B (1.25%)	0472	1.090	0.0200	1.155	0.0896	0.0406	54	-0.73	165.99	0
165	Acid Soluble B (1.25%)	0255	1.094	0.0500	1.155	0.0896	0.0406	54	-0.68	165.99	0
165	Acid Soluble B (1.25%)	0564	1.095	0.0100	1.155	0.0896	0.0406	54	-0.67	165.99	0
165	Acid Soluble B (1.25%)	0547	1.105	0.0100	1.155	0.0896	0.0406	54	-0.56	165.99	0
165	Acid Soluble B (1.25%)	0292	1.115	0.0100	1.155	0.0896	0.0406	54	-0.45	165.30	0
165	Acid Soluble B (1.25%)	0559	1.115	0.0100	1.155	0.0896	0.0406	54	-0.45	165.99	0
165	Acid Soluble B (1.25%)	0444	1.125	0.0300	1.155	0.0896	0.0406	54	-0.34	165.30	0
165	Acid Soluble B (1.25%)	0422	1.130	0.0600	1.155	0.0896	0.0406	54	-0.28	165.30	0
165	Acid Soluble B (1.25%)	0405	1.135	0.0100	1.155	0.0896	0.0406	54	-0.23	165.00	0
165	Acid Soluble B (1.25%)	0117	1.137	0.0045	1.155	0.0896	0.0406	54	-0.21	165.99	0
165	Acid Soluble B (1.25%)	0368	1.137	0.0034	1.155	0.0896	0.0406	54	-0.20	165.99	0
165	Acid Soluble B (1.25%)	0494	1.138	0.0095	1.155	0.0896	0.0406	54	-0.20	165.30	0
165	Acid Soluble B (1.25%)	0029	1.140	0.0320	1.155	0.0896	0.0406	54	-0.17	165.00	0
165	Acid Soluble B (1.25%)	0028	1.141	0.0040	1.155	0.0896	0.0406	54	-0.16	165.00	0
165	Acid Soluble B (1.25%)	0360	1.142	0.0110	1.155	0.0896	0.0406	54	-0.15	165.99	0
165	Acid Soluble B (1.25%)	0535	1.150	0.1000	1.155	0.0896	0.0406	54	-0.06	165.00	0
165	Acid Soluble B (1.25%)	0553	1.150	0.1000	1.155	0.0896	0.0406	54	-0.06	165.00	0
165	Acid Soluble B (1.25%)	0562	1.150	0.1000	1.155	0.0896	0.0406	54	-0.06	165.99	0
165	Acid Soluble B (1.25%)	0234	1.170	0.0000	1.155	0.0896	0.0406	54	0.16	165.30	0
165	Acid Soluble B (1.25%)	0506	1.180	0.0400	1.155	0.0896	0.0406	54	0.28	165.00	0
165	Acid Soluble B (1.25%)	0550	1.180	0.0400	1.155	0.0896	0.0406	54	0.28	165.00	0
165	Acid Soluble B (1.25%)	0433	1.180	0.0200	1.155	0.0896	0.0406	54	0.28	165.30	0
165	Acid Soluble B (1.25%)	0537	1.185	0.0700	1.155	0.0896	0.0406	54	0.33	165.00	0
165	Acid Soluble B (1.25%)	0389	1.190	0.0400	1.155	0.0896	0.0406	54	0.39	165.30	0
165	Acid Soluble B (1.25%)	0136	1.190	0.1600	1.155	0.0896	0.0406	54	0.39	165.99	0
165	Acid Soluble B (1.25%)	0546	1.191	0.0100	1.155	0.0896	0.0406	54	0.40	165.30	0
165	Acid Soluble B (1.25%)	0515	1.195	0.1017	1.155	0.0896	0.0406	54	0.44	165.99	0
165	Acid Soluble B (1.25%)	0043	1.195	0.0100	1.155	0.0896	0.0406	54	0.44	165.30	0
165	Acid Soluble B (1.25%)	0486	1.195	0.0100	1.155	0.0896	0.0406	54	0.44	165.99	0
165	Acid Soluble B (1.25%)	0023	1.200	0.0000	1.155	0.0896	0.0406	54	0.50	165.30	0
165	Acid Soluble B (1.25%)	0527	1.208	0.0013	1.155	0.0896	0.0406	54	0.59	165.99	0
165	Acid Soluble B (1.25%)	0524	1.218	0.0508	1.155	0.0896	0.0406	54	0.70	165.99	0
165	Acid Soluble B (1.25%)	0563	1.223	0.2116	1.155	0.0896	0.0406	54	0.75	165.99	0
165	Acid Soluble B (1.25%)	0042	1.225	0.0500	1.155	0.0896	0.0406	54	0.78	165.99	0
165	Acid Soluble B (1.25%)	0540	1.230	0.0400	1.155	0.0896	0.0406	54	0.83	165.00	0
165	Acid Soluble B (1.25%)	0533	1.267	0.0310	1.155	0.0896	0.0406	54	1.24	165.00	0
165	Acid Soluble B (1.25%)	0451	1.273	0.1110	1.155	0.0896	0.0406	54	1.31	165.30	0
165	Acid Soluble B (1.25%)	0538	1.275	0.1500	1.155	0.0896	0.0406	54	1.34	165.00	0
165	Acid Soluble B (1.25%)	0073	1.295	0.0300	1.155	0.0896	0.0406	54	1.56	165.30	0
165	Acid Soluble B (1.25%)	0558	1.300	0.0200	1.155	0.0896	0.0406	54	1.62	165.00	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				
165	Acid Soluble B (1.25%)	0220	1.385±	0.0100	1.155	0.0896	0.0406	54	2.56	165.00	0
165	Acid Soluble B (1.25%)	0371	1.495±	0.0100	1.155	0.0896	0.0406	54	3.79	165.30	0
165	Acid Soluble B (1.25%)	0309	1.595±	0.0300	1.155	0.0896	0.0406	54	4.91	165.00	0
165	Acid Soluble B (1.25%)	0325	1.450±	0.3000	1.155	0.0896	0.0406	54	3.29	165.30	1
165	Acid Soluble B (1.25%)	0556	2.300±	0.2400	1.155	0.0896	0.0406	54	12.78	165.00	2
171	Water Soluble B (%)	0534	1.010	0.0200	1.200	0.1083	0.0411	7	-1.59	171.10	0
171	Water Soluble B (%)	0027	1.115	0.0700	1.200	0.1083	0.0411	7	-0.71	171.99	0
171	Water Soluble B (%)	0551	1.175	0.0500	1.200	0.1083	0.0411	7	-0.21	171.10	0
171	Water Soluble B (%)	0532	1.244	0.0080	1.200	0.1083	0.0411	7	0.37	171.10	0
171	Water Soluble B (%)	0567	1.255	0.0100	1.200	0.1083	0.0411	7	0.46	171.10	0
