

MAGRUDER - Fertilizer Check Sample No. - 200502 Grade 6-22-4

- Pass 1 Results for 81 Labs - - Pass 2 Results for 81 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	5.98	0.00	0.00	1	5.98	0.00	0.00
Ammoniacal Nitrogen, Other .....		001.99	6	5.99	0.32	0.07	6	5.99	0.32	0.07
Method Group 001.XX PCT			7	5.99	0.30	0.06	7	5.99	0.30	0.06
Water Insoluble Nitrogen, Other .....		003.99	1	6.20	0.04	0.05	1	6.20	0.04	0.05
Ammon & Nitrate N, Devarda .....	892.01	009.10	1	6.09	0.01	0.02	1	6.09	0.01	0.02
Total Nitrogen, Reduced Iron .....		010.10	2	6.14	0.13	0.12	2	6.14	0.13	0.12
Total Nitrogen, Modified Comprehensive	978.02	010.11	6	6.12	0.11	0.07	5	6.09	0.07	0.01
Total Nitrogen, Salicylic .....	955.04D	010.12	3	5.97	0.05	0.02	3	5.97	0.05	0.02
Total Nitrogen, Combustion .....		010.60	53	6.09	0.13	0.05	51	6.09	0.12	0.04
Total Nitrogen, Other .....		010.99	3	6.16	0.18	0.08	3	6.16	0.18	0.08
Method Group 010.XX PCT			67	6.09	0.13	0.05	64	6.09	0.12	0.04
Total Phosphate, Grav Quimociac .....	962.02	020.10	6	21.42	0.17	0.09	5	21.36	0.10	0.04
Total Phosphate, Spectrometric .....	958.01	020.20	14	21.60	0.37	0.18	13	21.60	0.32	0.08
Total Phosphate, Automated .....	978.01	020.40	5	21.39	0.22	0.18	5	21.39	0.22	0.18
Total Phosphate, ICP .....		020.50	7	21.76	0.45	0.27	8	21.90	0.58	0.26
Total Phosphate, Other .....		020.99	1	21.60	0.04	0.06	1	21.60	0.04	0.06
Method Group 020.XX PCT			33	21.57	0.36	0.18	30	21.55	0.28	0.11
Insoluble Phosphate, Grav Quimociac ...	963.03C	030.10	1	0.16	0.01	0.01	1	0.16	0.01	0.01
Insoluble Phosphate, Spectrometric ....	963.03C	030.20	1	0.20	0.01	0.02	1	0.20	0.01	0.02
Insoluble Phosphate, Automated .....	978.01	030.40	1	0.27	0.03	0.04	1	0.27	0.03	0.04
Insoluble Phosphate, Other .....		030.99	2	0.55	0.07	0.02	2	0.55	0.07	0.02
Method Group 030.XX PCT			5	0.34	0.18	0.02	5	0.34	0.18	0.02
InDir Available Phosphate, Grav Quim ..	960.02	040.10	1	21.29	0.02	0.03	1	21.29	0.02	0.03
InDir Available Phosphate, Automated ..	960.02	040.40	1	21.18	0.06	0.08	1	21.18	0.06	0.08
InDir Available Phosphate, ICP .....		040.50	1	21.28	0.07	0.10	1	21.28	0.07	0.10
InDir Available Phosphate, Other .....		040.99	1	21.30	0.19	0.27	1	21.30	0.19	0.27
Method Group 040.XX PCT			4	21.26	0.09	0.12	4	21.26	0.09	0.12
Dir Available Phosphate, Grav Quimociac	960.03E	041.10	17	21.30	0.25	0.07	17	21.30	0.25	0.07
Dir Available Phosphate, Spectrometric	960.03D	041.20	4	20.87	0.26	0.13	4	20.87	0.26	0.13
Dir Available Phosphate, Automated ....	978.01	041.40	4	21.17	0.49	0.07	4	21.17	0.49	0.07
Dir Available Phosphate, ICP .....		041.50	6	21.08	0.63	0.17	5	20.84	0.32	0.09
Dir Available Phosphate, EDTA Extract .	993.01	041.60	9	21.30	0.43	0.10	9	21.30	0.43	0.10
Dir Available Phosphate, Other .....		041.99	1	21.12	0.02	0.03	1	21.12	0.02	0.03
Method Group 041.XX PCT			41	21.21	0.41	0.10	40	21.18	0.37	0.09
Water Soluble Phosphate, Spectrometric	970.01	048.20	5	14.80	0.64	0.10	5	14.80	0.64	0.10
Soluble Potash, STPB Oxalate .....	958.02	050.00	16	4.99	0.20	0.07	15	4.97	0.18	0.06
Soluble Potash, STPB Citrate .....	969.04	050.10	1	5.03	0.13	0.18	1	5.03	0.13	0.18
Soluble Potash, AA (Oxalate) .....		050.30	11	4.91	0.28	0.05	10	4.92	0.29	0.04
Soluble Potash, AA (Citrate) .....		050.31	1	4.39	0.00	0.00	1	4.39	0.00	0.00

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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
Soluble Potash, ICP (Oxalate) .....		050.50	10	4.89	0.36	0.06	9	4.87	0.37	0.04
Soluble Potash, ICP (Citrate) .....		050.51	9	4.95	0.22	0.08	9	4.95	0.22	0.08
Soluble Potash, Flame (Oxalate) .....	983.02(a)	050.60	6	4.89	0.21	0.06	5	4.95	0.18	0.03
Soluble Potash, Flame (Citrate) .....	983.02(b)	050.61	4	5.00	0.17	0.12	4	5.00	0.17	0.12
Soluble Potash, Other .....		050.99	14	4.97	0.29	0.10	14	4.97	0.29	0.10
Method Group 050.XX PCT			72	4.94	0.27	0.07	69	4.92	0.25	0.07
Free Water, Vacuum Oven .....	965.08B	060.00	7	1.21	0.21	0.07	7	1.21	0.21	0.07
Free Water, Other .....		060.99	1	1.26	0.13	0.18	1	1.26	0.13	0.18
Method Group 060.XX PCT			8	1.22	0.19	0.08	8	1.22	0.19	0.08
Acid Soluble Calcium, AA .....	945.04	101.00	8	5.29	0.44	0.12	8	5.29	0.44	0.12
Acid Soluble Calcium, ICP .....		101.30	25	5.44	0.42	0.13	23	5.45	0.43	0.09
Acid Soluble Calcium, Other .....		101.99	1	6.05	0.08	0.12	1	6.05	0.08	0.12
Method Group 101.XX PCT			34	5.42	0.44	0.13	32	5.43	0.44	0.10
Acid Soluble Magnesium, AA .....	984.01	121.00	13	2.75	0.12	0.06	13	2.75	0.12	0.06
Acid Soluble Magnesium, ICP .....		121.30	25	2.81	0.15	0.09	22	2.83	0.13	0.05
Acid Soluble Magnesium, Other .....		121.99	2	2.91	0.23	0.01	2	2.91	0.23	0.01
Method Group 121.XX PCT			40	2.80	0.15	0.08	37	2.81	0.14	0.05
Water Soluble Magnesium, AA .....		131.00	3	1.90	0.59	0.03	3	1.90	0.59	0.03
Sulfur, Gravimetric .....	980.02a	144.01	9	9.53	0.12	0.07	9	9.53	0.12	0.07
Sulfur, Gravimetric .....	980.02b	144.02	2	9.39	0.11	0.05	2	9.39	0.11	0.05
Sulfur, Spectrometric .....		144.70	1	9.10	0.13	0.18	1	9.10	0.13	0.18
Sulfur, Other .....		144.99	17	9.20	0.32	0.14	17	9.20	0.32	0.14
Method Group 144.XX PCT			29	9.31	0.29	0.11	28	9.34	0.24	0.11
Arsenic, Atomic Absorption .....		151.00	3	10.05	1.72	0.91	3	10.05	1.72	0.91
Arsenic, ICP .....		151.30	6	12.18	3.31	1.11	5	11.70	3.32	0.55
Arsenic, Other .....		151.99	1	10.75	0.07	0.10	1	10.75	0.07	0.10
Method Group 151.XX PPM			10	11.40	2.85	0.95	9	11.05	2.71	0.62
Acid Soluble Boron, Spectrometric .....	982.01	165.00	10	0.340	0.016	0.010	9	0.340	0.015	0.005
Acid Soluble Boron, Other .....		165.99	16	0.349	0.033	0.017	14	0.350	0.032	0.008
Method Group 165.XX PCT			27	0.348	0.030	0.015	24	0.349	0.029	0.008
