

- Pass 1 Results for 73 Labs - - Pass 2 Results for 72 Labs -

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
Ammoniacal Nitrogen, MgO Distillation	920.03	001.10	6	3.98	0.10	0.04	6	3.98	0.10	0.04
Ammoniacal Nitrogen, Other		001.99	6	3.98	0.15	0.04	6	3.98	0.15	0.04
Method Group 001.XX PCT			13	4.06	0.30	0.04	12	3.98	0.12	0.04
Nitrate Nitrogen, Other		002.99	2	0.02	0.02	0.01	2	0.02	0.02	0.01
Water Insoluble Nitrogen, Meth I	945.01	003.10	4	3.52	0.14	0.02	4	3.52	0.14	0.02
Water Insoluble Nitrogen, Other		003.99	1	3.37	0.00	0.00	1	3.37	0.00	0.00
Method Group 003.XX PCT			5	3.49	0.14	0.01	5	3.49	0.14	0.01
Nitrogen From Urea, Other		005.99	2	8.54	1.05	0.11	2	8.54	1.05	0.11
Total Nitrogen, Modified Comprehensive	978.02	010.11	8	19.35	0.23	0.07	7	19.31	0.22	0.03
Total Nitrogen, Salicylic	955.04D	010.12	1	19.48	0.02	0.03	1	19.48	0.02	0.03
Total Nitrogen, Raney	970.03	010.16	1	19.15	0.07	0.10	1	19.15	0.07	0.10
Total Nitrogen, Combustion		010.60	52	19.62	0.28	0.15	47	19.62	0.26	0.09
Total Nitrogen, Other		010.99	3	19.36	0.20	0.09	3	19.36	0.20	0.09
Method Group 010.XX PCT			65	19.57	0.29	0.13	60	19.56	0.27	0.09
Total Phosphate, Grav Quimociac	962.02	020.10	2	0.01	0.02	0.00	2	0.01	0.02	0.00
Total Phosphate, Spectrometric	958.01	020.20	10	0.11	0.12	0.03	9	0.09	0.09	0.01
Total Phosphate, Automated	978.01	020.40	2	0.28	0.10	0.08	2	0.28	0.10	0.08
Total Phosphate, ICP		020.50	9	0.06	0.09	0.01	8	0.04	0.06	0.00
Total Phosphate, Other		020.99	1	0.08	0.08	0.12	1	0.08	0.08	0.12
Method Group 020.XX PCT			24	0.10	0.12	0.03	22	0.09	0.11	0.02
Insoluble Phosphate, Spectrometric	963.03C	030.20	1	0.07	0.00	0.00	1	0.07	0.00	0.00
Insoluble Phosphate, ICP		030.50	1	0.01	0.00	0.01	1	0.01	0.00	0.01
Method Group 030.XX PCT			2	0.04	0.04	0.00	2	0.04	0.04	0.00
InDir Available Phosphate, ICP		040.50	1	0.02	0.00	0.00	1	0.02	0.00	0.00
InDir Available Phosphate, Other		040.99	1	0.08	0.01	0.01	1	0.08	0.01	0.01
Method Group 040.XX PCT			2	0.05	0.04	0.01	2	0.05	0.04	0.01
Dir Available Phosphate, Grav Quimociac	960.03E	041.10	7	0.01	0.01	0.00	5	0.01	0.01	0.00
Dir Available Phosphate, Automated	978.01	041.40	2	0.13	0.14	0.01	2	0.13	0.14	0.01
Dir Available Phosphate, ICP		041.50	7	0.03	0.03	0.01	6	0.02	0.03	0.01
Dir Available Phosphate, EDTA Extract	993.01	041.60	3	0.02	0.01	0.02	3	0.02	0.01	0.02
Method Group 041.XX PCT			19	0.03	0.06	0.01	16	0.01	0.02	0.01
Water Soluble Phosphate, Spectrometric	970.01	048.20	1	0.15	0.00	0.00	1	0.15	0.00	0.00
Water Soluble Phosphate, ICP		048.50	1	0.00	0.00	0.00	1	0.00	0.00	0.00
Method Group 048.XX PCT			2	0.08	0.09	0.00	2	0.08	0.09	0.00
Soluble Potash, STPB Oxalate	958.02	050.00	17	23.23	0.61	0.10	16	23.22	0.63	0.08
Soluble Potash, AA (Oxalate)		050.30	5	23.48	0.56	0.41	5	23.48	0.56	0.41
Soluble Potash, ICP (Oxalate)		050.50	6	22.07	0.70	0.54	6	22.07	0.70	0.54
Soluble Potash, ICP (Citrate)		050.51	11	23.45	0.56	0.20	10	23.55	0.46	0.15
Soluble Potash, Flame (Oxalate)	983.02(a)	050.60	5	23.90	0.77	0.22	5	23.90	0.77	0.22

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Soluble Potash, Flame (Citrate)	983.02(b)	050.61	7	23.44	0.58	0.25	7	23.44	0.58	0.25
Soluble Potash, Other		050.99	15	23.43	0.93	0.16	14	23.46	0.95	0.13
Method Group 050.XX PCT			66	23.30	0.81	0.22	63	23.32	0.80	0.18
Free Water, Vacuum Oven	965.08B	060.00	6	0.98	0.30	0.05	6	0.98	0.30	0.05
Method Group 060.XX PCT			6	0.98	0.30	0.05	6	0.98	0.30	0.05
Acid Soluble Calcium, ICP		101.30	12	0.11	0.02	0.01	11	0.11	0.02	0.00
Acid Soluble Magnesium, ICP		121.30	12	0.04	0.00	0.00	11	0.04	0.00	0.00
Sulfur, Gravimetric	980.02a	144.01	18	5.00	0.10	0.05	17	5.01	0.09	0.05
Sulfur, Other		144.99	21	4.97	0.28	0.09	19	4.93	0.25	0.05
Method Group 144.XX PCT			40	4.97	0.22	0.08	38	4.95	0.21	0.06
Arsenic, ICP		151.30	9	2.44	2.03	0.52	9	2.44	2.03	0.52
Arsenic, Other		151.99	1	2.10	0.13	0.18	1	2.10	0.13	0.18
Method Group 151.XX PPM			10	2.41	1.93	0.49	10	2.41	1.93	0.49