171	Water Soluble B (%)	0549	1.275	0.0300	1.200	0.1083	0.0411	7	0.62	171.10	0
171	Water Soluble B (%)	0562	1.300	0.1000	1.200	0.1083	0.0411	7	0.83	171.99	0
181	Acid Soluble Cd (ppm)	0444	7.265	0.7300	11.66	2.232	1.149	22	-1.97	181.30	0
181	Acid Soluble Cd (ppm)	0524	8.563	0.2313	11.66	2.232	1.149	22	-1.39	181.30	0
181	Acid Soluble Cd (ppm)	0255	8.729	4.776	11.66	2.232	1.149	22	-1.31	181.30	0
181	Acid Soluble Cd (ppm)	0389	9.495	0.1500	11.66	2.232	1.149	22	-0.97	181.30	0
181	Acid Soluble Cd (ppm)	0534	9.690	0.6600	11.66	2.232	1.149	22	-0.88	181.00	0
181	Acid Soluble Cd (ppm)	0523	10.32	0.4500	11.66	2.232	1.149	22	-0.60	181.30	0
181	Acid Soluble Cd (ppm)	0506	10.65	0.3000	11.66	2.232	1.149	22	-0.45	181.99	0
181	Acid Soluble Cd (ppm)	0368	10.68	0.9300	11.66	2.232	1.149	22	-0.44	181.34	0
181	Acid Soluble Cd (ppm)	0220	11.30	0.8000	11.66	2.232	1.149	22	-0.16	181.32	0
181	Acid Soluble Cd (ppm)	0515	11.38	3.258	11.66	2.232	1.149	22	-0.13	181.33	0
181	Acid Soluble Cd (ppm)	0529	11.42	0.3000	11.66	2.232	1.149	22	-0.11	181.32	0
181	Acid Soluble Cd (ppm)	0136	12.07	0.5000	11.66	2.232	1.149	22	0.18	181.33	0
181	Acid Soluble Cd (ppm)	0037	12.16	0.4040	11.66	2.232	1.149	22	0.22	181.33	0
181	Acid Soluble Cd (ppm)	0450	12.25	0.3000	11.66	2.232	1.149	22	0.26	181.30	0
181	Acid Soluble Cd (ppm)	0515	12.65	0.8220	11.66	2.232	1.149	22	0.44	181.34	0
181	Acid Soluble Cd (ppm)	0494	13.10	3.267	11.66	2.232	1.149	22	0.65	181.33	0
181	Acid Soluble Cd (ppm)	0117	13.11	1.675	11.66	2.232	1.149	22	0.65	181.33	0
181	Acid Soluble Cd (ppm)	0550	13.16	1.850	11.66	2.232	1.149	22	0.67	181.99	0
181	Acid Soluble Cd (ppm)	0563	13.52	1.445	11.66	2.232	1.149	22	0.83	181.33	0
181	Acid Soluble Cd (ppm)	0405	13.97	0.9800	11.66	2.232	1.149	22	1.04	181.99	0
181	Acid Soluble Cd (ppm)	0035	15.00	0.4000	11.66	2.232	1.149	22	1.50	181.30	0
181	Acid Soluble Cd (ppm)	0419	15.32	1.050	11.66	2.232	1.149	22	1.64	181.30	0
190	Water Soluble Cl (%)	0553	0.3300	0.0200				1		190.00	0
191	Acid Soluble Cr (ppm)	0136	16.25	1.900	35.00	12.51	1.849	20	-1.50	191.33	0
191	Acid Soluble Cr (ppm)	0389	20.36	0.0700	35.00	12.51	1.849	20	-1.17	191.30	0
191	Acid Soluble Cr (ppm)	0368	23.20	0.8100	35.00	12.51	1.849	20	-0.94	191.34	0
191	Acid Soluble Cr (ppm)	0550	24.76	1.400	35.00	12.51	1.849	20	-0.82	191.99	0
191	Acid Soluble Cr (ppm)	0524	26.23	1.946	35.00	12.51	1.849	20	-0.70	191.30	0
191	Acid Soluble Cr (ppm)	0444	27.95	0.3400	35.00	12.51	1.849	20	-0.56	191.30	0
191	Acid Soluble Cr (ppm)	0515	28.55	4.375	35.00	12.51	1.849	20	-0.52	191.34	0
191	Acid Soluble Cr (ppm)	0529	28.63	0.6600	35.00	12.51	1.849	20	-0.51	191.32	0
191	Acid Soluble Cr (ppm)	0419	28.91	1.630	35.00	12.51	1.849	20	-0.49	191.30	0
191	Acid Soluble Cr (ppm)	0450	30.00	2.000	35.00	12.51	1.849	20	-0.40	191.30	0
191	Acid Soluble Cr (ppm)	0405	35.00	6.000	35.00	12.51	1.849	20	0.00	191.99	0
191	Acid Soluble Cr (ppm)	0506	37.90	0.2000	35.00	12.51	1.849	20	0.23	191.99	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				
191	Acid Soluble Cr (ppm)	0523	40.89	0.3100	35.00	12.51	1.849	20	0.47	191.30	0
191	Acid Soluble Cr (ppm)	0527	43.10	0.0491	35.00	12.51	1.849	20	0.65	191.33	0
191	Acid Soluble Cr (ppm)	0515	43.43	2.679	35.00	12.51	1.849	20	0.67	191.33	0
191	Acid Soluble Cr (ppm)	0037	43.63	1.263	35.00	12.51	1.849	20	0.69	191.33	0
191	Acid Soluble Cr (ppm)	0563	45.18	2.918	35.00	12.51	1.849	20	0.81	191.33	0
191	Acid Soluble Cr (ppm)	0494	50.92	0.8333	35.00	12.51	1.849	20	1.27	191.33	0
191	Acid Soluble Cr (ppm)	0035	51.40	7.600	35.00	12.51	1.849	20	1.31	191.30	0
191	Acid Soluble Cr (ppm)	0220	56.00	0.0000	35.00	12.51	1.849	20	1.68	191.32	0
202	Acid Soluble Co (ppm)	0550	8.990	0.3000	20.96	4.236	1.096	19	-2.83	202.30	0
202	Acid Soluble Co (ppm)	0389	11.60	0.0300	20.96	4.236	1.096	19	-2.21	202.30	0
202	Acid Soluble Co (ppm)	0255	16.10	4.011	20.96	4.236	1.096	19	-1.15	202.99	0
202	Acid Soluble Co (ppm)	0136	16.80	0.6000	20.96	4.236	1.096	19	-0.98	202.33	0
202	Acid Soluble Co (ppm)	0524	18.36	0.3446	20.96	4.236	1.096	19	-0.61	202.30	0
202	Acid Soluble Co (ppm)	0368	18.62	1.310	20.96	4.236	1.096	19	-0.55	202.34	0