Water Soluble Boron, Spectrometric .....	982.01	171.10	1	0.295	0.007	0.010	1	0.295	0.007	0.010
Cadmium, Atomic Absorption .....		181.00	6	6.13	0.76	0.46	6	6.13	0.76	0.46
Cadmium, ICP .....		181.30	11	6.32	0.71	0.51	10	6.35	0.66	0.36
Cadmium, Other .....		181.99	1	6.65	0.21	0.30	1	6.65	0.21	0.30
Method Group 181.XX PPM			18	6.28	0.71	0.48	17	6.29	0.68	0.39
Water Soluble Chlorine, Titrimetric ...	928.02	190.00	2	0.42	0.03	0.00	2	0.42	0.03	0.00
Water Soluble Chlorine, Other .....		190.99	1	0.45	0.00	0.00	1	0.45	0.00	0.00
Method Group 190.XX PCT			3	0.43	0.02	0.00	3	0.43	0.02	0.00
Chromium, Atomic Absorption .....		191.00	1	149.00	22.63	32.00	1	149.00	22.63	32.00

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Chromium, ICP .....		191.30	10	108.50	51.03	4.88	10	108.50	51.03	4.88
Chromium, Other .....		191.99	1	131.50	0.71	1.00	1	131.50	0.71	1.00
Method Group 191.XX PPM			12	113.79	48.30	6.82	11	110.59	49.01	4.53
Acid Soluble Cobalt, AA .....		202.00	2	91.75	2.22	3.50	2	91.75	2.22	3.50
Acid Soluble Cobalt, ICP .....	965.11	202.30	12	87.16	10.60	3.93	12	87.16	10.60	3.93
Acid Soluble Cobalt, Other .....		202.99	1	74.25	0.64	0.90	1	74.25	0.64	0.90
Method Group 202.XX PPM			15	86.91	10.20	3.67	15	86.91	10.20	3.67
Acid Soluble Copper, Atomic Absorption	975.01	221.00	12	0.3357	0.0109	0.0045	12	0.3357	0.0109	0.0045
Acid Soluble Copper, ICP .....		221.30	25	0.3312	0.0239	0.0096	24	0.3313	0.0232	0.0070
Acid Soluble Copper, Other .....		221.99	2	0.3368	0.0356	0.0115	2	0.3368	0.0356	0.0115
Method Group 221.XX PCT			40	0.3318	0.0221	0.0079	39	0.3319	0.0216	0.0063
Acid Soluble Iron, Atomic Absorption ..	980.01	241.00	12	1.50	0.25	0.04	11	1.49	0.26	0.03
Acid Soluble Iron, ICP .....		241.30	26	1.57	0.27	0.05	24	1.58	0.28	0.03
Acid Soluble Iron, Other .....		241.99	5	1.48	0.22	0.03	5	1.48	0.22	0.03
Method Group 241.XX PCT			43	1.54	0.26	0.05	40	1.54	0.27	0.03
Lead, Atomic Absorption .....		251.00	4	12.03	3.57	2.58	4	12.03	3.57	2.58
Lead, ICP .....		251.30	10	16.80	2.77	1.58	10	16.80	2.77	1.58
Lead, Other .....		251.99	1	14.70	0.14	0.20	1	14.70	0.14	0.20
Method Group 251.XX PPM			15	15.39	3.55	1.75	14	15.81	3.15	1.38
Acid Soluble Manganese, AA .....	972.02a	261.00	8	3.696	0.106	0.095	8	3.696	0.106	0.095
Acid Soluble Manganese, AA .....	972.02b	261.11	4	3.778	0.414	0.099	4	3.778	0.414	0.099
Acid Soluble Manganese, ICP .....	972.02a	261.30	18	3.757	0.381	0.066	18	3.769	0.402	0.061
Acid Soluble Manganese, ICP .....	972.02b	261.31	5	3.634	0.189	0.032	5	3.634	0.189	0.032
Acid Soluble Manganese, Other .....		261.99	4	3.670	0.212	0.100	3	3.710	0.201	0.007
Method Group 261.XX PCT			40	3.705	0.320	0.073	39	3.715	0.334	0.063
Water Soluble Manganese, Atomic Abs ...	972.03	271.00	2	0.623	0.036	0.025	2	0.623	0.036	0.025
Mercury, Atomic Absorption .....		281.00	2	0.25	0.08	0.02	2	0.25	0.08	0.02
Mercury, ICP .....		281.30	1	0.06	0.07	0.10	1	0.06	0.07	0.10
Method Group 281.XX PPM			3	0.19	0.12	0.05	3	0.19	0.12	0.05
Molybdenum, Atomic Absorption .....		289.00	2	21.03	5.83	7.35	2	21.03	5.83	7.35
Molybdenum, ICP .....		289.30	9	22.84	2.41	1.16	8	22.94	2.44	0.80
Molybdenum, Other .....		289.99	1	26.40	0.00	0.00	1	26.40	0.00	0.00
Method Group 289.XX PPM			12	22.83	3.23	2.09	11	22.91	2.58	1.01
Nickel, Atomic Absorption .....		291.00	3	352.50	11.67	13.67	3	352.50	11.67	13.67
Nickel, ICP .....		291.30	10	332.73	40.33	11.50	10	332.73	40.33	11.50
Nickel, Other .....		291.99	2	359.75	46.66	12.50	2	359.75	46.66	12.50
Method Group 291.XX PPM			15	340.29	37.91	12.06	15	340.29	37.91	12.06
Selenium, ICP .....		301.30	3	5.50	4.22	0.73	3	5.50	4.22	0.73
Sodium, Atomic Absorption .....	983.04	311.00	1	0.44	0.01	0.01	1	0.44	0.01	0.01

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Sodium, Flame Photometric .....	974.01	311.30	1	0.51	0.02	0.03	1	0.51	0.02	0.03
Sodium, Other .....		311.99	8	0.49	0.06	0.02	7	0.49	0.07	0.01
Method Group 311.XX PCT			10	0.49	0.06	0.02	10	0.49	0.06	0.02
Acid Soluble Zinc, Atomic Absorption ..	975.02	321.00	13	1.441	0.102	0.044	12	1.432	0.093	0.026
Acid Soluble Zinc, Zincon Ion Exchange	973.01	321.20	1	1.345	0.007	0.010	1	1.345	0.007	0.010
Acid Soluble Zinc, ICP .....		321.30	25	1.475	0.101	0.034	24	1.469	0.097	0.027
Acid Soluble Zinc, Other .....		321.99	3	1.438	0.049	0.017	3	1.438	0.049	0.017
Method Group 321.XX PCT			42	1.459	0.099	0.035	40	1.453	0.094	0.026
Water Soluble Zinc, Atomic Absorption .		325.00	1	0.050	0.004	0.006	1	0.050	0.004	0.006

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 001.10 PCT			Meth: 010.10 PCT			Meth: 010.60 PCT			Meth: 010.60 PCT			Meth: 010.XX PCT		
Ammoniacal Nitrogen			Total Nitrogen			Total Nitrogen			Total Nitrogen			<u>Total Nitrogen</u>		
<u>MgO Distillation</u>			<u>Reduced Iron</u>			<u>Combustion</u>			<u>Combustion</u>					
416	5.98	.00	405	6.23	.92	369	6.18	.78	043	6.00 R	-1.27	292	6.15	.53
Meth: 001.99 PCT			042 6.05 -.81			029 6.17 .67			411 5.92 -1.42			251 6.11 .36		
Ammoniacal Nitrogen			Meth: 010.11 PCT			389 6.18 .67			057 5.90 -1.56			232 6.13 .30		
<u>Other</u>			292 6.15 .52			422 6.15 .45			114 5.89 -1.66			040 6.13 .28		
376	6.45	1.42	<u>Modified Comprehensi</u>			377 6.14 .39			428 5.89 -1.68			322 6.10 .09		
418	6.15 X	.50	368 6.24 R 3.54			251 6.11 .35			073 5.88 -1.71			330 6.10 .07		
320	6.05	.16	220 6.21 1.77			232 6.13 .29			307 5.96 R -1.91			Avg 6.09		
Avg	5.99		322 6.10 .13			040 6.13 .27			Meth: 010.99 PCT			162 6.09 -.06		
193	5.98	-.10	Avg 6.09			330 6.10 .07			Total Nitrogen			035 6.09 -.08		
096	5.91	-.26	090 6.07 -.37			Avg 6.09			<u>Other</u>			055 6.08 -.09		
409	5.43	-1.77	415 6.04 -.87			162 6.09 -.06			354 6.39 1.26			049 6.08 -.09		