Acid Soluble Boron, Spectrometric	982.01	165.00	1	0.009	0.000	0.000	1	0.009	0.000	0.000
Acid Soluble Boron, Other		165.99	3	0.006	0.004	0.000	3	0.006	0.004	0.000
Method Group 165.XX PCT			4	0.007	0.003	0.000	4	0.007	0.003	0.000
Cadmium, ICP		181.30	9	0.96	0.85	0.22	8	0.98	0.88	0.14
Cadmium, Other		181.99	1	0.42	0.05	0.07	1	0.42	0.05	0.07
Method Group 181.XX PPM			10	0.90	0.82	0.21	9	0.92	0.85	0.13
Water Soluble Chlorine, Titrimetric	928.02	190.00	5	17.58	0.63	0.29	5	17.58	0.63	0.29
Water Soluble Chlorine, Other		190.99	6	18.15	0.87	0.19	5	18.00	0.86	0.08
Method Group 190.XX PCT			11	17.89	0.80	0.24	11	17.89	0.80	0.24
Chromium, ICP		191.30	11	82.25	20.01	2.43	11	82.25	20.01	2.43
Chromium, Other		191.99	3	57.33	26.23	2.27	3	57.33	26.23	2.27
Method Group 191.XX PPM			14	76.91	23.39	2.40	14	76.91	23.39	2.40
Acid Soluble Cobalt, AA		202.00	1	37.36	1.15	1.62	1	37.36	1.15	1.62
Acid Soluble Cobalt, ICP	965.11	202.30	13	28.07	6.74	1.98	13	28.07	6.74	1.98
Acid Soluble Cobalt, Other		202.99	2	18.42	2.99	0.31	2	18.42	2.99	0.31
Method Group 202.XX PPM			16	27.44	7.40	1.75	14	26.57	7.36	1.12
Acid Soluble Copper, Atomic Absorption	975.01	221.00	5	0.0266	0.0026	0.0009	5	0.0266	0.0026	0.0009
Acid Soluble Copper, ICP		221.30	18	0.0259	0.0021	0.0011	18	0.0259	0.0021	0.0011
Acid Soluble Copper, Other		221.99	1	0.0260	0.0014	0.0020	1	0.0260	0.0014	0.0020
Method Group 221.XX PCT			24	0.0260	0.0021	0.0011	24	0.0260	0.0021	0.0011
Acid Soluble Iron, Atomic Absorption	980.01	241.00	14	3.09	0.32	0.06	13	3.07	0.33	0.05
Acid Soluble Iron, ICP		241.30	29	3.17	0.33	0.12	27	3.16	0.33	0.09
Acid Soluble Iron, Other		241.99	1	3.03	0.01	0.02	1	3.03	0.01	0.02
Method Group 241.XX PCT			44	3.14	0.32	0.10	41	3.13	0.33	0.07
Lead, ICP		251.30	8	9.14	1.06	0.60	8	9.14	1.06	0.60
Lead, Other		251.99	1	7.80	0.42	0.60	1	7.80	0.42	0.60

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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
Method Group 251.XX PPM			9	8.99	1.09	0.60	9	8.99	1.09	0.60
Acid Soluble Manganese, AA	972.02a	261.00	1	0.046	0.004	0.005	1	0.046	0.004	0.005
Acid Soluble Manganese, ICP	972.02a	261.30	15	0.049	0.004	0.001	15	0.049	0.004	0.001
Acid Soluble Manganese, Other		261.99	1	0.047	0.001	0.001	1	0.047	0.001	0.001
Method Group 261.XX PCT			17	0.048	0.004	0.001	16	0.049	0.004	0.001
Mercury, ICP		281.30	2	3.32	4.04	1.60	2	3.32	4.04	1.60
Mercury, Other		281.99	1	0.06	0.01	0.02	1	0.06	0.01	0.02
Method Group 281.XX PPM			3	2.23	3.55	1.07	3	2.23	3.55	1.07
Molybdenum, ICP		289.30	12	8.84	1.34	0.47	11	8.65	1.17	0.33
Molybdenum, Other		289.99	1	5.74	0.05	0.08	1	5.74	0.05	0.08
Method Group 289.XX PPM			13	8.61	1.53	0.44	12	8.41	1.39	0.31
Nickel, Atomic Absorption		291.00	1	48.75	1.34	1.89	1	48.75	1.34	1.89
Nickel, ICP		291.30	12	43.02	6.05	1.64	11	42.51	5.99	1.28
Method Group 291.XX PPM			13	43.46	6.01	1.66	12	43.03	6.00	1.33
Selenium, ICP		301.30	4	0.75	1.17	0.15	3	0.13	0.12	0.01
Sodium, Atomic Absorption	983.04	311.00	1	0.15	0.00	0.00	1	0.15	0.00	0.00
Sodium, Other		311.99	5	0.21	0.01	0.00	5	0.21	0.01	0.00
Method Group 311.XX PCT			6	0.20	0.03	0.00	5	0.20	0.03	0.00
Acid Soluble Zinc, Atomic Absorption	975.02	321.00	13	0.276	0.018	0.013	11	0.278	0.014	0.005
Acid Soluble Zinc, ICP		321.30	31	0.288	0.016	0.007	30	0.289	0.014	0.006
Method Group 321.XX PCT			44	0.284	0.018	0.008	41	0.286	0.015	0.006
Water Soluble Zinc, ICP		325.30	2	0.269	0.041	0.020	2	0.269	0.041	0.020
Water Soluble Zinc, Other		325.99	2	0.253	0.050	0.010	2	0.253	0.050	0.010
Method Group 325.XX PCT			4	0.261	0.043	0.015	4	0.261	0.043	0.015

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 001.10 PCT											
Ammoniacal Nitrogen											
MgO Distillation											
257	5.02 s	10.47									
090	4.14	1.53									
029	4.04	.58									
230	4.03	.44									
Avg	3.98										
291	3.94	-.49									
232	3.90	-.97									
456	3.87	-1.20									
117	1.96 s	-20.62									