202	Acid Soluble Co (ppm)	0506	19.30	0.8000	20.96	4.236	1.096	19	-0.39	202.99	0
202	Acid Soluble Co (ppm)	0419	20.61	0.1100	20.96	4.236	1.096	19	-0.08	202.30	0
202	Acid Soluble Co (ppm)	0220	20.75	0.7000	20.96	4.236	1.096	19	-0.05	202.32	0
202	Acid Soluble Co (ppm)	0220	21.45	0.9000	20.96	4.236	1.096	19	0.12	202.99	0
202	Acid Soluble Co (ppm)	0515	21.67	1.047	20.96	4.236	1.096	19	0.17	202.33	0
202	Acid Soluble Co (ppm)	0423	21.86	0.2100	20.96	4.236	1.096	19	0.21	202.32	0
202	Acid Soluble Co (ppm)	0035	22.50	5.000	20.96	4.236	1.096	19	0.36	202.30	0
202	Acid Soluble Co (ppm)	0405	23.70	1.800	20.96	4.236	1.096	19	0.65	202.99	0
202	Acid Soluble Co (ppm)	0523	24.72	1.660	20.96	4.236	1.096	19	0.89	202.30	0
202	Acid Soluble Co (ppm)	0494	25.00	0.4000	20.96	4.236	1.096	19	0.95	202.33	0
202	Acid Soluble Co (ppm)	0037	25.59	0.8580	20.96	4.236	1.096	19	1.09	202.33	0
202	Acid Soluble Co (ppm)	0563	25.85	0.6109	20.96	4.236	1.096	19	1.15	202.33	0
202	Acid Soluble Co (ppm)	0527	26.17	0.1394	20.96	4.236	1.096	19	1.23	202.33	0
202	Acid Soluble Co (ppm)	0515	19.82	6.400	20.96	4.236	1.096	19	-0.27	202.34	1
221	Acid Soluble Cu (%)	0550	0.0003	0.0002	0.0196	0.0020	0.0012	30	-9.49	221.00	0
221	Acid Soluble Cu (%)	0136	0.0165	0.0010	0.0196	0.0020	0.0012	30	-1.50	221.33	0
221	Acid Soluble Cu (%)	0534	0.0170	0.0000	0.0196	0.0020	0.0012	30	-1.26	221.00	0
221	Acid Soluble Cu (%)	0220	0.0170	0.0020	0.0196	0.0020	0.0012	30	-1.26	221.99	0
221	Acid Soluble Cu (%)	0515	0.0173	0.0011	0.0196	0.0020	0.0012	30	-1.13	221.33	0
221	Acid Soluble Cu (%)	0035	0.0180	0.0012	0.0196	0.0020	0.0012	30	-0.76	221.30	0
221	Acid Soluble Cu (%)	0423	0.0180	0.0000	0.0196	0.0020	0.0012	30	-0.76	221.32	0
221	Acid Soluble Cu (%)	0515	0.0182	0.0021	0.0196	0.0020	0.0012	30	-0.69	221.99	0
221	Acid Soluble Cu (%)	0389	0.0185	0.0010	0.0196	0.0020	0.0012	30	-0.52	221.99	0
221	Acid Soluble Cu (%)	0523	0.0185	0.0010	0.0196	0.0020	0.0012	30	-0.52	221.99	0
221	Acid Soluble Cu (%)	0419	0.0190	0.0020	0.0196	0.0020	0.0012	30	-0.27	221.33	0
221	Acid Soluble Cu (%)	0368	0.0191	0.0027	0.0196	0.0020	0.0012	30	-0.25	221.33	0
221	Acid Soluble Cu (%)	0494	0.0192	0.0003	0.0196	0.0020	0.0012	30	-0.20	221.33	0
221	Acid Soluble Cu (%)	0553	0.0195	0.0010	0.0196	0.0020	0.0012	30	-0.03	221.00	0
221	Acid Soluble Cu (%)	0524	0.0196	0.0004	0.0196	0.0020	0.0012	30	0.02	221.99	0
221	Acid Soluble Cu (%)	0231	0.0200	0.0000	0.0196	0.0020	0.0012	30	0.22	221.30	0
221	Acid Soluble Cu (%)	0354	0.0200	0.0000	0.0196	0.0020	0.0012	30	0.22	221.30	0
221	Acid Soluble Cu (%)	0472	0.0200	0.0000	0.0196	0.0020	0.0012	30	0.22	221.30	0
221	Acid Soluble Cu (%)	0037	0.0200	0.0020	0.0196	0.0020	0.0012	30	0.22	221.33	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				
221	Acid Soluble Cu (%)	0043	0.0200	0.0000	0.0196	0.0020	0.0012	30	0.22	221.33	0
221	Acid Soluble Cu (%)	0234	0.0201	0.0002	0.0196	0.0020	0.0012	30	0.27	221.30	0
221	Acid Soluble Cu (%)	0220	0.0202	0.0008	0.0196	0.0020	0.0012	30	0.32	221.32	0
221	Acid Soluble Cu (%)	0563	0.0205	0.0014	0.0196	0.0020	0.0012	30	0.47	221.33	0
221	Acid Soluble Cu (%)	0506	0.0210	0.0020	0.0196	0.0020	0.0012	30	0.71	221.99	0
221	Acid Soluble Cu (%)	0533	0.0220	0.0040	0.0196	0.0020	0.0012	30	1.21	221.00	0
221	Acid Soluble Cu (%)	0535	0.0220	0.0040	0.0196	0.0020	0.0012	30	1.21	221.00	0
221	Acid Soluble Cu (%)	0539	0.0221	0.0041	0.0196	0.0020	0.0012	30	1.23	221.00	0
221	Acid Soluble Cu (%)	0527	0.0221	0.0009	0.0196	0.0020	0.0012	30	1.23	221.33	0
221	Acid Soluble Cu (%)	0405	0.0224	0.0013	0.0196	0.0020	0.0012	30	1.38	221.99	0
221	Acid Soluble Cu (%)	0444	0.0300	0.0000	0.0196	0.0020	0.0012	30	5.15	221.30	0
221	Acid Soluble Cu (%)	0538	0.0350	0.0100	0.0196	0.0020	0.0012	30	7.61	221.00	1
221	Acid Soluble Cu (%)	0255	0.0000	0.0000	0.0196	0.0020	0.0012	30		221.30	4
241	Acid Soluble Fe (%)	0553	0.6150	0.0500	0.8234	0.1302	0.0428	18	-1.60	241.00	0
241	Acid Soluble Fe (%)	0472	0.6700	0.0000	0.8234	0.1302	0.0428	18	-1.18	241.30	0
241	Acid Soluble Fe (%)	0444	0.6900	0.0600	0.8234	0.1302	0.0428	18	-1.02	241.30	0
241	Acid Soluble Fe (%)	0515	0.6977	0.0225	0.8234	0.1302	0.0428	18	-0.97	241.99	0
