

MAGRUDER - Fertilizer Check Sample No. - 200602 Grade 3-6-9

- Pass 1 Results for 65 Labs - - Pass 2 Results for 64 Labs -

Method	AOAC Ref.	Method Code	No. of Labs	Grand Avq.	Std. Dev.	Average Range of Dups	No. of Labs	Grand Avq.	Std. Dev.	Average Range of Dups
Ammoniacal Nitrogen, MgO Distillation .	920.03	001.10	1	0.06	0.01	0.02	1	0.06	0.01	0.02
Ammoniacal Nitrogen, Other		001.99	3	1.15	1.45	0.14	3	1.15	1.45	0.14
Method Group 001.XX PCT			4	0.87	1.32	0.11	4	0.87	1.32	0.11
Nitrogen From Urea, Urease (as N)	959.03	005.00	1	3.43	0.06	0.09	1	3.43	0.06	0.09
Nitrogen From Urea, Other		005.99	3	3.17	0.11	0.01	3	3.17	0.11	0.01
Method Group 005.XX PCT			4	3.24	0.15	0.03	4	3.24	0.15	0.03
Total Nitrogen, Modified Comprehensive	978.02	010.11	8	3.28	0.13	0.03	8	3.28	0.13	0.03
Total Nitrogen, Salicylic	955.04D	010.12	3	3.15	0.09	0.05	3	3.15	0.09	0.05
Total Nitrogen, Raney	970.03	010.16	1	3.22	0.00	0.00	1	3.22	0.00	0.00
Total Nitrogen, Combustion		010.60	40	3.17	0.12	0.05	39	3.17	0.11	0.04
Total Nitrogen, Other		010.99	3	3.16	0.10	0.01	3	3.16	0.10	0.01
Method Group 010.XX PCT			55	3.18	0.12	0.04	51	3.19	0.11	0.03
Total Phosphate, Grav Quimociac	962.02	020.10	7	6.08	0.04	0.04	7	6.08	0.04	0.04
Total Phosphate, Spectrometric	958.01	020.20	13	6.09	0.15	0.04	12	6.09	0.15	0.03
Total Phosphate, Automated	978.01	020.40	6	6.01	0.10	0.05	6	6.01	0.10	0.05
Total Phosphate, ICP		020.50	7	6.12	0.16	0.12	8	6.16	0.20	0.11
Total Phosphate, Other		020.99	2	6.04	0.08	0.07	2	6.04	0.08	0.07
Method Group 020.XX PCT			36	6.08	0.13	0.06	35	6.08	0.13	0.05
InDir Available Phosphate, Spectrometri	960.02	040.20	1	5.89	0.06	0.08	1	5.89	0.06	0.08
Dir Available Phosphate, Grav Quimociac	960.03E	041.10	10	6.08	0.14	0.07	10	6.08	0.14	0.07
Dir Available Phosphate, Automated	978.01	041.40	1	5.96	0.01	0.02	1	5.96	0.01	0.02
Dir Available Phosphate, ICP		041.50	8	6.05	0.22	0.05	8	6.05	0.22	0.05
Dir Available Phosphate, EDTA Extract .	993.01	041.60	5	6.06	0.13	0.04	4	6.03	0.12	0.02
Dir Available Phosphate, Other		041.99	1	6.00	0.04	0.06	1	6.00	0.04	0.06
Method Group 041.XX PCT			26	6.07	0.17	0.07	25	6.06	0.16	0.06
Water Soluble Phosphate, Spectrometric	970.01	048.20	1	0.20	0.00	0.00	1	0.20	0.00	0.00
Soluble Potash, STPB Oxalate	958.02	050.00	12	9.09	0.17	0.07	11	9.09	0.17	0.05
Soluble Potash, AA (Oxalate)		050.30	10	9.10	0.25	0.07	9	9.11	0.25	0.05
Soluble Potash, AA (Citrate)		050.31	2	9.08	0.25	0.11	2	9.08	0.25	0.11
Soluble Potash, ICP (Oxalate)		050.50	2	8.76	0.30	0.04	2	8.76	0.30	0.04
Soluble Potash, ICP (Citrate)		050.51	6	8.90	0.22	0.10	6	8.90	0.22	0.10
Soluble Potash, Flame (Oxalate)	983.02(a)	050.60	4	8.93	0.06	0.07	4	8.93	0.06	0.07
Soluble Potash, Flame (Citrate)	983.02(b)	050.61	5	8.92	0.33	0.04	5	8.92	0.33	0.04
Soluble Potash, Other		050.99	14	8.96	0.25	0.10	14	8.96	0.25	0.10
Method Group 050.XX PCT			55	9.00	0.24	0.08	52	9.00	0.24	0.07
Acid Soluble Calcium, ICP		101.30	3	0.34	0.52	0.01	3	0.34	0.52	0.01
Acid Soluble Magnesium, ICP		121.30	3	0.08	0.12	0.00	3	0.08	0.12	0.00
Sulfur, Gravimetric	980.02a	144.01	5	0.64	0.12	0.04	5	0.64	0.12	0.04
Sulfur, Gravimetric	980.02b	144.02	3	0.68	0.19	0.03	3	0.68	0.19	0.03