Meth: 001.99 PCT											
Ammoniacal Nitrogen											
Other											
393	7.47 s	23.87									
371	5.32 S	9.18									
420	4.25	1.84									
096	4.05	.51									
Avg	3.98										
397	3.96	-.31									
368	3.92	-.46									
255	3.86	-.86									
027	3.85	-.90									
419	2.22 S	-12.08									
Meth: 001.99 PCT											
Water Insoluble Nitr											
Meth I											
230	3.74	1.60									
Avg	3.52										
057	3.48	-.37									
090	3.44	-.61									
029	3.44	-.65									
Meth: 003.99 PCT											
Water Insoluble Nitr											
Other											
027	3.37	.00									
Meth: 003.99 PCT											
Water Insoluble Nitr											
230	3.74	1.83									
Avg	3.49										
057	3.48	-.17									
090	3.44	-.38									
029	3.44	-.43									
027	3.37	-.90									
291	3.94	-.39									
Meth: 001.99 PCT											
Ammoniacal Nitrogen											
393	7.47 s	28.61									
371	5.32 s	11.00									
257	5.02 A	8.47									
420	4.25	2.19									
090	4.14	1.25									
096	4.05	.60									
029	4.04	.48									
230	4.03	.37									
Avg	3.98										
397	3.96	-.38									
291	3.94	-.39									
Meth: 001.10 PCT											
Ammoniacal Nitrogen											
MgO Distillation											
257	5.02 s	10.47									
090	4.14	1.53									
029	4.04	.58									
230	4.03	.44									
Avg	3.98										
291	3.94	-.49									
232	3.90	-.97									
456	3.87	-1.20									
117	1.96 s	-20.62									
Meth: 005.99 PCT											
Nitrogen From Urea											
Other											
029	9.44	.87									
Avg	8.54										
419	7.64	-.86									
Meth: 010.11 PCT											
Total Nitrogen											
Modified Comprehensive											
460	19.68	1.67									
114	19.61 R	1.57									
456	19.43	.54									
073	19.38	.29									
090	19.36	.19									
Avg	19.31										
029	19.22	-.47									
416	19.19	-.60									
211	18.96	-1.65									
457	16.25 s	-14.15									
Meth: 010.12 PCT											
Total Nitrogen											
Salicylic											
Avg	19.48										
397	19.48	-.71									
455	18.40 S	-50.68									
Meth: 010.16 PCT											
Total Nitrogen											
Raney											
419	19.15	.71									
Meth: 010.60 PCT											
Total Nitrogen											
Combustion											
393	20.40	3.04									
453	20.11 R	2.28									
360	20.12	2.05									
095	20.11	1.99									
262	19.75 R	1.78									
037	19.95	1.43									
292	19.92	1.31									
096	19.87	1.13									
034	19.85	1.06									
233	19.78	.87									
023	19.80	.83									
368	19.80	.68									
330	19.75	.53									
049	19.74	.53									
055	19.73	.41									
102	19.65	.38									
291	19.72	.37									
296	19.71	.35									
450	19.70	.31									
324	19.70	.31									
234	19.68	.30									
177	19.67	.24									
231	19.67	.24									
136	19.66	.22									
040	19.66	.19									
029	19.64	.06									
Avg	19.62										
028	19.61	-.11									
247	19.61	-.12									
131	19.62	-.14									
232	19.59	-.14									
041	19.58	-.19									
009	19.57	-.24									
390	19.58	-.28									
043	19.59	-.29									
405	19.55	-.31									
377	19.52	-.40									
402	19.46	-.62									
057	19.47	-.64									
230	19.45	-.87									

\* 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
Meth: 010.XX PCT											
<u>Total Nitrogen</u>											
330	19.75	.71	406	19.34	-.84	Meth: 020.20 PCT					
049	19.74	.70	451	19.31	-.92	<u>Total Phosphate</u>					
114	19.61	.66	255	19.40	-.95	114	1.05 s	9.03	Meth: 030.XX PCT		
055	19.73	.60	042	19.45 R	-1.00	096	0.36	2.63	<u>Insoluble Phosphate</u>		
291	19.72	.56	426	19.31	-1.04	432	0.26	1.57	405	0.07	.86
296	19.71	.54	443	19.25	-1.15	460	0.00	-.99	255	0.04	-.87
450	19.70	.51	027	19.24	-1.19	257	0.00	-.99	Meth: 040.50 PCT		
324	19.70	.51	029	19.22	-1.25	Meth: 041.10 PCT					
102	19.65	.46	024	19.22	-1.26	<u>Dir Available Phosph</u>					
234	19.68	.46	416	19.19	-1.37	<u>Grav Quimociac</u>					