241	Acid Soluble Fe (%)	0523	0.7200	0.0280	0.8234	0.1302	0.0428	18	-0.79	241.99	0
241	Acid Soluble Fe (%)	0368	0.7386	0.0175	0.8234	0.1302	0.0428	18	-0.65	241.33	0
241	Acid Soluble Fe (%)	0389	0.7900	0.0200	0.8234	0.1302	0.0428	18	-0.26	241.99	0
241	Acid Soluble Fe (%)	0354	0.8100	0.0400	0.8234	0.1302	0.0428	18	-0.10	241.30	0
241	Acid Soluble Fe (%)	0035	0.8225	0.0830	0.8234	0.1302	0.0428	18	-0.01	241.30	0
241	Acid Soluble Fe (%)	0524	0.8334	0.0417	0.8234	0.1302	0.0428	18	0.08	241.99	0
241	Acid Soluble Fe (%)	0028	0.8520	0.0480	0.8234	0.1302	0.0428	18	0.22	241.32	0
241	Acid Soluble Fe (%)	0515	0.8593	0.0634	0.8234	0.1302	0.0428	18	0.28	241.33	0
241	Acid Soluble Fe (%)	0494	0.8946	0.0312	0.8234	0.1302	0.0428	18	0.55	241.33	0
241	Acid Soluble Fe (%)	0423	0.9265	0.0090	0.8234	0.1302	0.0428	18	0.79	241.32	0
241	Acid Soluble Fe (%)	0535	0.9500	0.1000	0.8234	0.1302	0.0428	18	0.97	241.00	0
241	Acid Soluble Fe (%)	0539	0.9500	0.1000	0.8234	0.1302	0.0428	18	0.97	241.00	0
241	Acid Soluble Fe (%)	0563	0.9711	0.0440	0.8234	0.1302	0.0428	18	1.13	241.33	0
241	Acid Soluble Fe (%)	0527	1.018	0.0125	0.8234	0.1302	0.0428	18	1.50	241.33	0
251	Acid Soluble Pb (ppm)	0444	89.35	9.160	142.6	20.08	9.440	23	-2.65	251.30	0
251	Acid Soluble Pb (ppm)	0255	95.41	19.72	142.6	20.08	9.440	23	-2.35	251.30	0
251	Acid Soluble Pb (ppm)	0389	100.4	4.200	142.6	20.08	9.440	23	-2.10	251.30	0
251	Acid Soluble Pb (ppm)	0529	121.0	2.030	142.6	20.08	9.440	23	-1.08	251.32	0
251	Acid Soluble Pb (ppm)	0523	130.0	16.00	142.6	20.08	9.440	23	-0.63	251.30	0
251	Acid Soluble Pb (ppm)	0368	133.1	1.080	142.6	20.08	9.440	23	-0.48	251.34	0
251	Acid Soluble Pb (ppm)	0136	134.5	5.000	142.6	20.08	9.440	23	-0.40	251.33	0
251	Acid Soluble Pb (ppm)	0515	135.4	11.68	142.6	20.08	9.440	23	-0.36	251.33	0
251	Acid Soluble Pb (ppm)	0534	135.4	8.800	142.6	20.08	9.440	23	-0.36	251.00	0
251	Acid Soluble Pb (ppm)	0035	135.5	23.00	142.6	20.08	9.440	23	-0.35	251.30	0
251	Acid Soluble Pb (ppm)	0117	143.6	5.066	142.6	20.08	9.440	23	0.05	251.33	0
251	Acid Soluble Pb (ppm)	0037	144.3	9.155	142.6	20.08	9.440	23	0.09	251.33	0
251	Acid Soluble Pb (ppm)	0405	145.5	1.000	142.6	20.08	9.440	23	0.14	251.99	0
251	Acid Soluble Pb (ppm)	0515	148.2	21.61	142.6	20.08	9.440	23	0.28	251.34	0
251	Acid Soluble Pb (ppm)	0450	150.1	8.900	142.6	20.08	9.440	23	0.37	251.30	0
251	Acid Soluble Pb (ppm)	0550	150.2	21.40	142.6	20.08	9.440	23	0.38	251.99	0

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251	Acid Soluble Pb (ppm)	0524	151.6	8.579	142.6	20.08	9.440	23	0.45	251.30	0
251	Acid Soluble Pb (ppm)	0220	152.5	7.000	142.6	20.08	9.440	23	0.49	251.99	0
251	Acid Soluble Pb (ppm)	0419	160.3	12.30	142.6	20.08	9.440	23	0.88	251.30	0
251	Acid Soluble Pb (ppm)	0494	164.5	1.000	142.6	20.08	9.440	23	1.09	251.33	0
251	Acid Soluble Pb (ppm)	0220	167.0	10.00	142.6	20.08	9.440	23	1.21	251.32	0
251	Acid Soluble Pb (ppm)	0563	167.3	9.487	142.6	20.08	9.440	23	1.23	251.33	0
251	Acid Soluble Pb (ppm)	0527	178.1	0.9639	142.6	20.08	9.440	23	1.77	251.33	0
261	Acid Soluble Mn (5%)	0516	3.528†	0.0030	5.191	0.2963	0.0938	63	-5.61	261.99	0
261	Acid Soluble Mn (5%)	0521	3.972†	0.0000	5.191	0.2963	0.0938	63	-4.11	261.35	0
261	Acid Soluble Mn (5%)	0553	4.500†	0.0200	5.191	0.2963	0.0938	63	-2.33	261.11	0
261	Acid Soluble Mn (5%)	0534	4.710	0.1400	5.191	0.2963	0.0938	63	-1.62	261.15	0
261	Acid Soluble Mn (5%)	0564	4.725	0.0500	5.191	0.2963	0.0938	63	-1.57	261.50	0
261	Acid Soluble Mn (5%)	0562	4.800	0.2000	5.191	0.2963	0.0938	63	-1.32	261.99	0
261	Acid Soluble Mn (5%)	0451	4.834	0.2570	5.191	0.2963	0.0938	63	-1.21	261.32	0
261	Acid Soluble Mn (5%)	0558	4.845	0.0500	5.191	0.2963	0.0938	63	-1.17	261.99	0
261	Acid Soluble Mn (5%)	0538	4.900	0.0400	5.191	0.2963	0.0938	63	-0.98	261.12	0
261	Acid Soluble Mn (5%)	0419	4.915	0.1300	5.191	0.2963	0.0938	63	-0.93	261.35	0
261	Acid Soluble Mn (5%)	0567	4.925	0.0500	5.191	0.2963	0.0938	63	-0.90	261.99	0
261	Acid Soluble Mn (5%)	0533	4.950	0.1000	5.191	0.2963	0.0938	63	-0.81	261.12	0
261	Acid Soluble Mn (5%)	0535	4.950	0.1000	5.191	0.2963	0.0938	63	-0.81	261.12	0
261	Acid Soluble Mn (5%)	0539	4.950	0.1000	5.191	0.2963	0.0938	63	-0.81	261.12	0