423	0.02 S	-18.41	309 5.65 s -7.15			035 6.09 -.08			Avg 6.16			262 6.09 -.13		
Meth: 001.XX PCT			Meth: 010.12 PCT			049 6.08 -.09			420 6.07 -.54			131 6.08 -.13		
Ammoniacal Nitrogen			<u>Salicylic</u>			055 6.08 -.09			397 6.03 -.79			423 6.08 -.13		
376	6.45	1.55	211 6.01 .73			262 6.09 -.13			Meth: 010.XX PCT			381 6.07 -.18		
418	6.15 X	.55	185 6.00 .60			131 6.08 -.14			<u>Total Nitrogen</u>			090 6.07 -.18		
320	6.05	.18	Avg 5.97			423 6.08 -.14			157 6.68 s 4.69			393 6.07 -.21		
Avg	5.99		254 5.90 -1.27			360 6.09 -.16			390 6.44 2.82			296 6.07 -.21		
416	5.98	-.04	Meth: 010.60 PCT			381 6.07 -.18			354 6.39 2.41			009 6.07 -.24		
193	5.98	-.10	Total Nitrogen			296 6.07 -.22			095 6.37 2.20			406 6.07 -.24		
096	5.91	-.28	<u>Combustion</u>			393 6.07 -.22			022 6.34 1.96			324 6.07 -.29		
409	5.43	-1.92	157 6.68 s 4.68			009 6.07 -.24			368 6.24 R 1.88			420 6.07 -.29		
423	0.02 s	-20.00	390 6.44 2.81			406 6.07 -.24			027 6.30 1.68			029 6.05 -.33		
Meth: 003.99 PCT			095 6.37 2.20			324 6.07 -.29			351 6.28 1.51			233 6.06 -.36		
Water Insoluble Nitr			022 6.34 1.96			233 6.06 -.36			405 6.23 1.30			028 6.04 -.44		
<u>Other</u>			027 6.30 1.67			028 6.04 -.44			136 6.23 1.13			007 6.07 -.46		
393	6.20	-.71	351 6.28 1.51			007 6.07 -.46			220 6.21 .96			042 6.05 -.52		
Meth: 009.10 PCT			024 6.01 -.65			041 6.02 -.60			425 6.19 .89			041 6.02 -.59		
Ammon & Nitrate N			023 6.00 -.84			024 6.01 -.65			025 6.20 .88			397 6.03 -.64		
<u>Devarda</u>			096 5.99 -.88			023 6.00 -.84			234 6.20 .88			024 6.01 -.65		
392	6.09	.71	361 5.98 -.90			096 5.99 -.88			369 6.18 .78			211 6.01 -.69		
Meth: 009.10 PCT			034 5.97 -1.02			361 5.98 -.90			177 6.19 .77			185 6.00 -.78		
Ammon & Nitrate N			106 5.96 -1.10			034 5.97 -1.02			029 6.17 .68			023 6.00 -.83		
<u>Devarda</u>			325 5.95 -1.14			106 5.96 -1.10			389 6.18 .68			096 5.99 -.87		
392	6.09	.71	234 6.20 .87			325 5.95 -1.14			096 5.99 -.87					

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

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	
Meth: 010.XX PCT			Meth: 020.20 PCT			Meth: 020.99 PCT			Meth: 020.XX PCT			Meth: 030.XX PCT			
<u>Total Nitrogen</u>			<u>Total Phosphate</u>			<u>Total Phosphate</u>			<u>Total Phosphate</u>			<u>Insoluble Phosphate</u>			
361	5.98	- .89	<u>Spectrometric</u>			<u>Other</u>			320	21.21	-1.28	096	0.27	- .42	
034	5.97	-1.01	406	21.64	.17	409	21.60	- .71	035	21.14	-1.49	220	0.20	- .78	
106	5.96	-1.10	Avg 21.60			Meth: 020.XX PCT			393	21.17 R	-1.77	090	0.16	-1.02	
325	5.95	-1.13	363	21.50	- .40	<u>Total Phosphate</u>			420	21.01	-1.96	Meth: 040.10 PCT			
043	6.00 R	-1.26	234	21.40	- .64	362	44.94 s	83.58	369	21.54 R	-2.63	InDir Available Phos			
426	5.93	-1.33	376	21.40	- .64	422	22.91 s	4.88	220	20.74 s	-3.58	Grav Quim			
411	5.92	-1.41	309	21.35	- .80	390	22.75 s	4.28	411	19.93 s	-5.80	090	21.29	.71	
254	5.90	-1.53	292	21.27	-1.04	330	22.55 A	3.62	324	19.17 s	-8.50	Meth: 040.20 PCT			
057	5.90	-1.56	420	21.01	-1.86	042	22.12 s	3.52	Meth: 030.10 PCT			InDir Available Phos			
114	5.89	-1.65	369	21.54 R	-2.29	425	22.25	2.51	Insoluble Phosphate			Spectrometri			
428	5.89	-1.68	220	20.74 S	-3.24	423	21.90	1.25	<u>Grav Quimociac</u>			363 20.97 S .00			
073	5.88	-1.71	324	19.17 s	-7.54	418	21.89 X	1.20	090	0.16	.71	Meth: 040.40 PCT			
307	5.96 R	-1.91	Meth: 020.40 PCT			361	21.87	1.15	Meth: 030.20 PCT			InDir Available Phos			
309	5.65 s	-3.74	<u>Total Phosphate</u>			428	21.85	1.08	Insoluble Phosphate			Automated			
Meth: 020.10 PCT			<u>Automated</u>			381	21.81	.97	Meth: 030.40 PCT			InDir Available Phos			
<u>Total Phosphate</u>			042	22.12 s	4.83	368	21.61	.92	Insoluble Phosphate			Automated			
<u>Grav Quimociac</u>			193	21.65	1.24	416	21.79	.85	Meth: 030.99 PCT			InDir Available Phos			
114	21.68 R	3.40	393	21.51	.76	426	21.76	.77	Insoluble Phosphate			ICP			
157	21.46	.91	096	21.45	.28	114	21.68	.74	Meth: 040.50 PCT			InDir Available Phos			
090	21.44	.76	Avg 21.39	Meth: 020.50 PCT			392	21.69	.53	Insoluble Phosphate			Other		
095	21.40	.35	320	21.21	- .95	<u>Total Phosphate</u>			Meth: 030.XX PCT			InDir Available Phos			
Avg 21.36			035	21.14	-1.18	<u>ICP</u>			Insoluble Phosphate			Other			
313	21.32	- .43	Meth: 020.20 PCT			422	22.91 S	1.76	Meth: 040.99 PCT			InDir Available Phos			
405	21.20	-1.67	<u>Total Phosphate</u>			330	22.55	1.16	Insoluble Phosphate			Other			
411	19.93 S	-13.80	<u>ICP</u>			422	22.91 S	1.76	Meth: 040.XX PCT			InDir Available Phos			
Meth: 020.20 PCT			422 22.91 S 1.76			096 21.45 - .36			Meth: 030.99 PCT			InDir Available Phos			
<u>Total Phosphate</u>			330 22.55 1.16			090 21.44 - .39			Insoluble Phosphate			Other			
<u>Spectrometric</u>			Avg 21.76			389 21.45 - .39			Meth: 040.99 PCT			InDir Available Phos			
362	44.94 s	72.29	361 21.87 - .06			393 21.51 - .47			Meth: 040.20 PCT			InDir Available Phos			
390	22.75 S	3.55	423 21.90 - .10			095 21.40 - .53			Insoluble Phosphate			Other			
425	22.25	2.01	426 21.76 - .28			376 21.40 - .55			Meth: 030.10 PCT			InDir Available Phos			
418	21.89 X	.88	368 21.61 - .66			234 21.40 - .55			Insoluble Phosphate			Other			
428	21.85	.77	389 21.45 - .79			309 21.35 - .73			Meth: 040.10 PCT			InDir Available Phos			
381	21.81	.68	393 21.17 -1.38			313 21.32 - .82			Insoluble Phosphate			Other			
416	21.79	.57	422 22.91 S 1.76			292 21.27 -1.01			Meth: 040.20 PCT			InDir Available Phos			
392	21.69	.30	330 22.55 1.16			405 21.20 -1.26			Insoluble Phosphate			Other			
* 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: 041.10 PCT			Meth: 041.50 PCT			Meth: 041.XX PCT			Meth: 048.20 PCT			Meth: 050.30 PCT		