177	19.67	.42	419	19.15	-1.51	096	0.36	.84	296	0.16 s	24.34
460	19.68	.41	255	19.11	-1.65	Avg	0.28	-.45	055	0.03 R	2.06
231	19.67	.41	007	19.20 R	-1.97	042	0.20	-.89	040	0.02	1.44
136	19.66	.38	361	19.01	-2.03	Meth: 030.20 PCT					
040	19.66	.36	211	18.96	-2.21	<u>Insoluble Phosphate</u>					
029	19.64	.27	455	18.40 s	-4.24	096	0.04	-.69	260	0.00	-.76
043	19.59	.25	457	16.25 s	-12.10	Meth: 020.50 PCT	Meth: 041.20 PCT				
131	19.62	.23	106	14.15 s	-19.74	Total Phosphate	<u>Dir Available Phosph</u>				
390	19.58	.23	Meth: 020.10 PCT			ICP	<u>Spectrometric</u>				
247	19.61	.21	090	0.03	.90	432	0.26 R	3.33	296	0.02 R	1.05
028	19.61	.18	Avg	0.04	-.13	330	0.20	2.47	185	0.02 R	1.05
009	19.57	.09	Total Phosphate	Meth: 020.99 PCT					211	0.01	.84
232	19.59	.09	<u>Grav Quimociac</u>	<u>Total Phosphate</u>					Avg	0.01	
041	19.58	.07	114	1.05 S	69.17	361	0.02	-.31	260	0.00	-.76
Avg	19.56		090	0.01	-.90	402	0.01	-.40	049	0.00	-.76
405	19.55	-.11	Avg	0.01	-.54	368	0.01	-.54	029	0.00	-.76
377	19.52	-.17	041	0.00	-.83	393	0.00 X	-.62	Meth: 041.20 PCT		
420	19.50	-.25	Meth: 020.20 PCT			390	0.00	-.62	262	0.60 S	.00
397	19.48	-.32	Total Phosphate	Meth: 030.50 PCT					Dir Available Phosph		
402	19.46	-.37	<u>Spectrometric</u>	<u>Total Phosphate</u>					<u>Spectrometric</u>		
371	19.48	-.39	262	4.25 s	47.23	455	1.15 S	12.62	Meth: 041.20 PCT		
057	19.47	-.42	324	0.34 R	3.18	443	0.08	.71	262	0.60 S	.00
456	19.43	-.48	406	0.25	1.80	Avg	0.08		Meth: 041.20 PCT		
307	19.38	-.67	420	0.20	1.30	Meth: 020.99 PCT					
230	19.45	-.68	405	0.16	.77	Total Phosphate	<u>Dir Available Phosph</u>				
073	19.38	-.68	Avg	0.09		<u>Other</u>	<u>Spectrometric</u>				
090	19.36	-.75	450	0.07	-.31	455	1.15 s	39.09	Meth: 041.20 PCT		
325	19.35	-.79	292	0.06	-.31	262	4.25 s	39.09	262	0.60 S	.00
						455	1.15 s	9.98	Meth: 041.20 PCT		

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Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index			
Meth: 041.40 PCT														
Dir Available Phosph														
Automated														
027	1.00 S	6.27										402	24.69	1.29
095	0.25	.87										450	24.56	1.17
Avg	0.13											360	24.41	1.00
029	0.01	-.87										330	23.95	.54
Meth: 041.50 PCT														
Dir Available Phosph														
ICP														
377	0.08 R	2.12										177	23.74	.30
043	0.07	1.58										405	23.69	.25
023	0.05	1.10										027	23.60	.15
Avg	0.02											Avg	23.46	
361	0.01	-.39										368	23.24	-.23
360	0.00	-.74										042	23.10 R	-.49
393	0.00 X	-.74										232	22.88	-.61
325	0.00	-.74										255	22.40	-1.11
Meth: 041.60 PCT														
Dir Available Phosph														
EDTA Extract														
296	0.02	.91										260	22.19	-1.35
Avg	0.02											371	21.31	-2.26
073	0.01	-.40										457	19.80 S	-3.84
043	0.02	-1.23										455	17.85 s	-5.89
Meth: 041.60 PCT														
Dir Available Phosph														
Spectrometric														
420	0.15	.00										Meth: 050.60 PCT		
Water Soluble Phosph														
Soluble Potash														
AA (Oxalate)														
073	23.91	1.20										443	25.07	1.55
040	23.89	.78										406	24.38	.63
185	23.70	.43										Avg	23.90	
Avg	23.48											131	23.54	-.48
262	23.19	-.62										460	23.35	-.74
043	22.71	-1.37										055	23.17	-.96
Meth: 048.20 PCT														
Water Soluble Phosph														
Soluble Potash														
ICP														
393	0.00 X	.00										Meth: 050.61 PCT		
Meth: 048.20 PCT														
Water Soluble Phosph														
Soluble Potash														
ICP (Citrate)														
420	0.15	.87										095	24.49	1.84
Avg	0.08											024	23.79	.60
393	0.00 X	-.87										029	23.57	.22
Meth: 041.25 PCT														
Dir Available Phosph														
027	1.00 s	51.25										Avg	23.44	
262	0.60 s	30.60										034	23.31	-.33
095	0.25 A	12.04										028	23.18	-.47
296	0.16 s	11.30										456	23.03	-.76
377	0.08 R	3.41										041	22.75	-1.34