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Method	AOAC Ref.	Method Code	No. of Labs	Grand Avg.	Std. Dev.	Average Range of Dups	No. of Labs	Grand Avg.	Std. Dev.	Average Range of Dups
Sulfur, Gravimetric	980.02c	144.03	1	0.41	0.01	0.01	1	0.41	0.01	0.01
Sulfur, Other		144.99	17	0.56	0.10	0.01	17	0.56	0.10	0.01
Method Group 144.XX PCT			26	0.58	0.13	0.02	24	0.56	0.10	0.01
Acid Soluble Boron, Spectrometric	982.01	165.00	6	0.022	0.002	0.001	6	0.022	0.002	0.001
Acid Soluble Boron, Other		165.99	12	0.024	0.003	0.001	11	0.024	0.003	0.001
Method Group 165.XX PCT			18	0.023	0.003	0.001	17	0.023	0.003	0.001
Water Soluble Boron, Spectrometric	982.01	171.10	1	0.024	0.000	0.000	1	0.024	0.000	0.000
Cadmium, ICP		181.30	2	0.10	0.14	0.10	2	0.10	0.14	0.10
Water Soluble Chlorine, Titrimetric ...	928.02	190.00	1	0.54	0.04	0.06	1	0.54	0.04	0.06
Water Soluble Chlorine, Other		190.99	1	0.22	0.01	0.01	1	0.22	0.01	0.01
Method Group 190.XX PCT			2	0.38	0.18	0.03	2	0.38	0.18	0.03
Chromium, ICP		191.30	3	1.24	0.96	0.54	3	1.24	0.96	0.54
Acid Soluble Cobalt, ICP	965.11	202.30	3	117.63	181.93	0.33	3	117.63	181.93	0.33
Acid Soluble Copper, Atomic Absorption	975.01	221.00	9	0.0371	0.0032	0.0009	8	0.0374	0.0032	0.0006
Acid Soluble Copper, ICP		221.30	17	0.0387	0.0025	0.0010	16	0.0387	0.0025	0.0008
Acid Soluble Copper, Other		221.99	4	0.0375	0.0020	0.0011	4	0.0375	0.0020	0.0011
Method Group 221.XX PCT			30	0.0380	0.0027	0.0010	29	0.0380	0.0027	0.0009
Acid Soluble Iron, Atomic Absorption ..	980.01	241.00	9	0.06	0.01	0.00	9	0.06	0.01	0.00
Acid Soluble Iron, ICP		241.30	18	0.06	0.00	0.00	18	0.06	0.00	0.00
Acid Soluble Iron, Other		241.99	3	0.06	0.00	0.00	3	0.06	0.00	0.00
Method Group 241.XX PCT			30	0.06	0.01	0.00	29	0.06	0.01	0.00
Lead, ICP		251.30	3	1.03	0.80	0.11	3	1.03	0.80	0.11
Acid Soluble Manganese, AA	972.02a	261.00	6	0.050	0.002	0.001	6	0.050	0.002	0.001
Acid Soluble Manganese, AA	972.02b	261.11	1	0.051	0.001	0.001	1	0.051	0.001	0.001
Acid Soluble Manganese, ICP	972.02a	261.30	18	0.052	0.003	0.001	17	0.052	0.003	0.001
Acid Soluble Manganese, ICP	972.02b	261.31	1	0.055	0.000	0.000	1	0.055	0.000	0.000
Acid Soluble Manganese, Other		261.99	2	0.052	0.001	0.001	2	0.052	0.001	0.001
Method Group 261.XX PCT			28	0.052	0.003	0.001	27	0.052	0.003	0.001
Mercury, Other		281.99	1	0.00	0.00	0.00	1	0.00	0.00	0.00
Molybdenum, Atomic Absorption		289.00	1	10.50	2.12	3.00	1	10.50	2.12	3.00
Molybdenum, ICP		289.30	5	10.37	0.78	0.34	5	10.37	0.78	0.34
Molybdenum, Other		289.99	1	8.00	0.00	0.00	1	8.00	0.00	0.00
Method Group 289.XX PPM			7	10.05	1.23	0.67	6	9.97	1.16	0.28
Nickel, ICP		291.30	2	2.35	2.73	0.36	2	2.35	2.73	0.36
Sodium, Other		311.99	4	0.04	0.00	0.00	4	0.04	0.00	0.00
Acid Soluble Zinc, Atomic Absorption ..	975.02	321.00	9	0.047	0.004	0.001	8	0.048	0.004	0.001
Acid Soluble Zinc, ICP		321.30	18	0.050	0.003	0.001	17	0.049	0.003	0.001
Acid Soluble Zinc, Other		321.99	2	0.050	0.002	0.003	2	0.050	0.002	0.003
Method Group 321.XX PCT			29	0.049	0.003	0.001	28	0.049	0.003	0.001