Dir Available Phosph			Dir Available Phosph			<u>Dir Available Phosph</u>			Water Soluble Phosph			Soluble Potash		
<u>Grav Quimociac</u>			<u>ICP</u>			023 21.63 1.20			<u>Spectrometric</u>			<u>AA (Oxalate)</u>		
322	21.69	1.53	354	22.24 R	4.44	009	21.60	1.12	420	15.62	1.29	073	5.23	1.08
211	21.66	1.42	325	21.33	1.50	177	21.47	.82	363	15.10	.54	381	5.13	.73
254	21.65	1.36	043	20.97	.47	028	21.43	.66	362	15.05	.40	095	5.04	.41
009	21.60	1.19	Avg	20.84		296	21.39	.56	Avg	14.80		234	4.93	.08
177	21.47	.78	251	20.77	-.26	022	21.39	.56	096	14.21	-.92	Avg	4.92	
022	21.39	.36	360	20.75	-.31	177	21.37	.52	193	14.00	-1.25	136	4.87	-.19
055	21.32	.19	393	20.41	-1.37	043	21.36	.48	Meth: 050.00 PCT			369	4.86	-.23
Avg	21.30		007	19.25 S	-4.99	325	21.33	.39	Soluble Potash			040	4.85 R	-.35
041	21.28	-.08	Meth: 041.60 PCT			055	21.32	.38	<u>STPB Oxalate</u>			351	4.74	-.61
057	21.30	-.18	Dir Available Phosph			057	21.30	.33	095	5.35	2.06	185	4.60	-1.07
040	21.25	-.20	<u>EDTA Extract</u>			041	21.28	.26	043	5.31 R	1.97	262	4.38	-1.84
296	21.23	-.27	262	22.05	1.74	131	21.26	.21	090	5.17	1.10	Meth: 050.31 PCT		
029	21.20	-.45	023	21.63	.77	040	21.25	.19	057	5.12	.78	Soluble Potash		
131	21.09	-.86	028	21.43	.30	362	21.24	.16	055	5.05	.41	<u>AA (Citrate)</u>		
049	21.09	-.88	296	21.39	.23	296	21.23	.13	049	4.98	.36	254	4.39	.00
260	21.08	-.91	177	21.37	.19	029	21.20	.13	193	5.01	.31	Meth: 050.50 PCT		
025	21.05	-1.01	043	21.36	.15	409	21.15	-.14	Avg	4.97		Soluble Potash		
185	20.78	-2.10	Avg	21.30		131	21.12	-.18	211	4.97	-.04	<u>ICP (Oxalate)</u>		
Meth: 041.20 PCT			351	21.04	-.62	049	21.09	-.27	416	4.96	-.06	292	5.51	1.70
Dir Available Phosph			073	20.89	-.98	049	21.09	-.32	029	4.95	-.19	422	5.33	1.20
<u>Spectrometric</u>			377	20.51	-1.83	260	21.08	-.33	114	4.93	-.25	251	5.08 R	.65
362	21.24	1.43	095	19.69 S	-3.76	025	21.05	-.37	009	4.96	-.38	324	5.01	.38
Avg	20.87		Meth: 041.99 PCT			351	21.04	-.44	220	4.95	-.43	Avg	4.87	
106	20.76	-.44	Dir Available Phosph			043	20.97	-.60	392	4.90	-.44	418	4.87 X	-.03
415	20.84	-.57	<u>Other</u>			073	20.89	-.84	411	4.78	-1.03	106	4.84	-.11
055	20.64	-.96	409	21.12	-.71	415	20.84	-.98	022	4.51	-2.52	307	4.78	-.27
Meth: 041.40 PCT			Meth: 041.XX PCT			185	20.78	-1.12	Meth: 050.10 PCT			420	4.76	-.32
<u>Automated</u>			<u>Dir Available Phosph</u>			251	20.77	-1.12	Soluble Potash			354	4.60	-.74
027	21.78	1.25	354	22.24 R	2.94	106	20.76	-1.13	<u>STPB Citrate</u>			157	4.19	-1.81
131	21.26	.18	262	22.05	2.33	360	20.75	-1.17	322	5.03	-.71	Meth: 050.51 PCT		
Avg	21.17		027	21.78	1.60	055	20.64	-1.47	Soluble Potash			Soluble Potash		
029	21.15	-.09	322	21.69	1.36	377	20.51	-1.82	<u>AA (Oxalate)</u>			<u>ICP (Citrate)</u>		
393	20.50	-1.38	211	21.66	1.28	393	20.50	-1.82	095	19.69 s	-4.06	023	6.32 s	6.18
* X=Excluded from lab performance			254	21.65	1.24	007	19.25 s	-5.20	428	5.39	1.62	043	5.23	1.29
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: 050.51 PCT			Meth: 050.99 PCT			Meth: 050.XX PCT			Meth: 050.XX PCT			Meth: 060.XX PCT		
Soluble Potash			Soluble Potash			Soluble Potash			Soluble Potash			Free Water		
<u>ICP (Citrate)</u>			<u>Other</u>			322 5.03 .56			415 4.71 -.83			409 1.26 .52		
361	5.23	1.24	131	5.11 X	.48	029	5.02	.55	397	4.70	-.89	Avg	1.22	
368	5.11	.81	360	5.05	.27	389	5.05	.54	362	4.72	-.92	416	1.14	-.39
389	5.05	.51	260	4.98	.20	055	5.05	.49	393	4.68	-.98	193	1.11	-.56
377	4.99	.26	Avg	4.97		360	5.05	.49	007	4.67	-1.02	007	1.00	-1.22
Avg	4.95		376	4.94	-.11	095	5.04	.45	426	4.68	-1.04	363	0.97	-1.26
025	4.85	-.49	325	4.90	-.24	324	5.01	.38	185	4.60	-1.28			
423	4.74	-.98	425	4.85	-.56	193	5.01	.38	354	4.60	-1.29	Meth: 101.00 PCT		
393	4.68	-1.23	397	4.70	-.94	049	4.98	.36	309	4.60	-1.34	Acid Soluble Calcium		
007	4.67	-1.27	362	4.72	-.96	260	4.98	.33	022	4.51	-1.66	<u>AA</u>		
			426	4.68	-1.06	009	4.96	.31	027	4.49	-1.73	397	10.66 s	12.07
			027	4.49	-1.67	377	4.99	.31	254	4.39	-2.11	028	6.03	1.65
			042	3.77 s	-4.19	220	4.95	.31	262	4.38	-2.17	177	5.54	.55
						041	4.99	.28	157	4.19	-2.89	043	5.36	.27
						211	4.97	.17	042	3.77 s	-4.59	029	5.31	.25
						416	4.96	.15				055	5.32	.16
						131	4.94	.15	Meth: 060.00 PCT			Avg	5.29	
						029	4.95	.13	Free Water			095	5.21	-.20
						234	4.93	.08	<u>Vacuum Oven</u>			296	5.20	-.22
						376	4.94	.08	362	1.51	1.45	262	4.39	-2.05
						114	4.93	.02	320	1.41	.97			
						Avg	4.92		096	1.34	.68	Meth: 101.30 PCT		
						325	4.90	-.12	Avg	1.21		Acid Soluble Calcium		
						392	4.90	-.18	416	1.14	-.34	<u>ICP</u>		
						418	4.87 X	-.23	193	1.11	-.51	251	6.30	2.03
						406	4.87	-.24	007	1.00	-1.12	057	5.94	1.17
						136	4.87	-.24	363	0.97	-1.17	393	5.90	1.07
						369	4.86	-.29				361	5.86	.96
						106	4.84	-.34	Meth: 060.99 PCT			042	5.79	.81
						025	4.85	-.34	Free Water			009	5.70	.60
						040	4.85	-.43	<u>Other</u>			102	5.67	.53
						425	4.85	-.52	409	1.26	.71	232	5.52 R	.53
						411	4.78	-.57				422	5.62	.41
						307	4.78	-.59	Meth: 060.XX PCT			292	5.61	.39
						420	4.76	-.66	<u>Free Water</u>			023	5.54	.22
						035	4.76	-.73	362	1.51	1.49	320	5.46	.14
						351	4.74	-.74	320	1.41	.99	131	5.50	.12
						423	4.74	-.76	096	1.34	.69	389	5.50	.11

\* 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: 101.30 PCT			Meth: 101.XX PCT			Meth: 121.00 PCT			Meth: 121.30 PCT			Meth: 121.XX PCT		
<u>Acid Soluble Calcium</u>			<u>Acid Soluble Calcium</u>			<u>Acid Soluble Magnesi</u>			<u>Acid Soluble Magnesi</u>			<u>Acid Soluble Magnesi</u>		
ICP			042	5.79	.83	AA			ICP			177	2.91	.73