043	0.07	2.64										Meth: 050.50 PCT		
023	0.05	1.92										Soluble Potash		
043	0.02 R	.78										Flame (Citrate)		
055	0.03	.60										095	24.49	1.49
296	0.02	.59										024	23.79	.60
Meth: 050.51 PCT														
Dir Available Phosph														
Soluble Potash														
ICP (Citrate)														
027	1.00 S	6.27										029	23.57	.22
095	0.25	.87										024	23.79	.60
Avg	0.13											029	23.57	.22
029	0.01	-.87										Avg	23.44	
Meth: 050.00 PCT														
Dir Available Phosph														
STPB Oxalate														
040	0.02	.28										034	23.31	-.33
185	0.02	.26										028	23.18	-.47
Avg	0.01	-.03										456	23.03	-.76
211	0.01	-.23										041	22.75	-1.34
073	0.01	-.23										Meth: 050.61 PCT		
361	0.01	-.25										Soluble Potash		
029	0.01	-.57										Flame (Citrate)		
325	0.00	-.77										095	24.49	1.84
360	0.00	-.77										024	23.79	.60
049	0.00	-.77										029	23.57	.22
029	0.00	-.77										Avg	23.44	
393	0.00 X	-.77										034	23.31	-.33
260	0.00	-.77										028	23.18	-.47
Meth: 048.20 PCT														
Water Soluble Phosph														
Spectrometric														
420	0.15	.00										456	23.03	-.76
Meth: 048.50 PCT														
Water Soluble Phosph														
ICP														
393	0.00 X	.00										041	22.75	-1.34
Meth: 048.20 PCT														
Water Soluble Phosph														
Soluble Potash														
ICP (Oxalate)														
420	0.15	.87										095	24.49	1.84
Avg	0.08											024	23.79	.60
393	0.00 X	-.87										029	23.57	.22
Meth: 050.00 PCT														
Dir Available Phosph														
STPB Oxalate														
009	24.62	2.24										451	28.27 s	7.12
211	23.76	.86										443	25.07	2.22
247	23.55	.54										402	24.69	1.72
114	23.52	.50										009	24.62	1.64
231	23.50	.46										450	24.56	1.58
Meth: 050.99 PCT														
Soluble Potash														
Other														
402	24.69	1.29										095	24.49	1.49
450	24.56	1.17										360	24.41	1.37
360	24.41	1.00										393	24.41	1.37
330	23.95	.54										406	24.38	1.34
131	23.92	.48										073	23.91 R	.99
325	23.85	.42										330	23.95	.82
177	23.74	.30										131	23.92	.75
405	23.69	.25										040	23.89	.74
027	23.60	.15										325	23.85	.67
Avg	23.46											432	23.85	.67
368	23.24	-.23										291	23.80	.60
042	23.10 R	-.49										291	23.80	.60
232	22.88	-.61												
255	22.40	-1.11												
260	22.19	-1.35												
371	21.31	-2.26												
457	19.80 S	-3.84												
455	17.85 s	-5.89												

\* 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: 050.XX PCT																
<u>Soluble Potash</u>																
024	23.79	.59	043	22.71	-.77	Meth: 060.XX PCT									Meth: 144.99 PCT	
007	23.65	.56	029	22.69	-.79	<u>Free Water</u>									Sulfur	
009	23.76	.55	041	22.75	-.83	456 0.99 .17									Other	
211	23.76	.55	022	22.55	-.97	007 1.03 .16									131 5.31 1.48	
177	23.74	.53	255	22.40	-1.16	Avg 0.98									177 5.18 R 1.18	
185	23.70	.50	022	22.44 R	-1.20	363 0.90 -.27									360 5.12 .72	
405	23.69	.47	390	22.30	-1.29	247 0.84 -.49									232 5.08 .58	
023	23.61	.36	260	22.19	-1.44	416 0.60 -1.28									009 5.07 .54	
027	23.60	.35	324	22.30 R	-1.55	Meth: 101.30 PCT									231 5.03 .43	
029	23.57	.32	420	21.96	-1.72	<u>Acid Soluble Calcium</u>									361 5.01 .32	
247	23.55	.30	257	21.65	-2.10	ICP									Avg 4.93	
131	23.54	.27	426	21.50	-2.32	393 0.20 s 5.60									027 4.93 -.03	
114	23.52	.27	292	21.31	-2.52	057 0.15 R 3.32									393 4.89 X -.16	
231	23.50	.24	371	21.31	-2.53	027 0.15 2.72									450 4.92 -.26	
397	23.39	.23	230	20.15 s	-4.07	453 0.12 1.06									457 4.90 -.41	
460	23.35	.19	457	19.80 s	-4.42	096 0.11 .14									368 4.82 -.44	
055	23.46	.18	455	17.85 s	-6.87	Avg 0.11									247 4.79 -.56	
057	23.44	.15	Meth: 060.00 PCT												363 4.79 -.56	
090	23.37	.09	<u>Free Water</u>												390 4.71 -.87	