261	Acid Soluble Mn (5%)	0537	4.980	0.0600	5.191	0.2963	0.0938	63	-0.71	261.12	0
261	Acid Soluble Mn (5%)	0234	4.980	0.1600	5.191	0.2963	0.0938	63	-0.71	261.30	0
261	Acid Soluble Mn (5%)	0485	5.001	0.0105	5.191	0.2963	0.0938	63	-0.64	261.12	0
261	Acid Soluble Mn (5%)	0390	5.010	0.0600	5.191	0.2963	0.0938	63	-0.61	261.30	0
261	Acid Soluble Mn (5%)	0255	5.033	0.1030	5.191	0.2963	0.0938	63	-0.54	261.99	0
261	Acid Soluble Mn (5%)	0231	5.035	0.0700	5.191	0.2963	0.0938	63	-0.53	261.32	0
261	Acid Soluble Mn (5%)	0551	5.050	0.1000	5.191	0.2963	0.0938	63	-0.48	261.12	0
261	Acid Soluble Mn (5%)	0292	5.075	0.0300	5.191	0.2963	0.0938	63	-0.39	261.14	0
261	Acid Soluble Mn (5%)	0506	5.075	0.0300	5.191	0.2963	0.0938	63	-0.39	261.99	0
261	Acid Soluble Mn (5%)	0523	5.095	0.0580	5.191	0.2963	0.0938	63	-0.32	261.99	0
261	Acid Soluble Mn (5%)	0559	5.110	0.0200	5.191	0.2963	0.0938	63	-0.27	261.99	0
261	Acid Soluble Mn (5%)	0035	5.115	0.1300	5.191	0.2963	0.0938	63	-0.26	261.30	0
261	Acid Soluble Mn (5%)	0515	5.115	0.1020	5.191	0.2963	0.0938	63	-0.26	261.35	0
261	Acid Soluble Mn (5%)	0360	5.150	0.0000	5.191	0.2963	0.0938	63	-0.14	261.31	0
261	Acid Soluble Mn (5%)	0563	5.162	0.4471	5.191	0.2963	0.0938	63	-0.10	261.35	0
261	Acid Soluble Mn (5%)	0472	5.170	0.0600	5.191	0.2963	0.0938	63	-0.07	261.30	0
261	Acid Soluble Mn (5%)	0220	5.175	0.0500	5.191	0.2963	0.0938	63	-0.05	261.34	0
261	Acid Soluble Mn (5%)	0324	5.180	0.0200	5.191	0.2963	0.0938	63	-0.04	261.31	0
261	Acid Soluble Mn (5%)	0055	5.220	0.2200	5.191	0.2963	0.0938	63	0.10	261.35	0
261	Acid Soluble Mn (5%)	0527	5.224	0.0418	5.191	0.2963	0.0938	63	0.11	261.35	0
261	Acid Soluble Mn (5%)	0034	5.231	0.0140	5.191	0.2963	0.0938	63	0.13	261.35	0
261	Acid Soluble Mn (5%)	0371	5.235	0.0700	5.191	0.2963	0.0938	63	0.15	261.32	0
261	Acid Soluble Mn (5%)	0037	5.244	0.1250	5.191	0.2963	0.0938	63	0.18	261.35	0
261	Acid Soluble Mn (5%)	0368	5.247	0.0592	5.191	0.2963	0.0938	63	0.19	261.35	0
261	Acid Soluble Mn (5%)	0136	5.250	0.1000	5.191	0.2963	0.0938	63	0.20	261.35	0
261	Acid Soluble Mn (5%)	0040	5.261	0.0400	5.191	0.2963	0.0938	63	0.24	261.12	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				
261	Acid Soluble Mn (5%)	0433	5.285	0.0500	5.191	0.2963	0.0938	63	0.32	261.30	0
261	Acid Soluble Mn (5%)	0117	5.319	0.0175	5.191	0.2963	0.0938	63	0.43	261.35	0
261	Acid Soluble Mn (5%)	0444	5.325	0.0300	5.191	0.2963	0.0938	63	0.45	261.30	0
261	Acid Soluble Mn (5%)	0073	5.335	0.0500	5.191	0.2963	0.0938	63	0.49	261.32	0
261	Acid Soluble Mn (5%)	0025	5.335	0.2500	5.191	0.2963	0.0938	63	0.49	261.35	0
261	Acid Soluble Mn (5%)	0220	5.335	0.2100	5.191	0.2963	0.0938	63	0.49	261.99	0
261	Acid Soluble Mn (5%)	0494	5.371	0.0862	5.191	0.2963	0.0938	63	0.61	261.35	0
261	Acid Soluble Mn (5%)	0422	5.385	0.0500	5.191	0.2963	0.0938	63	0.65	261.30	0
261	Acid Soluble Mn (5%)	0029	5.395	0.2080	5.191	0.2963	0.0938	63	0.69	261.12	0
261	Acid Soluble Mn (5%)	0177	5.400	0.0611	5.191	0.2963	0.0938	63	0.71	261.35	0
261	Acid Soluble Mn (5%)	0023	5.445	0.0100	5.191	0.2963	0.0938	63	0.86	261.32	0
261	Acid Soluble Mn (5%)	0354	5.455	0.0100	5.191	0.2963	0.0938	63	0.89	261.30	0
261	Acid Soluble Mn (5%)	0043	5.495	0.1300	5.191	0.2963	0.0938	63	1.03	261.35	0
261	Acid Soluble Mn (5%)	0524	5.516	0.3803	5.191	0.2963	0.0938	63	1.10	261.99	0
261	Acid Soluble Mn (5%)	0389	5.520	0.0200	5.191	0.2963	0.0938	63	1.11	261.99	0
261	Acid Soluble Mn (5%)	0423	5.525	0.0300	5.191	0.2963	0.0938	63	1.13	261.34	0
261	Acid Soluble Mn (5%)	0546	5.561	0.0704	5.191	0.2963	0.0938	63	1.25	261.35	0
261	Acid Soluble Mn (5%)	0042	5.670	0.2600	5.191	0.2963	0.0938	63	1.62	261.99	0
261	Acid Soluble Mn (5%)	0095	5.785‡	0.3500	5.191	0.2963	0.0938	63	2.00	261.34	0
261	Acid Soluble Mn (5%)	0550	5.840‡	0.1200	5.191	0.2963	0.0938	63	2.19	261.11	0
261	Acid Soluble Mn (5%)	0027	5.879‡	0.0110	5.191	0.2963	0.0938	63	2.32	261.99	0
261	Acid Soluble Mn (5%)	0515	6.084‡	0.0268	5.191	0.2963	0.0938	63	3.01	261.99	0
261	Acid Soluble Mn (5%)	0486	6.210‡	0.0600	5.191	0.2963	0.0938	63	3.44	261.35	0
261	Acid Soluble Mn (5%)	0325	5.300	1.000	5.191	0.2963	0.0938	63	0.37	261.30	1
261	Acid Soluble Mn (5%)	0377	6.335‡	0.8500	5.191	0.2963	0.0938	63	3.86	261.32	1