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 001.10 PCT			Meth: 005.XX PCT			Meth: 010.60 PCT			Meth: 010.60 PCT			Meth: 010.XX PCT		
<u>Ammoniacal Nitrogen</u>			<u>Nitrogen From Urea</u>			<u>Total Nitrogen</u>			<u>Total Nitrogen</u>			<u>Total Nitrogen</u>		
<u>MgO Distillation</u>			394 3.06 -1.17			<u>Combustion</u>			<u>Combustion</u>			394 3.23 .39		
324 0.06 .71						086 3.21 R 1.33			422 2.54 s -5.50			369 3.20 .37		
			Meth: 010.11 PCT			360 3.27 .91						416 3.23 .35		
			Total Nitrogen			330 3.25 .85			Meth: 010.99 PCT			296 3.22 .32		
Meth: 001.99 PCT			<u>Modified Comprehensi</u>			234 3.25 .73			<u>Total Nitrogen</u>			434 3.22 .30		
<u>Ammoniacal Nitrogen</u>			405 3.49 1.71			096 3.25 .70			<u>Other</u>			105 3.22 .26		
<u>Other</u>			220 3.42 1.10			049 3.24 .67			415 3.56 S 4.95			131 3.21 .22		
402 3.01 1.29			371 3.31 .23			162 3.23 .57			354 3.55 S 3.76			028 3.21 .18		
Avg 1.15			309 3.30 .15			040 3.23 .55			300 3.23 .65			090 3.21 .18		
105 0.32 -.58			Avg 3.28			025 3.22 .54			394 3.23 .64			023 3.20 .16		
096 0.11 -.71			169 3.24 -.38			296 3.22 .48			Avg 3.16			009 3.20 .16		
			105 3.22 -.52			369 3.20 .46			105 3.03 -1.29			231 3.20 .15		
Meth: 001.XX PCT			090 3.21 -.60			136 3.19 .42						Avg 3.19		
<u>Ammoniacal Nitrogen</u>			073 3.08 -1.59			131 3.21 .36			Meth: 010.XX PCT			043 3.18 -.05		
402 3.01 1.61						028 3.21 .34			<u>Total Nitrogen</u>			024 3.17 -.14		
Avg 0.87			Meth: 010.12 PCT			231 3.20 .31			042 20.05 s 147.91			073 3.17 -.22		
105 0.32 -.43			Total Nitrogen			009 3.20 .28			415 3.56 s 4.34			324 3.16 -.28		
096 0.11 -.58			<u>Salicylic</u>			023 3.20 .28			037 3.65 s 4.07			055 3.15 -.36		
324 0.06 -.61			416 3.23 .88			043 3.18 .12			354 3.55 s 3.22			177 3.15 -.39		
			185 3.17 .78			024 3.17 .03			405 3.49 2.71			136 3.19 -.39		
Meth: 005.00 PCT						Avg 3.17			220 3.42 2.04			291 3.14 -.52		
<u>Nitrogen From Urea</u>			Meth: 010.16 PCT			073 3.17 -.13			247 3.39 R 1.87			262 3.13 -.55		
<u>Urease (as N)</u>			Total Nitrogen			324 3.16 -.18			007 3.35 1.51			372 3.13 -.57		
220 3.43 .71			<u>Raney</u>			055 3.15 -.22			325 3.35 1.45			185 3.17 -.60		
			434 3.22 .00			177 3.15 -.26			086 3.21 R 1.30			389 3.11 -.67		
Meth: 005.99 PCT						262 3.13 -.38			041 3.32 1.18			351 3.10 -.79		
<u>Nitrogen From Urea</u>			Meth: 010.60 PCT			291 3.14 -.38			371 3.31 1.06			394 3.09 -.84		
<u>Other</u>			Total Nitrogen			372 3.13 -.42			309 3.30 1.00			035 3.09 -.88		
309 3.30 1.17			<u>Combustion</u>			389 3.11 -.50			360 3.27 .75			073 3.08 -.93		
Avg 3.17			042 20.05 s 146.99			351 3.10 -.62			330 3.25 .72			254 3.06 -1.10		
434 3.16 -.22			022 3.18 s 5.14			394 3.09 -.66			234 3.25 .57			105 3.03 -1.36		
394 3.06 -1.04			037 3.65 s 4.21			035 3.09 -.71			096 3.25 .54			377 3.03 R -1.55		
			247 3.39 2.01			377 3.03 -1.39			049 3.24 .51			095 3.02 R -1.58		
Meth: 005.XX PCT			007 3.35 1.66			095 3.02 -1.41			169 3.24 .45			233 2.99 -1.71		
<u>Nitrogen From Urea</u>			325 3.35 1.60			233 2.99 -1.53			162 3.23 .43			114 2.94 -2.15		
220 3.43 1.29			041 3.32 1.34			114 2.94 -1.97			025 3.22 .40			428 2.94 -2.15		
309 3.30 .42						428 2.94 -1.97			300 3.23 .40			361 2.89 -2.64		
Avg 3.24			Meth: 005.99 PCT			361 2.89 -2.45			040 3.23 .39			022 3.18 s -5.17		
434 3.16 -.52			<u>Nitrogen From Urea</u>											
* X=Excluded from lab performance			220 3.43 1.29											
			309 3.30 .42											
			Avg 3.24											
			434 3.16 -.52											
			* X=Excluded from lab performance											
			S/s=Screened Outlier											
			R=Duplicate Range too large											
			A=Analysis beyond 3-s limits											