377	23.36	.07	096 1.54 1.87												453 4.69 -.94	
Meth: 121.30 PCT																
<u>Vacuum Oven</u>																
049	23.24	-.10	096	1.54	1.87	Meth: 121.30 PCT									Meth: 144.XX PCT	
368	23.24	-.11	456	0.99	.17	ICP									Sulfur	
296	23.28	-.15	007	1.03	.16	393 0.06 s 5.39									040 10.84 s 28.92	
034	23.31	-.17	Avg	0.98		453 0.04 R 2.10									117 5.42 R 2.56	
361	23.18	-.18	363	0.90	-.27	022 0.05 1.58									291 5.40 2.17	
028	23.18	-.19	247	0.84	-.49	027 0.05 1.56									307 5.31 1.75	
055	23.17	-.24	416	0.60	-1.28	057 0.04 .62									131 5.31 1.72	
262	23.19	-.29	Meth: 060.99 PCT												177 5.18 R 1.37	
043	23.03	-.37	<u>Free Water</u>												055 5.15 1.01	
456	23.03	-.40	443 8.19 S .00												405 5.14 .90	
102	22.97	-.44	<u>Other</u>												360 5.12 .78	
043	22.96	-.45	131 0.04 .61												262 5.11 .73	
042	23.10	-.47	Avg 0.04												457 5.11 .73	
416	22.92	-.51	Meth: 060.XX PCT												232 5.08 .60	
232	22.88	-.55	<u>Free Water</u>												296 5.07 .58	
419	23.05	-.55	443 8.19 s 24.22												009 5.07 .55	
453	22.88	-.61	096 1.54 1.87												009 5.07 .55	

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Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 144.XX PCT											
<u>Sulfur</u>											
324	4.99	.44									
231	5.03	.43									
419	5.03	.38									
397	5.02	.37									
029	5.01	.36									
361	5.01	.29									
095	5.01	.27									
057	5.01	.25									
073	5.00	.24									
102	4.98	.16									
Avg	4.95										
114	4.93	-.12									
043	4.93	-.12									
027	4.93	-.15									
393	4.89	X									
028	4.89	-.32									
371	4.89	-.33									
450	4.92	-.37									
457	4.90	-.55									
368	4.82	-.65									
247	4.79	-.80									
363	4.79	-.80									
106	4.77	-1.00									
390	4.71	-1.19									
453	4.69	-1.28									
230	4.57	-1.93									
049	4.48	-2.29									
255	4.47	-2.37									
023	2.46	s -12.12									
450	2.30	s -12.94									
Meth: 151.30 PPM											
<u>Arsenic</u>											
<u>ICP</u>											
368	6.00	1.78									
232	4.52	1.04									
390	4.06	.83									
393	2.99	.27									
Meth: 151.30 PPM											
<u>Arsenic</u>											
<u>ICP</u>											
231	2.10	.71									
Meth: 151.99 PPM											
<u>Arsenic</u>											
<u>Other</u>											
231	2.10	.71									
Meth: 151.99 PPM											
<u>Arsenic</u>											
<u>ICP</u>											
291	9.00	s 9.08									
232	2.42	1.62									
419	2.35	1.57									
Avg	0.98										
247	0.90	-.15									
009	0.80	-.21									
296	0.60	-.45									
368	0.75	R -0.57									
393	0.42	-.64									
102	0.38	-.68									
450	0.00	-1.11									
Meth: 165.99 PCT											
<u>Acid Soluble Boron</u>											
<u>Other</u>											
453	0.002	-.93									
Meth: 165.99 PCT											
<u>Acid Soluble Boron</u>											
<u>ICP</u>											
291	9.00	s 9.08									
232	2.42	1.62									
419	2.35	1.57									
Avg	0.98										
247	0.90	-.15									
009	0.80	-.21									
296	0.60	-.45									
368	0.75	R -0.57									
393	0.42	-.64									
102	0.38	-.68									
450	0.00	-1.11									
Meth: 165.00 PCT											
<u>Acid Soluble Boron</u>											
<u>Spectrometric</u>											
393	0.009	-.71									
Meth: 181.99 PPM											
<u>Cadmium</u>											
<u>Other</u>											
231	0.42	-.71									
Meth: 181.99 PPM											
<u>Cadmium</u>											
<u>Other</u>											
009	17.94	-.08									
027	17.32	-.79									
397	17.13	-1.01									
Meth: 190.99 PCT											
<u>Water Soluble Chlori</u>											
<u>Other</u>											
419	19.45	1.68									
368	18.89	R 1.11									
460	18.15	.19									
Avg	18.00										
009	17.94	-.08									
027	17.32	-.79									
397	17.13	-1.01									
Meth: 190.00 PCT											
<u>Water Soluble Chlori</u>											
<u>Titrimetric</u>											
028	18.12	.85									