Avg	5.45		009	5.70	.63	029	2.85	.85	042	2.69	-1.10	102	2.89	.60
324	5.37	-.20	102	5.67	.56	055	2.81	.78	106	2.67	-1.25	292	2.88	.52
035	5.34	-.26	232	5.52 R	.53	040	2.79	.38	393	2.66	-1.32	055	2.81	.50
420	5.28	-.41	422	5.62	.44	392	2.77	.38	065	2.71 R	-1.46	389	2.87	.48
106	5.26	-.45	292	5.61	.42	193	2.78	.23	360	2.61	-1.73	029	2.85	.32
354	5.29	-.52	023	5.54	.26	Avg	2.75		307	2.65 R	-2.13	330	2.85	.32
376	5.20	-.59	177	5.54	.25	309	2.70	-.40	368	2.66 R	-2.30	096	2.85	.30
360	5.16	-.68	131	5.50	.16	296	2.70	-.47	095	2.24 s	-4.50	023	2.83	.21
423	5.10	-.80	389	5.50	.16	043	2.70	-.58	420	0.66 s	-16.49	Avg	2.81	
307	5.15 R	-1.12	320	5.46	.15	381	2.68	-.59				320	2.80	-.09
095	4.48	-2.28	Avg	5.43		095	2.56	-1.59	Meth: 121.70 PCT			040	2.79	-.20
065	4.42	-2.42	324	5.37	-.16	262	2.56	-1.64	<u>Acid Soluble Magnesi</u>			193	2.78	-.23
368	3.16 s	-5.36	035	5.34	-.21				<u>Titrimetric</u>			035	2.77	-.34
			043	5.36	-.27	Meth: 121.30 PCT			415	2.11 S	.00	392	2.77	-.39
			055	5.32	-.29	<u>Acid Soluble Magnesi</u>						131	2.74	-.51
Meth: 101.70 PCT			420	5.28	-.35	<u>ICP</u>			Meth: 121.99 PCT			234	2.71	-.69
<u>Acid Soluble Calcium</u>			029	5.31	-.36	324	4.32 s	11.37	<u>Acid Soluble Magnesi</u>			009	2.71	-.71
<u>Titrimetric</u>			106	5.26	-.39	422	3.33 S	3.78	<u>Other</u>			309	2.70	-.76
415	3.21 S	.00	354	5.29	-.47	057	3.10	2.09	409	4.73 S	7.79	376	2.72	-.76
			095	5.21	-.50	251	3.06	1.74	390	3.12	.87	296	2.70	-.79
Meth: 101.99 PCT			296	5.20	-.52	232	2.93	1.12	Avg	2.91		043	2.70	-.84
<u>Acid Soluble Calcium</u>			376	5.20	-.53	423	2.94	.84	234	2.71	-.86	042	2.69	-.86
<u>Other</u>			360	5.16	-.62	426	2.93	.75				381	2.68	-.92
409	8.54 S	29.38	423	5.10	-.73	361	2.92	.64	Meth: 121.XX PCT			106	2.67	-1.00
Avg	6.05		307	5.15 R	-1.06	354	2.90	.60	<u>Acid Soluble Magnesi</u>			393	2.66	-1.07
220	6.05	-.71	095	4.48	-2.16	102	2.89	.46	409	4.73 s	13.80	065	2.71 R	-1.27
234	3.21 S	-33.53	065	4.42	-2.30	292	2.88	.38	324	4.32 s	10.86	360	2.61	-1.45
			262	4.39	-2.37	389	2.87	.33	422	3.33 s	3.73	095	2.56	-1.78
Meth: 101.XX PCT			415	3.21 s	-5.02	330	2.85	.16	390	3.12	2.21	262	2.56	-1.82
<u>Acid Soluble Calcium</u>			234	3.21 s	-5.03	096	2.85	.15	057	3.10	2.14	307	2.65 R	-1.89
397	10.66 s	11.86	368	3.16 s	-5.14	023	2.83	.11	251	3.06	1.82	368	2.66 R	-2.06
409	8.54 s	7.06				Avg	2.83		232	2.93	1.18	095	2.24 s	-4.05
251	6.30	2.00	Meth: 121.00 PCT			320	2.80	-.27	028	2.93	1.05	415	2.11 s	-5.01
220	6.05	1.42	<u>Acid Soluble Magnesi</u>			035	2.77	-.52	423	2.94	.97	420	0.66 s	-15.32
028	6.03	1.36	AA			131	2.74	-.73	426	2.93	.88			
057	5.94	1.18	028	2.93	1.66	009	2.71	-.95	361	2.92	.78			
393	5.90	1.08	177	2.91	1.33	376	2.72	-.98	354	2.90	.73			
361	5.86	.97												
* 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: 131.00 PCT			Meth: 144.99 PCT			Meth: 144.XX PCT			Meth: 151.99 PPM			Meth: 165.99 PCT		
Water Soluble Magnes			Sulfur			<u>Sulfur</u>			Arsenic			Acid Soluble Boron		
<u>AA</u>			<u>Other</u>			131 9.30 -.25			<u>Other</u>			<u>Other</u>		
029	2.50	1.03	330	9.54	1.07	022	9.30	-.25	409	10.75	.71	422	0.376	.80
309	2.00	.17	177	9.47	.83	023	9.20	-.67				090	0.370	.70
Avg	1.90		035	9.40	.78	009	9.29	-.67	Meth: 151.XX PPM			360	0.372	.67
193	1.20	-1.19	009	9.29	.57	360	9.21	-.68	<u>Arsenic</u>			251	0.370	.63
			354	9.25	.56	354	9.25	-.80	368	17.02	2.21	376	0.365	.49
			360	9.21	.32	368	9.12	-.94	232	14.55 R	1.48	106	0.360	.31
Meth: 144.01 PCT			360 9.21 .32			393 9.10 -1.06			106 12.00 .51			Avg 0.350		
Sulfur			131 9.30 .31			422 9.07 -1.11			220 12.00 .51			324 0.350 -.01		
<u>Gravimetric</u>			023 9.20 .27			028 9.07 -1.15			376 11.17 .06			423 0.346 -.17		
040	10.44 s	9.44	Avg	9.20		389	9.05	-1.20	102	11.06	.02	043	0.350	-.32
055	9.71	1.60	368	9.12	-.31	096	8.96	-1.58	Avg 11.05			009	0.319	-1.00
029	9.69	1.36	422	9.07	-.42	423	8.82	-2.14	409	10.75	-.11	232	0.317	-1.07
043	9.56	.45	028	9.07	-.45	409	8.43 A	-3.76	040	9.61	-.53	368	0.330 R	-1.15
095	9.54	.35	389	9.05	-.49	320	7.95 s	-5.72	136	8.55	-.93	426	0.307	-1.37
324	9.54	.15	096	8.96	-.79	Meth: 151.00 PPM			043	7.28	-1.39	307	0.349 R	-1.54
Avg	9.53		423	8.82	-1.22	Arsenic			065	1.26 s	-3.62	409	0.294	-1.79
157	9.46	-.51	409	8.43	-2.46	<u>Atomic Absorption</u>			Meth: 165.00 PCT			Meth: 165.XX PCT		
251	9.46	-.85	320	7.95 s	-3.98	220 12.00 1.27			Acid Soluble Boron			<u>Acid Soluble Boron</u>		
296	9.40	-1.08	Meth: 144.XX PCT			Avg 10.05			<u>Spectrometric</u>			393 0.410 2.19		
102	9.37	-1.26	Sulfur			040 9.61 -.26			393 0.410 s 4.91			354 0.410 2.14		
			040 10.44 s 5.28			136 8.55 -.90			296 0.345 R 1.72			307 0.349 R 1.65		
			361 9.75 1.64			Meth: 151.30 PPM			040 0.355 .99			422 0.376 .91		
			055 9.71 1.51			Arsenic			029 0.354 .96			090 0.370 .80		
			029 9.69 1.41			<u>ICP</u>			428 0.353 .86			360 0.372 .77		
			376 9.55 .99			368 17.02 1.60			042 0.349 .61			251 0.370 .72		
			043 9.56 .88			232 14.55 R 1.04			Avg 0.340			376 0.365 .58		
			095 9.54 .82			106 12.00 .31			392 0.339 -.25			106 0.360 .38		
			330 9.54 .81			Avg 11.70			023 0.335 -.39			043 0.350 .34		
			324 9.54 .78			376 11.17 -.17			055 0.335 -.47			040 0.355 .20		
			035 9.40 .65			102 11.06 -.19			028 0.333 -.50			029 0.354 .19		
			251 9.46 .57			043 7.28 -1.33			057 0.308 -2.19			428 0.353 .13		
			029 9.48 .54			065 1.26 S -3.15			Meth: 165.99 PCT			324 0.350 .04		
			177 9.47 .50			Meth: 165.99 PCT			Acid Soluble Boron			Avg 0.349		
			157 9.46 .49			Meth: 165.99 PCT			Other			042 0.349 -.07		
			296 9.40 .28			Meth: 165.99 PCT			354 0.410 1.95			423 0.346 -.14		
			102 9.37 .13			Meth: 165.99 PCT			392 0.339 -.37			392 0.339 -.37		