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 010.XX PCT			Meth: 020.40 PCT			Meth: 020.XX PCT			Meth: 041.10 PCT			Meth: 041.60 PCT		
<u>Total Nitrogen</u>			Total Phosphate			<u>Total Phosphate</u>			Dir Available Phosph			Dir Available Phosph		
422	2.54 s	-5.71	<u>Automated</u>			042	6.16	.81	<u>Grav Quimociac</u>			<u>EDTA Extract</u>		
			042	6.16	1.60	369	6.09	.75	055	6.38 s	2.49	073	6.10	.61
Meth: 020.10 PCT			096	6.05	.38	291	6.14	.45	254	6.40	2.34	296	6.10	.61
Total Phosphate			247	6.04	.34	177	6.13	.39	185	6.15	.65	028	6.08	.40
<u>Grav Quimociac</u>			Avg	6.01		324	6.13	.37	041	6.15	.53	Avg	6.03	
405	6.26 s	4.69	105	6.00	-.14	049	6.11	.32	Avg	6.08		351	5.83	-1.61
049	6.11	1.13	394	5.97	-.40	105	6.12	.30	040	6.07	-.13	105	5.38 s	-6.11
105	6.12	1.12	035	5.85	-1.59	402	6.10	.20	009	6.07	-.24	Meth: 041.99 PCT		
090	6.08	.27	Meth: 020.50 PCT			Avg	6.08		131	6.03	-.40	Dir Available Phosph		
Avg	6.08		Total Phosphate			090	6.08	-.08	296	6.06	-.61	Other		
114	6.07	-.15	<u>ICP</u>			114	6.07	-.11	105	6.03	-.71	105 6.00 .71		
095	6.07	-.37	389	6.48 S	1.60	095	6.07	-.14	260	5.96	-.92			
300	6.06	-.48	422	6.40	1.26	231	6.07	-.19	434	5.93	-1.16	Meth: 041.XX PCT		
434	6.02	-1.87	330	6.21	.25	300	6.06	-.20	Meth: 041.40 PCT			<u>Dir Available Phosph</u>		
Meth: 020.20 PCT			Avg	6.12		390	6.07	-.20	Dir Available Phosph			055	6.38 R	2.22
Total Phosphate			291	6.14	-.11	096	6.05	-.26	<u>Automated</u>			254	6.40	2.12
<u>Spectrometric</u>			390	6.07	-.50	247	6.04	-.43	131	5.96	.71	007	6.37	1.88
415	6.41	2.10	361	6.01	-.80	372	6.04	-.46	Avg	5.96		023	6.35	1.76
262	6.30	1.39	372	5.98	-1.00	361	6.01	-.62	025	4.59 S	-97.23	043	6.19	.91
416	6.20	.69	432	6.03	-1.18	434	6.02	-.63	Meth: 041.50 PCT			185	6.15	.66
177	6.13	.28	Meth: 020.99 PCT			309	6.00	-.66	ICP			041	6.15	.59
324	6.13	.26	Total Phosphate			105	6.00	-.66	007			296	6.06	.49
Avg	6.09		Other			371	5.98	-.83	023			009	6.13	.43
231	6.07	-.20	402	6.10	.77	394	5.97	-.89	023			073	6.10	.26
169	6.04	-.38	Avg	6.04		409	5.98	-.90	009			296	6.10	.26
309 6.00 -.61			409	5.98	-.95	372	5.98	-.98	Avg			009	6.07	.20
369 6.09 R -.64			Meth: 020.XX PCT			220	5.94	-1.22	023			028	6.08	.10
371 5.98 -.76			Total Phosphate			432	6.03 R	-1.52	009			040	6.07	.09
220 5.94 -1.09			389	6.48 s	3.08	234	5.88	-1.60	354			Avg	6.06	
234 5.88 -1.42			415	6.41	2.53	035	5.85	-1.85	325			131	6.03	-.18
376 5.43 s -4.46			422	6.40	2.53	376	5.43 s	-5.18	377			354	6.03	-.23
428 3.49 s -17.38			262	6.30	1.70	428	3.49 s	-20.35	043			105	6.00	-.41
			405	6.26	1.42	Meth: 040.20 PCT			Meth: 041.60 PCT			360	6.03	-.45
			330	6.21	.97	InDir Available Phos			Dir Available Phosph			105	6.03	-.53
			416	6.20	.87	<u>Spectrometri</u>			<u>EDTA Extract</u>			131	5.96	-.62
			* X=Excluded from lab performance			220	5.89	.71	043 6.19 R 1.46			260	5.96	-.62
			S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits			325	5.96	-.64