057	17.99	.77									
029	17.97	.61									
Avg	17.58										
043	17.20	-.64									
023	16.65	X -1.55									
Meth: 191.99 PPM											
<u>Chromium</u>											
<u>Other</u>											
457	90.47	1.27									
Avg	57.33										
405	46.50	-.41									
231	35.02	-.85									
Meth: 191.30 PPM											
<u>Chromium</u>											
<u>ICP</u>											
419	173.50	s 4.56									
393	129.45	2.36									
291	98.07	.79									
368	89.00	.39									
009	84.55	.15									
450	82.50	.03									
Avg	82.25										
247	80.50	-.09									
096	80.00	-.19									
232	77.55	-.24									
102	74.18	-.40									
027	55.49	-1.34									
037	53.44	-1.44									
Meth: 191.30 PPM											
<u>Chromium</u>											
<u>ICP</u>											
419	173.50	s 4.56									
393	129.45	2.36									
291	98.07	.79									
368	89.00	.39									
009	84.55	.15									
450	82.50	.03									
Avg	82.25										
247	80.50	-.09									
096	80.00	-.19									
232	77.55	-.24									
102	74.18	-.40									
027	55.49	-1.34									
037	53.44	-1.44									
Meth: 191.30 PPM											
<u>Chromium</u>											
<u>ICP</u>											
419	173.50	s 4.56									
393	129.45	2.36									
291	98.07	.79									
368	89.00	.39									
009	84.55	.15									
450	82.50	.03									
Avg	82.25										
247	80.50	-.09									
096	80.00	-.19									
232	77.55	-.24									
102	74.18	-.40									
027	55.49	-1.34									
037	53.44	-1.44									
Meth: 191.30 PPM											
<u>Chromium</u>											
<u>ICP</u>											
419	173.50	s 4.56									
393	129.45	2.36									
291	98.07	.79									
368	89.00	.39									
009	84.55	.15									
450	82.50	.03									
Avg	82.25										
247	80.50	-.09									
096	80.00	-.19									
232	77.55	-.24									
102	74.18	-.40									
027	55.49	-1.34									
037	53.44	-1.44									
Meth: 191.30 PPM											
<u>Chromium</u>											
<u>ICP</u>											
419	173.50	s 4.56									
393	129.45	2.36									
291	98.07	.79									
368	89.00	.39									
009	84.55	.15									
450	82.50	.03									
Avg	82.25										
247	80.50	-.09									
096	80.00	-.19									
232	77.55	-.24									
102	74.18	-.40									
027	55.49	-1.34									
037	53.44	-1.44									

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Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	
Meth: 191.XX PPM												
<u>Chromium</u>												
009	84.55	.34										Meth: 241.30 PCT
450	82.50	.24										Acid Soluble Iron
096	80.00	.18										ICP
247	80.50	.16										117
232	77.55	.06										057
Avg	76.91											330
102	74.18	-.12										360
027	55.49	-.92										073
037	53.44	-1.00										432
405	46.50	-1.30										027
231	35.02	-1.79										450
Meth: 202.99 PPM												
<u>Acid Soluble Cobalt</u>												
457	37.36	.71										324
009	30.95	.60										057
096	30.50	.57										027
296	30.15	.56										095
450	30.50	.54										307
Avg	26.57											Avg
390	23.95	-.36										041
037	23.40	-.43										402
393	21.01	-.76										131
232	20.50	-.83										393
102	19.02	-1.03										231
247	16.50	-1.37										460
368	31.00	.62										028
009	30.95	.44										040
296	30.15	.43										029
096	30.50	.42										296
450	30.50	.36										371
Avg	28.07											Avg
390	23.95	-.61										457
037	23.40	-.69										457
232	20.50	-1.13										009
102	19.02	-1.35										247
247	16.50	-1.72										368
Meth: 202.00 PPM												
<u>Acid Soluble Cobalt</u>												
057	36.12	1.28										057
291	36.33	1.23										027
419	36.00	1.18										095
368	31.00	.62										307
009	30.95	.44										022
296	30.15	.43										022
096	30.50	.42										232
450	30.50	.36										043
Avg	28.07											096
390	23.95	-.61										022
037	23.40	-.69										022
232	20.50	-1.13										450
102	19.02	-1.35										453
247	16.50	-1.72										023