261	Acid Soluble Mn (5%)	0547	9.770‡	0.2000	5.191	0.2963	0.0938	63	15.45	261.99	2
271	Water Soluble Mn (%)	0532	5.200	0.1600				1		271.00	0
281	Acid Soluble Hg (ppm)	0524	0.4449	0.0221	1.307	0.3539	0.1248	12	-2.44	281.99	0
281	Acid Soluble Hg (ppm)	0550	1.000	0.5160	1.307	0.3539	0.1248	12	-0.87	281.99	0
281	Acid Soluble Hg (ppm)	0534	1.030	0.1000	1.307	0.3539	0.1248	12	-0.78	281.00	0
281	Acid Soluble Hg (ppm)	0529	1.060	0.1200	1.307	0.3539	0.1248	12	-0.70	281.30	0
281	Acid Soluble Hg (ppm)	0035	1.260	0.1000	1.307	0.3539	0.1248	12	-0.13	281.99	0
281	Acid Soluble Hg (ppm)	0450	1.270	0.0800	1.307	0.3539	0.1248	12	-0.11	281.30	0
281	Acid Soluble Hg (ppm)	0368	1.376	0.0428	1.307	0.3539	0.1248	12	0.19	281.99	0
281	Acid Soluble Hg (ppm)	0506	1.420	0.1800	1.307	0.3539	0.1248	12	0.32	281.00	0
281	Acid Soluble Hg (ppm)	0405	1.420	0.0800	1.307	0.3539	0.1248	12	0.32	281.99	0
281	Acid Soluble Hg (ppm)	0117	1.461	0.0138	1.307	0.3539	0.1248	12	0.44	281.00	0
281	Acid Soluble Hg (ppm)	0220	1.775	0.0500	1.307	0.3539	0.1248	12	1.32	281.99	0
281	Acid Soluble Hg (ppm)	0563	2.209	0.1933	1.307	0.3539	0.1248	12	2.55	281.30	0
281	Acid Soluble Hg (ppm)	0515	1.909	0.8750	1.307	0.3539	0.1248	12	1.70	281.30	1
281	Acid Soluble Hg (ppm)	0527	< 0.001		1.307	0.3539	0.1248	12		281.30	5
289	Acid Soluble Mo (ppm)	0368	1.075	1.110	5.986	3.191	0.5803	14	-1.54	289.34	0
289	Acid Soluble Mo (ppm)	0220	3.150	0.5000	5.986	3.191	0.5803	14	-0.89	289.32	0
289	Acid Soluble Mo (ppm)	0515	3.538	0.8130	5.986	3.191	0.5803	14	-0.77	289.33	0
289	Acid Soluble Mo (ppm)	0035	3.820	2.380	5.986	3.191	0.5803	14	-0.68	289.30	0
289	Acid Soluble Mo (ppm)	0524	4.204	0.0360	5.986	3.191	0.5803	14	-0.56	289.30	0
289	Acid Soluble Mo (ppm)	0563	5.478	0.6630	5.986	3.191	0.5803	14	-0.16	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)	0515	5.687	0.9860	5.986	3.191	0.5803	14	-0.09	289.34	0
289	Acid Soluble Mo (ppm)	0405	5.820	0.0000	5.986	3.191	0.5803	14	-0.05	289.99	0
289	Acid Soluble Mo (ppm)	0527	6.060	0.0395	5.986	3.191	0.5803	14	0.02	289.33	0
289	Acid Soluble Mo (ppm)	0037	6.163	0.4360	5.986	3.191	0.5803	14	0.06	289.33	0
289	Acid Soluble Mo (ppm)	0550	8.230	0.5000	5.986	3.191	0.5803	14	0.70	289.99	0
289	Acid Soluble Mo (ppm)	0255	9.687	0.1900	5.986	3.191	0.5803	14	1.16	289.30	0
289	Acid Soluble Mo (ppm)	0506	10.00	0.0000	5.986	3.191	0.5803	14	1.26	289.99	0
289	Acid Soluble Mo (ppm)	0419	10.77	0.4700	5.986	3.191	0.5803	14	1.50	289.30	0
289	Acid Soluble Mo (ppm)	0494	8.525	7.800	5.986	3.191	0.5803	14	0.80	289.33	1
289	Acid Soluble Mo (ppm)	0136	< 5		5.986	3.191	0.5803	14		289.33	5
291	Acid Soluble Ni (ppm)	0255	87.90	4.989	147.9	25.85	10.000	22	-2.32	291.99	0
291	Acid Soluble Ni (ppm)	0444	95.71	5.890	147.9	25.85	10.000	22	-2.02	291.30	0
291	Acid Soluble Ni (ppm)	0389	96.64	0.9500	147.9	25.85	10.000	22	-1.98	291.30	0
291	Acid Soluble Ni (ppm)	0529	104.5	3.880	147.9	25.85	10.000	22	-1.68	291.32	0
291	Acid Soluble Ni (ppm)	0550	123.2	22.30	147.9	25.85	10.000	22	-0.96	291.99	0
291	Acid Soluble Ni (ppm)	0515	140.3	5.858	147.9	25.85	10.000	22	-0.29	291.33	0
291	Acid Soluble Ni (ppm)	0368	145.4	13.41	147.9	25.85	10.000	22	-0.09	291.34	0
291	Acid Soluble Ni (ppm)	0405	146.0	12.00	147.9	25.85	10.000	22	-0.07	291.99	0
291	Acid Soluble Ni (ppm)	0136	147.3	3.900	147.9	25.85	10.000	22	-0.02	291.33	0
291	Acid Soluble Ni (ppm)	0524	148.1	4.518	147.9	25.85	10.000	22	0.01	291.30	0
291	Acid Soluble Ni (ppm)	0450	150.5	35.00	147.9	25.85	10.000	22	0.10	291.30	0
291	Acid Soluble Ni (ppm)	0523	153.2	0.1000	147.9	25.85	10.000	22	0.20	291.30	0
291	Acid Soluble Ni (ppm)	0419	155.0	7.530	147.9	25.85	10.000	22	0.28	291.30	0
291	Acid Soluble Ni (ppm)	0037	155.4	2.544	147.9	25.85	10.000	22	0.29	291.33	0
291	Acid Soluble Ni (ppm)	0494	160.5	17.00	147.9	25.85	10.000	22	0.49	291.33	0
291	Acid Soluble Ni (ppm)	0515	162.0	3.636	147.9	25.85	10.000	22	0.55	291.34	0
291	Acid Soluble Ni (ppm)	0220	162.5	11.00	147.9	25.85	10.000	22	0.57	291.99	0
291	Acid Soluble Ni (ppm)	0220	165.5	25.00	147.9	25.85	10.000	22	0.68	291.32	0
291	Acid Soluble Ni (ppm)	0117	168.9	17.14	147.9	25.85	10.000	22	0.81	291.33	0