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 041.XX PCT			Meth: 050.30 PCT			Meth: 050.60 PCT			Meth: 050.XX PCT			Meth: 050.XX PCT		
<u>Dir Available Phosph</u>			Soluble Potash			Soluble Potash			<u>Soluble Potash</u>			<u>Soluble Potash</u>		
434	5.93	-.83	<u>AA (Oxalate)</u>			<u>Flame (Oxalate)</u>			376	13.10 s	16.89	169	8.99	-.19
351	5.83	-1.41	262	9.07	-.27	415	11.22 S	37.71	415	11.22 s	9.14	049	8.99	-.21
377	5.80	-1.60	369	8.95	-.68	169	8.99	1.30	432	10.35 s	5.56	369	8.95	-.30
043	5.74	-1.99	040	8.96 R	-.86	105	8.93	.82	422	10.31 s	5.39	105	8.93	-.36
105	5.38 s	-4.75	136	8.84	-1.10	Avg	8.93		389	9.90 s	3.70	131	8.90	-.42
025	4.59 s	-9.08	351	8.73	-1.53	131	8.90	-.49	185	9.50	2.05	055	8.90	-.48
						055	8.90	-.94	023	9.46	1.87	254	8.88	-.50
						309	7.05 S	-30.98	095	9.43	1.75	394	8.88	-.51
Meth: 048.20 PCT			Meth: 050.31 PCT			Meth: 050.61 PCT			095 9.28 1.23			372 8.88 -.53		
Spectrometric			Soluble Potash			Soluble Potash			095 9.28 1.00			114 8.87 -.57		
309	0.20	.00	<u>AA (Citrate)</u>			<u>Flame (Citrate)</u>			402 9.24 .98			325 8.89 -.62		
			095	9.28	.92	025 9.22 .89			260 9.24 .90			040 8.96 R -.64		
			Avg	9.08		041 9.09 .53			009 9.17 R .90			136 8.84 -.68		
Meth: 050.00 PCT			254	8.88	-.81	028 9.03 .32			025 9.22 .88			043 8.83 -.75		
Soluble Potash						105 8.96 .11			428 9.19 .77			360 8.80 -.91		
<u>STPB Oxalate</u>			Meth: 050.50 PCT			Avg 8.92			022 9.14 .75			390 8.82 R -.94		
095	9.43	1.98	Soluble Potash			035 8.32 -1.82			300 9.18 .74			377 8.73 -1.10		
220	9.32	1.34	<u>ICP (Oxalate)</u>			Meth: 050.99 PCT			043 9.18 .74			351 8.73 -1.11		
022	9.14 R	.78	422	10.31 S	5.25	Soluble Potash			434 9.16 .73			042 8.65 -1.47		
043	9.18	.53	372	9.02	.86	Avg			073 9.16 .64			361 8.60 -1.66		
009	9.14	.31	Avg	8.76		324 8.50 -.87			009 9.14 .58			324 8.50 -2.05		
090	9.10	.27	354	8.17 S	-2.03	354 8.17 S -2.03			234 9.14 .57			371 8.40 -2.48		
Avg	9.09					<u>Other</u>			177 9.13 .51			035 8.32 -2.79		
055	9.06	-.21	Meth: 050.51 PCT			376 13.10 s 16.79			330 9.09 .49			354 8.17 s -3.46		
231	9.04	-.36	Soluble Potash			402 9.24 1.14			090 9.10 .43			309 7.05 s -8.04		
416	9.03	-.51	<u>ICP (Citrate)</u>			260 9.24 1.12			007 9.10 .43					
049	8.99	-.67	432	10.35 S	6.62	300 9.18 .88			041 9.09 .42			Meth: 101.30 PCT		
372	8.88	-1.29	389	9.90 S	4.56	434 9.16 .86			262 9.07 .32			Acid Soluble Calcium		
114	8.87	-1.34	009	9.17	1.39	177 9.13 .66			416 9.03 .25			<u>ICP</u>		
			007	9.10	.91	330 9.09 .61			055 9.06 .22			422 1.00 1.29		
Meth: 050.30 PCT			007	9.10	.91	247 9.00 .22			231 9.04 .17			Avg 0.34		
Soluble Potash			291	8.97	.33	131 9.00 .18			247 9.00 .14			247 0.01 -.64		
<u>AA (Oxalate)</u>			Avg	8.90		Avg 8.96			028 9.03 .14			433 0.00 -.65		
185	9.50	1.54	043	8.83	-.42	394 8.88 -.35			372 9.02 .08					
023	9.46	1.37	377	8.73	-.76	325 8.89 -.50			131 9.00 .06			Meth: 121.30 PCT		
428	9.19	.31	361	8.60	-1.37	360 8.80 -.76			Avg 9.00			Acid Soluble Magnesi		
073	9.16	.19				390 8.82 -.81			291 8.97 -.13			<u>ICP</u>		
234	9.14	.11				042 8.65 -1.30			105 8.96 -.17			422 0.24 1.29		
Avg	9.11					371 8.40 -2.29			A=Analysis beyond 3-s limits					
* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large								