			361 9.75 1.71			Meth: 165.99 PCT			Avg 9.34					
			376 9.55 1.16			Meth: 165.99 PCT			Avg 9.34					
* 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: 165.XX PCT			Meth: 181.30 PPM			Meth: 190.00 PCT			Meth: 191.99 PPM			Meth: 202.30 PPM		
<u>Acid Soluble Boron</u>			<u>Cadmium</u>			<u>Water Soluble Chlori</u>			<u>Chromium</u>			<u>Acid Soluble Cobalt</u>		
023	0.335	-.48	ICP			<u>Titrimetric</u>			<u>Other</u>			<u>ICP</u>		
055	0.335	-.50	324	6.15	-.74	422	0.40	-.87	409	131.50	.71	065	80.75 X	-.78
028	0.333	-.55	393	5.58	-1.23							368	77.81	-.88
296	0.345 R	-.86	009	5.45	-1.36	Meth: 190.99 PCT			Meth: 191.XX PPM			320	77.50	-.92
009	0.319	-1.03	096	6.00 R	-1.60	<u>Water Soluble Chlori</u>			<u>Chromium</u>			324	69.00	-1.74
232	0.317	-1.10				<u>Other</u>						376	0.10 s	-8.21
368	0.330 R	-1.21	Meth: 181.99 PPM			009	0.45	.71	220	149.00 R	.85			
057	0.308	-1.42	<u>Cadmium</u>			Meth: 190.XX PCT			035	139.50	.59	Meth: 202.99 PPM		
426	0.307	-1.43	<u>Other</u>			<u>Water Soluble Chlori</u>			096	138.50	.57	<u>Acid Soluble Cobalt</u>		
409	0.294	-1.88	409	6.65	-.71	009	0.45	.68	409	131.50	.43	<u>Other</u>		
						102	0.44	.61	393	130.81	.42	409	74.25	.71
						Avg	0.43		232	125.00	.31	Meth: 202.XX PPM		
Meth: 171.10 PCT			Meth: 181.XX PPM			422	0.40	-1.29	065	116.00	.11	<u>Acid Soluble Cobalt</u>		
<u>Water Soluble Boron</u>			<u>Cadmium</u>						Avg	110.59		057	104.00	1.69
<u>Spectrometric</u>			106	7.80	2.24				324	109.10	-.16	009	99.85	1.27
296	0.295	.71	363	7.00	1.03	Meth: 191.00 PPM			368	30.66	-1.63	096	99.50	1.26
			136	6.85	.96	<u>Chromium</u>			376	0.16	-2.25	193	92.50	.57
Meth: 181.00 PPM			409	6.65	.57	<u>Atomic Absorption</u>						040	92.35	.56
<u>Cadmium</u>			368	6.66	.56	220	149.00	.71	Meth: 202.00 PPM			106	91.50	.51
<u>Atomic Absorption</u>			065	6.59	.54	Meth: 191.30 PPM			<u>Acid Soluble Cobalt</u>			136	91.00	.45
363	7.00	1.14	193	6.40	.33	<u>Chromium</u>			<u>AA</u>			Avg	86.91	
136	6.85	1.05	035	6.46	.28	<u>ICP</u>			193	92.50	.76	035	86.40	-.10
193	6.40	.44	102	6.35	.19	009	170.85	1.22	Avg	91.75		102	85.01	-.22
Avg	6.13		232	6.30	.15	035	139.50	.61	136	91.00	-.96	232	82.25	-.54
220	5.65	-.66	Avg	6.29		096	138.50	.59	Meth: 202.30 PPM			065	80.75 X	-.79
397	5.29	-1.10	376	6.21	-.18	393	130.81	.44	<u>Acid Soluble Cobalt</u>			368	77.81	-.89
040	5.60	-1.12	324	6.15	-.69	232	125.00	.33	<u>AA</u>			320	77.50	-.93
			220	5.65	-.96	102	124.38	.31	<u>ICP</u>			409	74.25	-1.24
Meth: 181.30 PPM			393	5.58	-1.11	324	109.10	.15	057	104.00	1.60	324	69.00	-1.78
<u>Cadmium</u>			009	5.45	-1.23	065	116.00	.15	009	99.85	1.20	376	0.10 s	-8.51
<u>ICP</u>			040	5.60	-1.41	Avg	108.50		096	99.50	1.19	Meth: 221.00 PCT		
106	7.80	2.22	397	5.29	-1.46	368	30.66	-1.53	040	92.35	.51	<u>Acid Soluble Copper</u>		
368	6.66	.49	096	6.00 R	-1.52	376	0.16	-2.12	106	91.50	.47	<u>Atomic Absorption</u>		
065	6.59	.49	Meth: 190.00 PCT			Meth: 190.00 PCT			Avg	87.16		029	0.3482	1.28
035	6.46	.21	<u>Water Soluble Chlori</u>			<u>Water Soluble Chlori</u>			035	86.40	-.11	381	0.3450	.97
Avg	6.35		<u>Titrimetric</u>			<u>Titrimetric</u>			102	85.01	-.23	425	0.3435	.71
232	6.30	-.17	102	0.44	.87	<u>ICP</u>			232	82.25	-.54	A=Analysis beyond 3-s limits		
102	6.35	-.18	Avg	0.42										
376	6.21	-.26	* 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: 221.30 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>ICP</u>			<u>ICP</u>			<u>ICP</u>			<u>ICP</u>		
177	0.3410	.49	376	0.3100	-.92	193	0.3350	.27	057	1.88	1.08	057	1.88	1.26
028	0.3400	.43	035	0.3106	-.93	096	0.3350	.27	354	1.85	1.00	354	1.85	1.17
428	0.3402	.41	307	0.3292 R	-1.56	040	0.3340	.21	409	1.85	.97	409	1.85	1.15
234	0.3400	.39	065	0.2900	-1.78	Avg	0.3319		330	1.84	.94	330	1.84	1.11
Avg	0.3357		095	0.2765	-2.36	055	0.3300	-.09	360	1.79	.78	360	1.79	.94
040	0.3340	-.40				423	0.3248	-.33	090	1.77	.68	090	1.77	.84
193	0.3350	-.46	Meth: 221.99 PCT			426	0.3253	-.37	009	1.77	.68	009	1.76	.83
055	0.3300	-.53	Acid Soluble Copper			095	0.3210	-.51	009	1.76	.67	029	1.75	.79
095	0.3210	-1.36	<u>Other</u>			042	0.3202	-.80	324	1.72	.52	234	1.73	.71
043	0.3110	-2.28	390	0.3665	.90	389	0.3125	-.90	422	1.71	.50	324	1.72	.68
262	0.2900 s	-4.20	Avg	0.3368		043	0.3110	-.97	035	1.69	.41	422	1.71	.65
			409	0.3070	-.84	422	0.3105	-.99	251	1.66	.33	042	1.71	.64
						324	0.3100	-1.01	157	1.66	.32	055	1.71	.64
Meth: 221.30 PCT			Meth: 221.XX PCT			376	0.3100	-1.01	131	1.66	.29	043	1.71	.62
Acid Soluble Copper			Acid Soluble Copper			035	0.3106	-1.03	096	1.65	.27	035	1.69	.56
<u>ICP</u>			<u>ICP</u>			409	0.3070	-1.15	426	1.64	.22	028	1.62 R	.51
420	0.4570 s	5.42	420	0.4570 s	5.80	307	0.3292 R	-1.68	423	1.60	.08	251	1.66	.47
292	0.3700	1.67	292	0.3700	1.77	262	0.2900	-1.94	102	1.60	.07	157	1.66	.46
102	0.3667	1.53	390	0.3665	1.69	065	0.2900	-1.94	Avg	1.58		131	1.66	.43
360	0.3515	.87	102	0.3667	1.62	095	0.2765	-2.57	389	1.55	-.09	096	1.65	.41
009	0.3504	.82	360	0.3515	.91				232	1.50	-.36	426	1.64	.36
251	0.3500	.81	009	0.3504	.86	Meth: 241.00 PCT			320	1.51 R	-.43	296	1.62	.30
131	0.3475	.70	251	0.3500	.84	Acid Soluble Iron			307	1.46 R	-.77	095	1.62	.30
057	0.3475	.70	029	0.3482	.81	<u>Atomic Absorption</u>			095	1.35	-.82	423	1.60	.22
090	0.3450	.63	131	0.3475	.73	029	1.75	1.02	023	1.25	-1.19	102	1.60	.21
330	0.3450	.63	057	0.3475	.73	055	1.71	.87	420	0.97	-2.18	177	1.59	.19
232	0.3393	.62	381	0.3450	.65	043	1.71	.85	292	0.97	-2.21	389	1.55	.04
354	0.3355	.57	330	0.3450	.65	028	1.62 R	.67	376	0.95	-2.25	Avg	1.54	
023	0.3415	.45	090	0.3450	.65	296	1.62	.52				262	1.48	-.23