291	Acid Soluble Ni (ppm)	0035	173.0	16.00	147.9	25.85	10.000	22	0.97	291.30	0
291	Acid Soluble Ni (ppm)	0563	174.9	5.942	147.9	25.85	10.000	22	1.04	291.33	0
291	Acid Soluble Ni (ppm)	0527	185.2	1.412	147.9	25.85	10.000	22	1.44	291.33	0
301	Acid Soluble Se (ppm)	0524	0.6765	0.0450	15.33	18.39	0.7560	11	-0.80	301.30	0
301	Acid Soluble Se (ppm)	0523	0.7887	0.0147	15.33	18.39	0.7560	11	-0.79	301.30	0
301	Acid Soluble Se (ppm)	0255	1.153	1.589	15.33	18.39	0.7560	11	-0.77	301.99	0
301	Acid Soluble Se (ppm)	0563	2.564	0.1092	15.33	18.39	0.7560	11	-0.69	301.33	0
301	Acid Soluble Se (ppm)	0527	2.631	0.1686	15.33	18.39	0.7560	11	-0.69	301.33	0
301	Acid Soluble Se (ppm)	0405	5.000	0.0000	15.33	18.39	0.7560	11	-0.56	301.99	0
301	Acid Soluble Se (ppm)	0515	16.51	1.574	15.33	18.39	0.7560	11	0.06	301.33	0
301	Acid Soluble Se (ppm)	0494	30.50	1.000	15.33	18.39	0.7560	11	0.82	301.33	0
301	Acid Soluble Se (ppm)	0220	33.70	0.6000	15.33	18.39	0.7560	11	1.00	301.32	0
301	Acid Soluble Se (ppm)	0220	35.00	2.800	15.33	18.39	0.7560	11	1.07	301.99	0
301	Acid Soluble Se (ppm)	0037	40.15	0.4160	15.33	18.39	0.7560	11	1.35	301.33	0
301	Acid Soluble Se (ppm)	0515	12.10	8.455	15.33	18.39	0.7560	11	-0.18	301.34	1
301	Acid Soluble Se (ppm)	0550	< 0.08		15.33	18.39	0.7560	11		301.99	5
301	Acid Soluble Se (ppm)	0368	< 1		15.33	18.39	0.7560	11		301.34	5
311	Sodium (%)	0035	1.100	0.0400	1.308	0.1623	0.0149	8	-1.17	311.33	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				
311	Sodium (%)	0368	1.171	0.0027	1.308	0.1623	0.0149	8	-0.77	311.33	0
311	Sodium (%)	0521	1.225	0.0000	1.308	0.1623	0.0149	8	-0.47	311.32	0
311	Sodium (%)	0494	1.283	0.0259	1.308	0.1623	0.0149	8	-0.14	311.33	0
311	Sodium (%)	0423	1.341	0.0090	1.308	0.1623	0.0149	8	0.18	311.33	0
311	Sodium (%)	0354	1.350	0.0000	1.308	0.1623	0.0149	8	0.24	311.99	0
311	Sodium (%)	0553	1.485	0.0300	1.308	0.1623	0.0149	8	1.00	311.00	0
311	Sodium (%)	0527	1.507	0.0113	1.308	0.1623	0.0149	8	1.12	311.33	0
311	Sodium (%)	0563	1.497	0.1417	1.308	0.1623	0.0149	8	1.07	311.33	1
321	Acid Soluble Zn (7.5%)	0523	4.829†	0.3270	8.646	0.9915	0.2442	68	-3.85	321.99	0
321	Acid Soluble Zn (7.5%)	0547	5.005†	0.0900	8.646	0.9915	0.2442	68	-3.67	321.99	0
321	Acid Soluble Zn (7.5%)	0516	6.115†	0.0200	8.646	0.9915	0.2442	68	-2.55	321.99	0
321	Acid Soluble Zn (7.5%)	0292	6.875†	0.0500	8.646	0.9915	0.2442	68	-1.79	321.30	0
321	Acid Soluble Zn (7.5%)	0072	7.322†	0.2320	8.646	0.9915	0.2442	68	-1.34	321.30	0
321	Acid Soluble Zn (7.5%)	0521	7.378†	0.0000	8.646	0.9915	0.2442	68	-1.28	321.32	0
321	Acid Soluble Zn (7.5%)	0518	7.385†	0.0700	8.646	0.9915	0.2442	68	-1.27	321.99	0
321	Acid Soluble Zn (7.5%)	0324	7.410†	0.8200	8.646	0.9915	0.2442	68	-1.25	321.30	0
321	Acid Soluble Zn (7.5%)	0567	7.520†	0.0000	8.646	0.9915	0.2442	68	-1.14	321.99	0
321	Acid Soluble Zn (7.5%)	0553	7.575†	0.3500	8.646	0.9915	0.2442	68	-1.08	321.00	0
321	Acid Soluble Zn (7.5%)	0558	7.620†	0.0800	8.646	0.9915	0.2442	68	-1.03	321.99	0
321	Acid Soluble Zn (7.5%)	0537	7.650†	0.1000	8.646	0.9915	0.2442	68	-1.00	321.01	0
321	Acid Soluble Zn (7.5%)	0506	7.675†	0.0700	8.646	0.9915	0.2442	68	-0.98	321.99	0
321	Acid Soluble Zn (7.5%)	0538	7.725†	0.2500	8.646	0.9915	0.2442	68	-0.93	321.00	0
321	Acid Soluble Zn (7.5%)	0562	7.750†	0.2000	8.646	0.9915	0.2442	68	-0.90	321.99	0
321	Acid Soluble Zn (7.5%)	0043	7.755†	0.1700	8.646	0.9915	0.2442	68	-0.90	321.33	0
321	Acid Soluble Zn (7.5%)	0515	7.835	0.4964	8.646	0.9915	0.2442	68	-0.82	321.33	0
321	Acid Soluble Zn (7.5%)	0534	7.950	0.3000	8.646	0.9915	0.2442	68	-0.70	321.00	0
321	Acid Soluble Zn (7.5%)	0533	7.950	0.1000	8.646	0.9915	0.2442	68	-0.70	321.00	0
321	Acid Soluble Zn (7.5%)	0551	8.025	0.0500	8.646	0.9915	0.2442	68	-0.63	321.00	0
321	Acid Soluble Zn (7.5%)	0472	8.045	0.1100	8.646	0.9915	0.2442	68	-0.61	321.30	0
321	Acid Soluble Zn (7.5%)	0535	8.050	0.1000	8.646	0.9915	0.2442	68	-0.60	321.00	0
321	Acid Soluble Zn (7.5%)	0539	8.050	0.1000	8.646	0.9915	0.2442	68	-0.60	321.00	0
321	Acid Soluble Zn (7.5%)	0169	8.050	0.1000	8.646	0.9915	0.2442	68	-0.60	321.33	0
321	Acid Soluble Zn (7.5%)	0556	8.200	0.2000	8.646	0.9915	0.2442	68	-0.45	321.00	0