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 121.30 PCT			Meth: 144.99 PCT			Meth: 144.XX PCT			Meth: 165.99 PCT			Meth: 181.30 PPM		
Acid Soluble Magnesi			Sulfur			Sulfur			Acid Soluble Boron			Cadmium		
ICP			Other			028	0.51	- .51	Other			ICP		
Avg	0.08		231	0.62	.62	247	0.44	-1.13	433	0.018	-1.75	324	0.00	-.71
247	0.01	-.62	422	0.62	.61	090	0.43	-1.19						
433	0.00	-.67	390	0.61	.57	371	0.43	-1.23	Meth: 165.XX PCT			Meth: 190.00 PCT		
			291	0.60	.40	220	0.41	-1.47	Acid Soluble Boron			Water Soluble Chlori		
Meth: 144.01 PCT			009	0.59	.35	096	0.35	-2.04	422	0.236 s	68.74	Titrimetric		
Sulfur			131	0.58	.27	354	0.33	-2.21	096	0.230 s	66.94	422	0.54	-.71
Gravimetric			035	0.56	.05	136	0.11 s	-4.32	354	0.059 s	11.49			
105	0.77	1.11	Avg	0.56					291	0.029	1.78	Meth: 190.99 PCT		
262	0.71	.61	300	0.54	-.18	Meth: 165.00 PCT			360	0.027	1.29	Water Soluble Chlori		
324	0.65	.09	247	0.44	-1.13	Acid Soluble Boron			043	0.026 R	.94	Other		
Avg	0.64		090	0.43	-1.19	Spectrometric			090	0.026	.82	009	0.22	.71
296	0.63	-.12	096	0.35	-2.05	040	0.025	1.14	432	0.026	.82			
371	0.43	-1.70	354	0.33	-2.22	028	0.024	.74	324	0.025	.68	Meth: 190.XX PCT		
						296	0.023	.51	330	0.025	.55	Water Soluble Chlori		
Meth: 144.02 PCT			Meth: 144.XX PCT			023	0.022	.10	040	0.025	.51	422	0.54	.87
Sulfur			Sulfur			Avg	0.022		434	0.024	.32	Avg	0.38	
Gravimetric			372	5.71 s	49.15	037	0.020	-.94	028	0.024	.23	009	0.22	-.86
043	0.91	1.25	043	0.91 R	3.38	220	0.018	-1.58	Avg	0.023				
Avg	0.68		105	0.77 R	2.00				231	0.023	.00	Meth: 191.30 PPM		
434	0.62	-.31	262	0.71	1.42	Meth: 165.99 PCT			296	0.023	.00	Chromium		
028	0.51	-.92	389	0.65	.88	Acid Soluble Boron			023	0.022	-.33	ICP		
136	0.11 S	-3.04	023	0.65	.83	Other			300	0.020	-.95	009	2.35	1.26
			324	0.65	.83	422	0.236 s	65.47	037	0.020	-1.15	Avg	1.24	
Meth: 144.03 PCT			376	0.64	.73	096	0.230 s	63.76	009	0.019	-1.22	324	0.90	-.35
Sulfur			296	0.63	.71	354	0.059 S	10.77	433	0.018	-1.61	291	0.47	-.89
Gravimetric			360	0.63	.69	291	0.029	1.49	220	0.018	-1.65			
220	0.41	-.71	330	0.63	.68	360	0.027	1.02				Meth: 202.30 PPM		
			231	0.62	.59	043	0.026 R	.73	Meth: 171.10 PCT			Acid Soluble Cobalt		
Meth: 144.99 PCT			434	0.62	.59	090	0.026	.58	Water Soluble Boron			ICP		
Sulfur			422	0.62	.58	432	0.026	.58	Spectrometric			035	352.50	1.29
Other			390	0.61	.54	324	0.025	.44	296	0.024	.00	Avg	117.63	
372	5.71 s	49.90	291	0.60	.38	330	0.025	.32				291	0.40	-.64
389	0.65	.91	009	0.59	.33	434	0.024	.09	Meth: 181.30 PPM			324	0.00	-.65
023	0.65	.87	131	0.58	.25	Avg	0.024		Cadmium					
376	0.64	.76	035	0.56	.03	231	0.023	-.22	ICP					
360	0.63	.72	Avg	0.56		300	0.020	-1.12	291	0.21	1.00			
330	0.63	.71	300	0.54	-.19	009	0.019	-1.38	Avg	0.10				
* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits					

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 221.00 PCT			Meth: 221.99 PCT			Meth: 221.XX PCT			Meth: 241.30 PCT			Meth: 241.XX PCT		
Acid Soluble Copper			Acid Soluble Copper			Acid Soluble Copper			Acid Soluble Iron			Acid Soluble Iron		
<u>Atomic Absorption</u>			<u>Other</u>			<u>ICP</u>			<u>ICP</u>			<u>ICP</u>		
095	0.4005 s	113.88	247	0.0395	.95	055	0.0345	-1.39	009	0.06	-.72	131	0.06	-.25
028	0.0398	.77	402	0.0385	.55	372	0.0332	-1.76	433	0.06	-.80	009	0.06	-.35
220	0.0395	.69	Avg	0.0375		262	0.0300	-2.92	035	0.06	-1.33	433	0.06	-.40
371	0.0395	.69	022	0.0374	-.14	376	0.0040 s	-12.41	231	0.05	-1.93	434	0.06	-.42
351	0.0395	.67	042	0.0347	-1.51	Meth: 241.00 PCT			Meth: 241.99 PCT			043		
434	0.0375	.16	Meth: 221.XX PCT			Acid Soluble Iron			Acid Soluble Iron			035		
Avg	0.0374		<u>Acid Soluble Copper</u>			<u>Atomic Absorption</u>			<u>Other</u>			028		
428	0.0369	-.18	095	0.4005 s	132.27	055	0.06	1.26	402	0.06	1.32	231		
043	0.0363	-.34	090	0.0420	1.50	351	0.06	.93	Avg	0.06		028		
055	0.0345 R	-1.02	432	0.0420	1.46	043	0.06	.72	042	0.06	-.47	262		
262	0.0300	-2.31	360	0.0415	1.29	220	0.06	.50	022	0.06	-.73	428		
Meth: 221.30 PCT			023	0.0410	1.09	371	0.06	.42	Meth: 241.XX PCT			Meth: 251.30 PPM		
Acid Soluble Copper			354	0.0390 R	.81	434	0.06	.35	Acid Soluble Iron			Lead		
<u>ICP</u>			009	0.0394	.72	Avg	0.06		<u>ICP</u>			<u>ICP</u>		
090	0.0420	1.39	028	0.0398	.67	028	0.05	-.94	422	0.08 s	4.17	291	1.60	.72
432	0.0420	1.33	330	0.0397	.61	262	0.05	-1.22	354	0.07	2.26	043	1.50	.58
360	0.0415	1.14	371	0.0395	.57	428	0.05	-1.62	330	0.07	1.58	Avg	1.03	
023	0.0410	.93	220	0.0395	.57	Meth: 241.30 PCT			324	0.07	1.54	324	0.00	-1.28
354	0.0390 R	.81	351	0.0395	.54	Acid Soluble Iron			032	0.07	1.01	Meth: 261.00 PCT		
009	0.0394	.63	247	0.0395	.53	<u>ICP</u>			055	0.06 R	.92	Acid Soluble Mangane		
330	0.0397	.41	390	0.0394	.51	422	0.08 s	4.32	090	0.06	.83	<u>AA</u>		
390	0.0394	.29	324	0.0389	.34	354	0.07	2.18	389	0.06	.65	351	0.053	1.42
324	0.0389	.15	433	0.0388	.31	330	0.07	1.43	023	0.06	.53	043	0.051	.83
433	0.0388	.13	402	0.0385	.26	432	0.07	1.39	351	0.06	.45	220	0.050	.13
Avg	0.0387		131	0.0385	.18	324	0.07	.78	402	0.06	.41	Avg	0.050	
131	0.0385	-.08	Avg	0.0380		090	0.06	.64	360	0.06	.28	055	0.050	-.72
231	0.0380	-.27	231	0.0380	.00	389	0.06	.38	390	0.06	.23	028	0.048	-.84
300	0.0376	-.45	300	0.0376	-.17	023	0.06	.35	300	0.06	.23	095	0.047	-1.25
422	0.0380	-.48	022	0.0374	-.26	Avg	0.06		042	0.06	.13	262	0.030 s	-9.38
389	0.0365	-.89	434	0.0375	-.26	360	0.06	-.13	291	0.06	.12	Meth: 261.11 PCT		
291	0.0345	-1.68	422	0.0380	-.36	300	0.06	-.13	Avg	0.06		Acid Soluble Mangane		
372	0.0332	-2.19	428	0.0369	-.43	390	0.06	-.14	220	0.06	-.03	<u>AA</u>		
376	0.0040 s	-13.86	389	0.0365	-.58	291	0.06	-.30	247	0.06	-.03	434	0.051	-.71
			043	0.0363	-.63	247	0.06	-.39	096	0.06	-.03			
			291	0.0345	-1.29	096	0.06	-.39	371	0.06	-.15			
			042	0.0347	-1.30	131	0.06	-.63	022	0.06	-.21			

* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 261.30 PCT			Meth: 261.XX PCT			Meth: 289.30 PPM			Meth: 311.99 PCT			Meth: 321.30 PCT		
<u>Acid Soluble Manganese</u>			<u>Acid Soluble Manganese</u>			<u>Molybdenum</u>			<u>Sodium</u>			<u>Acid Soluble Zinc</u>		
<u>ICP</u>			<u>ICP</u>			<u>ICP</u>			<u>Other</u>			<u>ICP</u>		
432	0.059	1.97	354	0.055 R	1.23	291	11.39	1.39	009	0.04	-1.28	035	0.046	-1.20
090	0.058	1.87	324	0.055	1.15	009	10.90	.69				433	0.045	-1.68
330	0.058	1.66	023	0.054	.61	Avg	10.37		Meth: 321.00 PCT			Meth: 321.99 PCT		
354	0.055 R	1.03	360	0.054	.61	324	10.30	-.27	<u>Acid Soluble Zinc</u>			<u>Acid Soluble Zinc</u>		
389	0.054	.53	022	0.052	.38	231	9.85	-.70	<u>Atomic Absorption</u>			<u>Other</u>		
023	0.054	.40	351	0.053	.36	433	9.41	-1.23	095	0.052	1.11	042	0.051	1.06
360	0.054	.40	422	0.052	.34	Meth: 289.99 PPM			434	0.052	.98	Avg	0.050	
390	0.052	.22	390	0.052	.32	<u>Molybdenum</u>			220	0.049	.40	022	0.049 X	-.62
Avg	0.052		Avg	0.052		<u>Other</u>			428	0.049	.38	Meth: 321.XX PCT		
422	0.052	-.32	042	0.051	-.22	042	8.00	.00	028	0.049	.24	<u>Acid Soluble Zinc</u>		
231	0.051	-.40	231	0.051	-.24	Meth: 289.XX PPM			Avg	0.048		432	0.058 s	3.02
247	0.051	-.43	247	0.051	-.28	<u>Molybdenum</u>			043	0.047	-.32	090	0.054 R	1.71
009	0.051	-.55	131	0.051	-.41	220	10.50 R	1.37	351	0.046	-.56	131	0.054	1.70
131	0.051	-.56	009	0.051	-.41	291	11.39	1.26	055	0.043 R	-1.51	330	0.054	1.70
300	0.050	-.69	434	0.051	-.44	009	10.90	.80	262	0.040	-2.13	095	0.052	1.03
096	0.050	-.71	043	0.051	-.46	324	10.30	.33	Meth: 321.30 PCT			042	0.051	.89
291	0.050	-.77	300	0.050	-.55	Avg	9.97		<u>Acid Soluble Zinc</u>			354	0.052	.89
035	0.048	-1.24	096	0.050	-.57	231	9.85	-.17	432	0.058 s	3.52	023	0.052	.89
433	0.048	-1.25	220	0.050	-.57	433	9.41	-.49	090	0.054 R	1.91	434	0.052	.89
Meth: 261.31 PCT			291	0.050	-.66	042	8.00	-1.70	330	0.054	1.88	389	0.051	.78
<u>Acid Soluble Manganese</u>			055	0.050	-.89	Meth: 291.30 PPM			131	0.054	1.87	360	0.050	.39
<u>ICP</u>			035	0.048	-1.13	<u>Nickel</u>			354	0.052	.86	220	0.049	.33
324	0.055	.71	433	0.048	-1.15	<u>ICP</u>			389	0.051	.75	376	0.050	.28
Meth: 261.99 PCT			028	0.048	-1.24	291	4.70	.87	324	0.051	.63	022	0.049 X	.26
<u>Acid Soluble Manganese</u>			095	0.047	-1.51	Avg	2.35		360	0.050	.24	428	0.049	.18
<u>Other</u>			262	0.030 s	-7.18	324	0.00	-.86	376	0.050	.20	Avg	0.049	
022	0.052	1.04	Meth: 281.99 PPM			Meth: 311.99 PCT			Avg	0.049		028	0.049	-.08
Avg	0.052		<u>Mercury</u>			<u>Sodium</u>			231	0.049	-.41	231	0.049	-.18
042	0.051	-.64	<u>Other</u>			<u>Other</u>			422	0.049	-.41	422	0.049	-.18
Meth: 261.XX PCT			296	0.00	-.71	035	0.04	1.06	009	0.048	-.58	390	0.048	-.29
<u>Acid Soluble Manganese</u>			Meth: 289.00 PPM			<u>Molybdenum</u>			390	0.048	-.58	009	0.048	-.30
432	0.059	2.29	<u>Atomic Absorption</u>			<u>Atomic Absorption</u>			291	0.048	-.68	291	0.048	-.40
090	0.058	2.18	220	10.50	.71	<u>Avg</u>			247	0.048	-.76	247	0.048	-.40
330	0.058	1.96				Avg			300	0.047	-.81	300	0.047	-.45
* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits														