368	0.3350	.27	232	0.3393	.65	095	1.62	.50	Meth: 241.99 PCT			232	1.50	-.28
096	0.3350	.27	354	0.3355	.60	177	1.59	.40	Acid Soluble Iron			040	1.46	-.34
Avg	0.3313		425	0.3435	.54	Avg	1.49		<u>Other</u>			320	1.51 R	-.39
423	0.3248	-.28	023	0.3415	.45	262	1.48	-.05	234	1.73	1.13	390	1.44	-.41
426	0.3253	-.33	177	0.3410	.43	040	1.46	-.19	042	1.71	1.04	095	1.35	-.72
042	0.3202	-.73	028	0.3400	.39	428	1.34	-.56	Avg	1.48		307	1.46 R	-.74
389	0.3125	-.82	428	0.3402	.38	381	1.24	-.99	390	1.44	-.26	428	1.34	-.74
422	0.3105	-.89	234	0.3400	.38	193	0.86	-2.45	368	1.32	-.74	368	1.32	-.83
324	0.3100	-.92	368	0.3350	.27				065	1.21	-1.24	023	1.25	-1.10
* 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: 241.XX PCT <u>Acid Soluble Iron</u>			Meth: 251.XX PPM <u>Lead</u>			Meth: 261.11 PCT <u>Acid Soluble Mangane</u> <u>AA</u>			Meth: 261.31 PCT <u>Acid Soluble Mangane</u> <u>ICP</u>			Meth: 261.XX PCT <u>Acid Soluble Mangane</u>		
381	1.24	-1.15	368	19.92	1.32	040	3.388	-.97	095	3.355	-1.50	324	3.645	-.21
065	1.21	-1.24	102	19.71	1.24							262	3.665	-.25
420	0.97	-2.13	324	19.10	1.16							177	3.636	-.26
292	0.97	-2.17	106	18.50	.98	Meth: 261.30 PCT <u>Acid Soluble Mangane</u> <u>ICP</u>			Meth: 261.99 PCT <u>Acid Soluble Mangane</u> <u>Other</u>			423	3.597	-.35
376	0.95	-2.22	035	17.65	.59	330	4.565 S	1.99	390	3.935	1.12	096	3.590	-.37
193	0.86	-2.56	065	17.05	.41	354	4.441 S	1.77	Avg	3.710		381	3.585	-.40
			Avg	15.81		102	4.478	1.77	220	3.710	.00	368	3.590	-.40
Meth: 251.00 PPM <u>Lead</u> <u>Atomic Absorption</u>			136	14.95	-.29	057	4.350 R	1.49	234	3.485	-1.12	055	3.645	-.40
136	14.95	.82	409	14.70	-.35	035	4.134	.92	409	3.550 R	-1.23	296	3.580	-.41
040	14.67	.75	376	14.72	-.36	251	4.025	.66				042	3.567	-.44
Avg	12.03		040	14.67	-.38	090	3.950	.45				376	3.505	-.67
193	9.00	-.89	009	15.30	-.59	389	3.875	.27	Meth: 261.XX PCT <u>Acid Soluble Mangane</u>			320	3.490	-.67
363	9.50	-1.21	043	13.76	-.65	009	3.857	.22	330	4.565 s	2.56	234	3.485	-.69
			232	12.35	-1.16	360	3.825	.15	102	4.478	2.29	409	3.550 R	-.75
Meth: 251.30 PPM <u>Lead</u> <u>ICP</u>			193	9.00	-2.19	023	3.788	.12	354	4.441 s	2.28	040	3.388	-1.02
368	19.92	1.14	363	9.50 R	-2.29	131	3.800	.09	029	4.405	2.08	095	3.355	-1.08
102	19.71	1.05	Meth: 261.00 PCT <u>Acid Soluble Mangane</u> <u>AA</u>			Avg	3.722		057	4.350 R	1.94	420	3.130	-1.75
324	19.10	1.01	193	3.815	1.49	422	3.742	-.07	035	4.134	1.27	307	3.176 s	-1.91
106	18.50	.82	392	3.820	1.17	423	3.597	-.43	251	4.025	.95	428	3.062	-1.95
035	17.65	.32	028	3.745	.47	096	3.590	-.44	090	3.950	.70	292	2.900	-2.44
065	17.05	.15	Avg	3.696		368	3.590	-.46	390	3.935	.66	065	1.595 s	-6.34
Avg	16.80		043	3.660	-.39	376	3.505	-.68	106	3.900	.56	Meth: 271.00 PCT <u>Water Soluble Mangan</u> <u>Atomic Abs</u>		
376	14.72	-.76	177	3.636	-.67	320	3.490	-.69	389	3.875	.48	220	0.650	.95
009	15.30	-.85	262	3.665	-.68	420	3.130	-1.59	193	3.815	.43	Avg	0.622	
043	13.76	-1.10	296	3.580	-1.10	307	3.176 S	-1.71	009	3.857	.42	193	0.595	-.78
232	12.35	-1.66	055	3.645	-1.18	292	2.900	-2.16	360	3.825	.34	Meth: 281.00 PPM <u>Mercury</u> <u>Atomic Absorption</u>		
			428	3.062 s	-5.96	065	1.595 s	-5.41	392	3.820	.32	363	0.32	.88
Meth: 251.99 PPM <u>Lead</u> <u>Other</u>			Meth: 261.11 PCT <u>Acid Soluble Mangane</u> <u>AA</u>			Meth: 261.31 PCT <u>Acid Soluble Mangane</u> <u>ICP</u>			Meth: 261.31 PCT <u>Acid Soluble Mangane</u> <u>ICP</u>			Avg	0.25	
409	14.70	.71	029	4.405	1.53	106	3.900	1.41	095	3.735	.06	040	0.19	-.86
			Avg	3.778		426	3.705	.37	Avg	3.693				
			095	3.735	-.11	324	3.645	.06	220	3.710	-.01			
			381	3.585	-.47	Avg	3.634		426	3.705	-.03			
			* X=Excluded from lab performance S/s=Screened Outlier			042	3.567	-.36	043	3.660	-.17	A=Analysis beyond 3-s limits		
			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: 281.30 PPM			Meth: 289.XX PPM			Meth: 291.99 PPM			Meth: 311.30 PCT			Meth: 321.00 PCT		
Mercury			Molybdenum			Nickel			Sodium			Acid Soluble Zinc		
<u>ICP</u>						<u>Other</u>			<u>Flame Photometric</u>			<u>Atomic Absorption</u>		
376	0.06 X	.71	409	26.40	1.35	035	399.50	.85	320	0.51	-.71	428	1.437	.05
			368	25.81	1.15	Avg	359.75					177	1.434	.03
			009	25.00	.81	409	320.00	-.88	Meth: 311.99 PCT			Avg	1.432	
Meth: 281.XX PPM			232	24.65	.72				Sodium			040	1.412	-.31
Mercury			102	24.36	.59	Meth: 291.XX PPM			<u>Other</u>			234	1.400	-.35
363	0.32	1.09	096	23.40	.25	<u>Nickel</u>			422	0.61	1.66	095	1.400	-.36
Avg	0.19		Avg	22.91		035	399.50	1.56	409	0.58	1.29	043	1.390	-.47
040	0.19	-.04	065	20.75	-.84	040	386.60	1.23	Avg	0.49		296	1.375	-.62
376	0.06 X	-1.15	106	22.00	-.85	096	377.00	.97	232	0.48	-.36	381	1.385	-.63
			035	20.35	-.99	232	371.20	.89	307	0.49 R	-.40	262	1.355	-.83
Meth: 289.00 PPM			040	20.05	-1.11	220	358.00	.61	102	0.45	-.57			
Molybdenum			324	19.20	-1.45	136	354.50	.38	009	0.45	-.60	Meth: 321.20 PCT		
<u>Atomic Absorption</u>			220	22.00 R	-2.73	065	345.50	.31	423	0.44	-.74	Acid Soluble Zinc		
220	22.00	1.21	376	0.15 s	-8.81	193	345.00	.18	035	0.44	-.83	<u>Zincon Ion Exchange</u>		
Avg	21.03					102	345.79	.17				096	1.345	-.71
040	20.05	-.18	Meth: 291.00 PPM			Avg	340.29		Meth: 311.XX PCT					
			Nickel			009	335.55	-.14	<u>Sodium</u>			Meth: 321.30 PCT		
Meth: 289.30 PPM			<u>Atomic Absorption</u>			409	320.00	-.60	422	0.61	1.96	Acid Soluble Zinc		
Molybdenum			220	358.00	1.37	106	313.00	-.73	409	0.58	1.54	<u>ICP</u>		
<u>ICP</u>			136	354.50	.18	Avg	352.50		307	0.49	.45	422	1.715	2.53
368	25.81	1.20	Avg	345.00	-.77	193	345.00	-.77	320	0.51	.40	354	1.614 R	1.78
009	25.00	.84							Avg	0.49		106	1.575	1.15