321	Acid Soluble Zn (7.5%)	0559	8.435	0.0300	8.646	0.9915	0.2442	68	-0.21	321.99	0
321	Acid Soluble Zn (7.5%)	0136	8.450	0.1000	8.646	0.9915	0.2442	68	-0.20	321.33	0
321	Acid Soluble Zn (7.5%)	0444	8.505	0.1500	8.646	0.9915	0.2442	68	-0.14	321.30	0
321	Acid Soluble Zn (7.5%)	0451	8.523	0.0650	8.646	0.9915	0.2442	68	-0.12	321.30	0
321	Acid Soluble Zn (7.5%)	0035	8.560	0.2200	8.646	0.9915	0.2442	68	-0.09	321.30	0
321	Acid Soluble Zn (7.5%)	0042	8.600	0.2800	8.646	0.9915	0.2442	68	-0.05	321.99	0
321	Acid Soluble Zn (7.5%)	0025	8.645	0.2500	8.646	0.9915	0.2442	68	0.00	321.33	0
321	Acid Soluble Zn (7.5%)	0390	8.710	0.4600	8.646	0.9915	0.2442	68	0.06	321.30	0
321	Acid Soluble Zn (7.5%)	0073	8.730	0.2600	8.646	0.9915	0.2442	68	0.08	321.30	0
321	Acid Soluble Zn (7.5%)	0527	8.747	0.2322	8.646	0.9915	0.2442	68	0.10	321.33	0
321	Acid Soluble Zn (7.5%)	0231	8.785	0.2900	8.646	0.9915	0.2442	68	0.14	321.30	0
321	Acid Soluble Zn (7.5%)	0515	8.910	0.2163	8.646	0.9915	0.2442	68	0.27	321.99	0
321	Acid Soluble Zn (7.5%)	0422	8.915	0.2100	8.646	0.9915	0.2442	68	0.27	321.30	0
321	Acid Soluble Zn (7.5%)	0055	8.915	0.2300	8.646	0.9915	0.2442	68	0.27	321.33	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				
321	Acid Soluble Zn (7.5%)	0034	9.008	0.2030	8.646	0.9915	0.2442	68	0.36	321.33	0
321	Acid Soluble Zn (7.5%)	0037	9.019	0.1910	8.646	0.9915	0.2442	68	0.38	321.03	0
321	Acid Soluble Zn (7.5%)	0405	9.040	0.3400	8.646	0.9915	0.2442	68	0.40	321.99	0
321	Acid Soluble Zn (7.5%)	0040	9.042	0.1320	8.646	0.9915	0.2442	68	0.40	321.00	0
321	Acid Soluble Zn (7.5%)	0419	9.090	0.8600	8.646	0.9915	0.2442	68	0.45	321.33	0
321	Acid Soluble Zn (7.5%)	0371	9.110	0.2800	8.646	0.9915	0.2442	68	0.47	321.30	0
321	Acid Soluble Zn (7.5%)	0433	9.135	0.1900	8.646	0.9915	0.2442	68	0.49	321.30	0
321	Acid Soluble Zn (7.5%)	0494	9.167	0.4318	8.646	0.9915	0.2442	68	0.53	321.33	0
321	Acid Soluble Zn (7.5%)	0177	9.224	0.0762	8.646	0.9915	0.2442	68	0.58	321.33	0
321	Acid Soluble Zn (7.5%)	0563	9.272	0.9599	8.646	0.9915	0.2442	68	0.63	321.33	0
321	Acid Soluble Zn (7.5%)	0354	9.285	0.0900	8.646	0.9915	0.2442	68	0.64	321.30	0
321	Acid Soluble Zn (7.5%)	0368	9.296	0.1541	8.646	0.9915	0.2442	68	0.66	321.33	0
321	Acid Soluble Zn (7.5%)	0157	9.345	0.7700	8.646	0.9915	0.2442	68	0.70	321.30	0
321	Acid Soluble Zn (7.5%)	0486	9.400	0.1800	8.646	0.9915	0.2442	68	0.76	321.33	0
321	Acid Soluble Zn (7.5%)	0389	9.405	0.1700	8.646	0.9915	0.2442	68	0.77	321.99	0
321	Acid Soluble Zn (7.5%)	0524	9.491	0.0193	8.646	0.9915	0.2442	68	0.85	321.99	0
321	Acid Soluble Zn (7.5%)	0360	9.500	0.0200	8.646	0.9915	0.2442	68	0.86	321.30	0
321	Acid Soluble Zn (7.5%)	0095	9.505	0.1700	8.646	0.9915	0.2442	68	0.87	321.32	0
321	Acid Soluble Zn (7.5%)	0220	9.540‡	0.3000	8.646	0.9915	0.2442	68	0.90	321.32	0
321	Acid Soluble Zn (7.5%)	0234	9.645‡	0.2700	8.646	0.9915	0.2442	68	1.01	321.30	0
321	Acid Soluble Zn (7.5%)	0028	9.650‡	0.7000	8.646	0.9915	0.2442	68	1.01	321.32	0
321	Acid Soluble Zn (7.5%)	0255	9.680‡	0.2880	8.646	0.9915	0.2442	68	1.04	321.30	0
321	Acid Soluble Zn (7.5%)	0029	9.771‡	0.6590	8.646	0.9915	0.2442	68	1.13	321.00	0
321	Acid Soluble Zn (7.5%)	0023	9.810‡	1.180	8.646	0.9915	0.2442	68	1.17	321.30	0
321	Acid Soluble Zn (7.5%)	0423	9.991‡	0.0890	8.646	0.9915	0.2442	68	1.36	321.32	0
321	Acid Soluble Zn (7.5%)	0421	10.20‡	0.4000	8.646	0.9915	0.2442	68	1.57	321.33	0
321	Acid Soluble Zn (7.5%)	0027	10.21‡	0.0100	8.646	0.9915	0.2442	68	1.57	321.99	0
321	Acid Soluble Zn (7.5%)	0546	10.59‡	0.0857	8.646	0.9915	0.2442	68	1.96	321.33	0
321	Acid Soluble Zn (7.5%)	0550	11.00‡	0.0100	8.646	0.9915	0.2442	68	2.37	321.00	0
321	Acid Soluble Zn (7.5%)	0377	10.87‡	1.840	8.646	0.9915	0.2442	68	2.24	321.30	1
321	Acid Soluble Zn (7.5%)	0325	11.55‡	1.900	8.646	0.9915	0.2442	68	2.93	321.30	1
325	Water Soluble Zn (%)	0564	7.115	0.0300	7.786	0.6541	0.1372	4	-1.03	325.99	0
325	Water Soluble Zn (%)	0549	7.595	0.0900	7.786	0.6541	0.1372	4	-0.29	325.10	0
325	Water Soluble Zn (%)	0532	7.755	0.2100	7.786	0.6541	0.1372	4	-0.05	325.00	0
325	Water Soluble Zn (%)	0117	8.678	0.2188	7.786	0.6541	0.1372	4	1.36	325.30	0

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.