Laboratory Averages & Accuracy Indexes

<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>
Meth: 321.XX PCT														
<u>Acid Soluble Zinc</u>														
043	0.047	-.65												
035	0.046	-.76												
351	0.046	-.93												
433	0.045	-1.14												
055	0.043	-2.06												
262	0.040	-2.80												

* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits

Method Evaluation - Z Values Based on 1 Reports

Method Code	Number Of Labs	Avg Bias of Labs	Std Dev of Biases	Std Dev Within Labs	Method Code	Number Of Labs	Avg Bias of Labs	Std Dev of Biases	Std Dev Within Labs
001.99	3	0.00	1.12	0.06	165.XX	21	7.045	20.384	0.373
001.XX	4	0.00	1.08	0.06	181.30	2	0.00	1.00	0.50
005.99	3	0.00	1.11	0.11	181.XX	2	0.00	1.00	0.50
005.XX	4	0.00	1.06	0.16	190.XX	2	0.00	1.21	0.11
010.11	8	0.00	1.02	0.18	191.30	3	0.00	1.03	0.35
010.12	3	0.00	0.98	0.44	191.XX	3	0.00	1.03	0.35
010.60	44	3.32	22.21	0.86	202.30	3	0.00	1.12	0.00
010.99	5	1.52	2.22	1.41	202.XX	3	0.00	1.12	0.00
010.XX	58	2.64	19.46	0.86	221.00	10	11.298	36.056	0.2324
020.10	8	0.57	1.78	0.68	221.30	18	- 0.763	3.3987	0.2846
020.20	15	- 1.46	4.64	0.24	221.99	4	0.0000	1.0036	0.3458
020.40	6	0.00	0.99	0.32	221.XX	32	3.7569	23.572	0.2630
020.50	8	0.00	0.95	0.39	241.00	9	0.00	0.98	0.31
020.99	2	0.00	1.03	0.46	241.30	19	0.23	1.38	0.21
020.XX	37	- 0.60	3.61	0.37	241.99	3	0.00	0.31	0.88
041.10	11	0.19	1.12	0.51	241.XX	31	0.15	1.21	0.25
041.40	2	- 48.61	68.75	0.56	251.30	3	0.00	1.11	0.09
041.50	8	0.00	1.02	0.15	251.XX	3	0.00	1.11	0.09
041.60	6	- 0.67	2.51	1.22	261.00	7	- 1.341	3.650	0.387
041.XX	22	- 0.34	2.23	0.64	261.30	18	0.038	0.969	0.295
050.00	12	0.02	0.96	0.28	261.99	2	0.000	0.787	0.664
050.30	10	- 0.06	0.98	0.22	261.XX	29	- 0.216	1.646	0.290
050.31	2	0.00	1.14	0.31	289.30	5	0.00	1.02	0.26
050.50	4	0.81	3.18	0.18	289.XX	7	0.06	0.96	0.51
050.51	8	1.40	2.77	0.28	291.30	2	0.00	1.22	0.09
050.60	6	1.12	21.80	0.64	291.XX	2	0.00	1.22	0.09
050.61	5	0.00	1.06	0.08	311.99	4	0.00	0.89	0.53
050.99	15	1.12	4.44	0.25	311.XX	4	0.00	0.89	0.53
050.XX	55	0.50	3.20	0.25	321.00	9	- 0.162	1.077	0.174
101.30	3	0.00	1.12	0.01	321.30	19	0.266	1.255	0.384
101.XX	3	0.00	1.12	0.01	321.99	2	0.000	0.682	0.719
121.30	3	0.00	1.12	0.02	321.XX	29	0.124	1.130	0.296
121.XX	3	0.00	1.12	0.02					
144.01	5	0.00	1.04	0.17					
144.02	4	- 0.76	1.77	0.11					
144.99	18	2.77	11.80	0.07					
144.XX	28	1.79	9.39	0.12					
165.00	6	0.000	1.021	0.220					
165.99	15	9.369	22.615	0.409					