232	24.65	.75	Meth: 291.30 PPM			324	276.40	-1.70	232	0.48	-.37	035	1.579	1.15
102	24.36	.61	Nickel			368	268.66	-1.89	102	0.45	-.57	393	1.560	.96
096	23.40	.25	<u>ICP</u>			376	0.31 s	-8.97	009	0.45	-.60	042	1.524	.75
Avg	22.94		040	386.60	1.34				423	0.44	-.76	251	1.525	.60
065	20.75	-.90	096	377.00	1.10	Meth: 301.30 PPM			035	0.44	-.87	360	1.520	.56
106	22.00 R	-.91	232	371.20	1.01	Selenium			193	0.44	-.89	368	1.470	.41
035	20.35	-1.06	065	345.50	.41	<u>ICP</u>						330	1.500	.38
324	19.20	-1.55	102	345.79	.33	065	10.30	1.14	Meth: 321.00 PCT			057	1.505	.37
376	0.15 s	-9.33	009	335.55	.09	Avg	5.50		Acid Soluble Zinc			102	1.504	.37
			Avg	332.73		106	5.20	-.27	<u>Atomic Absorption</u>			090	1.500	.33
Meth: 289.99 PPM			106	313.00	-.50	409	1.00	-1.07	029	2.215 s	8.41	389	1.500	.32
Molybdenum			393	307.60	-.63	Meth: 311.00 PCT			193	1.715	3.04	426	1.500	.32
<u>Other</u>			324	276.40	-1.42	Sodium			055	1.550 R	1.88	Avg	1.469	
409	26.40	.00	368	268.66	-1.59	<u>Atomic Absorption</u>			028	1.440	.33	292	1.445	-.36
			376	0.31 s	-8.24	193	0.44	.71	392	1.445	.30	023	1.428	-.43

\* 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: 321.30 PCT			Meth: 321.XX PCT											
<u>Acid Soluble Zinc</u>			<u>Acid Soluble Zinc</u>											
<u>ICP</u>			389	1.500	.50									
009	1.425	-.46	390	1.500	.50									
131	1.405	-.67	426	1.500	.50									
320	1.385	-.87	368	1.470	.46									
324	1.375	-.98	Avg	1.453										
420	1.370	-1.03	428	1.437	-.17									
376	1.350	-1.23	177	1.434	-.20									
423	1.305	-1.70	023	1.428	-.27									
232	1.300	-1.79	392	1.445	-.28									
307	1.110 s	-3.74	292	1.445	-.28									
095	1.075 s	-4.08	009	1.425	-.30									
065	0.820 s	-6.74	028	1.440	-.35									
			220	1.410	-.47									
			040	1.412	-.49									
Meth: 321.99 PCT			131	1.405	-.51									
<u>Acid Soluble Zinc</u>			409	1.405	-.53									
<u>Other</u>			234	1.400	-.56									
390	1.500	1.25	095	1.400	-.57									
Avg	1.438		043	1.390	-.68									
220	1.410	-.61	320	1.385	-.72									
409	1.405	-.74	381	1.385	-.81									
			296	1.375	-.83									
Meth: 321.XX PCT			324	1.375	-.83									
<u>Acid Soluble Zinc</u>			420	1.370	-.89									
029	2.215 s	8.10	262	1.355	-1.04									
193	1.715	2.79	376	1.350	-1.09									
422	1.715	2.78	096	1.345	-1.15									
354	1.614 R	1.98	423	1.305	-1.57									
055	1.550 R	1.73	232	1.300	-1.67									
035	1.579	1.35	307	1.110 s	-3.67									
106	1.575	1.35	095	1.075 s	-4.02									
393	1.560	1.16	065	0.820 s	-6.76									
042	1.524	.91												
251	1.525	.78	Meth: 325.00 PCT											
360	1.520	.75	<u>Water Soluble Zinc</u>											
057	1.505	.56	<u>Atomic Absorption</u>											
102	1.504	.55	193	0.050	-.71									
330	1.500	.55												
090	1.500	.51												
* 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	7	- 2.63	7.02	0.12	121.30	29	- 0.33	4.04	0.55
001.XX	8	- 2.50	7.14	0.12	121.99	3	- 2.59	4.58	0.14
010.10	2	0.00	1.01	0.49	121.XX	45	0.09	3.77	0.48
010.11	7	- 0.65	2.95	1.35	131.00	3	0.00	1.12	0.05
010.12	3	0.00	1.09	0.20	131.XX	3	0.00	1.12	0.05
010.60	54	0.05	1.17	0.31	144.01	10	0.75	2.54	1.84
010.99	3	0.00	1.08	0.22	144.02	2	0.00	1.17	0.25
010.XX	68	0.00	1.21	0.38	144.99	18	- 0.22	1.33	0.29
020.10	7	- 1.54	5.59	0.63	144.XX	30	- 0.20	1.75	0.61
020.20	18	3.63	17.28	0.70	151.00	3	0.00	1.03	0.36
020.40	6	0.54	1.57	1.52	151.30	7	- 0.33	1.54	0.25
020.50	8	0.00	0.99	0.28	151.XX	11	- 0.21	1.50	0.27
020.XX	39	2.06	13.59	0.78	165.00	11	0.460	1.679	0.674
030.99	3	93.78	162.43	0.34	165.99	16	- 0.042	0.942	0.489
030.XX	6	18.87	46.23	0.11	165.XX	27	- 0.028	0.934	0.460
040.XX	5	- 0.62	1.48	1.13	181.00	6	0.00	0.94	0.43
041.10	17	0.00	1.00	0.19	181.30	11	- 0.05	0.93	0.55
041.20	4	0.00	1.01	0.33	181.XX	18	- 0.02	0.92	0.50
041.40	4	0.00	1.08	0.09	190.00	2	0.00	1.22	0.01
041.50	7	- 0.09	2.82	0.46	190.XX	3	0.00	1.12	0.01
041.60	10	- 0.37	1.52	0.23	191.30	10	0.00	1.03	0.07
041.XX	36	- 0.13	1.53	0.31	191.XX	12	0.07	1.00	0.11
048.20	5	0.00	1.05	0.12	202.00	2	0.00	0.48	0.80
048.XX	5	0.00	1.05	0.12	202.30	13	- 0.63	2.47	0.22
050.00	16	0.12	1.07	0.27	202.XX	16	- 0.53	2.33	0.21
050.30	11	- 0.02	0.97	0.11	221.00	13	- 0.322	1.4936	0.2742
050.50	10	0.05	0.98	0.14	221.30	26	0.2048	1.4221	0.3734
050.51	10	0.62	2.17	0.19	221.99	2	0.0000	1.1814	0.2283
050.60	6	- 0.32	1.23	0.25	221.XX	40	0.1802	1.2856	0.3803
050.61	4	0.00	0.98	0.40	241.00	12	0.04	0.99	0.14
050.99	15	- 0.28	1.44	0.24	241.30	26	- 0.02	0.97	0.17
050.XX	69	0.03	1.34	0.23	241.99	5	0.00	1.05	0.10
060.00	7	0.00	1.02	0.21	241.XX	42	0.00	0.97	0.17
060.XX	8	0.00	1.00	0.26	251.00	4	0.00	0.90	0.51
101.00	9	1.34	4.13	0.19	251.30	10	0.00	0.95	0.36
101.30	26	- 0.23	1.41	0.25	251.XX	15	- 0.13	1.07	0.40
101.99	3	- 1.39	31.46	0.99	261.00	9	- 0.663	2.132	0.552
101.XX	38	0.12	2.82	0.26	261.11	4	0.000	1.067	0.147
121.00	13	0.00	0.96	0.32	261.30	22	- 0.171	1.588	0.254



## 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
261.31	5	0.000	1.052	0.118					
261.99	4	- 0.199	0.995	0.472					
261.XX	43	- 0.090	1.446	0.269					
271.00	2	0.000	1.082	0.406					
271.XX	2	0.000	1.082	0.406					
281.00	2	0.00	1.21	0.15					
281.XX	3	0.00	1.07	0.25					
289.00	2	0.00	0.24	0.85					
289.30	10	- 0.97	3.07	0.31					
289.XX	13	- 0.70	2.60	0.79					
291.00	3	0.00	0.58	0.78					
291.30	11	- 0.75	2.66	0.16					
291.99	2	0.00	1.20	0.16					
291.XX	16	- 0.56	2.44	0.19					
301.30	3	0.00	1.10	0.15					
301.XX	3	0.00	1.10	0.15					
311.99	8	- 0.01	0.96	0.18					
311.XX	10	0.00	1.01	0.20					
321.00	14	0.691	2.430	0.412					
321.30	28	- 0.465	1.869	0.292					
321.99	3	0.000	1.088	0.212					
321.XX	45	- 0.028	1.973	0.418					