Meth: 221.30 PCT												
<u>Acid Soluble Copper</u>												
433	0.2740 s	120.44										022
419	0.0493 s	11.37										022
102	0.0300	2.01										232
009	0.0283	1.33										043
247	0.0278	.96										096
368	0.0272	.91										022
057	0.0272	.82										022
324	0.0265	.79										022
027	0.0265	.76										022
131	0.0256	-.37										022
393	0.0252	-.41										022
231	0.0260	-.47										022
460	0.0249	-.53										022
022	0.0250	-.67										022
232	0.0244	-.79										022
043	0.0242	-.85										022
096	0.0241	-.93										022
022	0.0239	-1.04										022
450	0.0231	-1.38										022
453	0.0220	-1.88										022
Meth: 221.99 PCT												
<u>Acid Soluble Copper</u>												
231	0.0260	-.71										022
Meth: 221.00 PCT												
<u>Acid Soluble Copper</u>												
262	0.0300	1.30										022
457	0.0290	.99										022
Avg	0.0266											022
460	0.0249	-.66										022
022	0.0250	-.73										022
043	0.0242	-.93										022
Meth: 221.00 PCT												
<u>Atomic Absorption</u>												
262	0.0300	1.30										022
457	0.0290	.99										022
Avg	0.0266											022
460	0.0249	-.66										022
022	0.0250	-.73										022
043	0.0242	-.93										022
Meth: 241.00 PCT												
<u>Acid Soluble Iron</u>												
457	3.45	1.15										022
055	3.39	.97										022
043	3.34	.81										022
460	3.30 R	.76										022
028	3.27	.64										022
040	3.28	.64										022
029	3.27	.61										022
296	3.20	.43										022
371	3.21	.40										022
Avg	3.07											022
397	2.97	-.32										022
022	2.88	-.64										022
177	2.69	-1.18										022
363	2.63	-1.38										022
262	2.41	-2.06										022
Meth: 241.00 PCT												
<u>Atomic Absorption</u>												
457	3.45	1.15										022
055	3.39	.97										022
043	3.34	.81										022
460	3.30 R	.76										022
028	3.27	.64										022
040	3.28	.64										022
029	3.27	.61										022
296	3.20	.43										022
371	3.21	.40										022
Avg	3.07											022
397	2.97	-.32										022
022	2.88	-.64										022
177	2.69	-1.18										022
363	2.63	-1.38										022
262	2.41	-2.06										022

\* 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
Meth: 241.99 PCT											
Acid Soluble Iron											
Other			234	3.03	- .32						
Avg	3.03		102	3.00	- .45						
234	3.03	- .71	397	2.97	- .50						
027	0.35 S-189.79		368	3.12 R	- .52	Meth: 251.99 PPM					
			042	2.90	- .78	Lead					
Meth: 241.99 PCT											
Acid Soluble Iron											
117	4.04	2.79	022	2.88	- .81	291	41.01 s	29.40			
057	3.32 R	1.05	095	2.86	- .84	419	31.00 s	20.52			
330	3.40 R	1.02	177	2.69	- 1.36	368	10.80	1.68			
360	3.46	1.00	393	2.69	- 1.38	450	10.50	1.46			
457	3.45	.97	363	2.63	- 1.56	009	9.20	.26			
073	3.44	.93	114	2.62	- 1.62	Avg	8.99				
432	3.42	.88	419	2.53	- 1.89	393	8.74	- .24			
027	3.41	.85	231	2.51	- 1.94	390	8.93	- .38			
055	3.39	.79	262	2.41	- 2.24	296	8.60	- .45			
450	3.36	.69	453	1.70 s	- 4.42	102	8.72	- .55			
324	3.35	.67	023	1.65 s	- 4.56	231	7.80	- 1.13			
131	3.34	.64	247	0.95 s	- 6.72	232	7.66	- 1.23			
043	3.34	.63	027	0.35 s	- 8.56	Meth: 261.00 PCT					
460	3.30	.60	420	0.26 s	- 8.83	Acid Soluble Manganese					
041	3.28	.54	Meth: 251.30 PPM								
291	3.31	.53	Lead			AA			022	0.046	.71
009	3.28	.48	ICP			Meth: 261.30 PCT					
028	3.27	.47	291	41.01 S	30.13	Acid Soluble Manganese					
040	3.28	.46	419	31.00 S	20.99	ICP					
029	3.27	.43	368	10.80	1.59	419	0.096 s	12.44			
096	3.24	.33	450	10.50	1.37	027	0.055	1.66			
232	3.21	.32	009	9.20	.20	073	0.053	1.00			
296	3.20	.28	Avg	9.14		402	0.052	.86			
402	3.22	.26	393	8.74	- .39	057	0.051	.64			
433	3.20	.25	390	8.93	- .43	041	0.050	.42			
255	3.21	.24	296	8.60	- .59	041	0.050	.42			
371	3.21	.22	102	8.72	- .64	102	0.050	.33			
Avg	3.13		232	7.66	- 1.40	131	0.050	.29			
405	3.13	- .09	Meth: 281.30 PPM								
390	3.09	- .18	Mercury								
426	3.13	- .28	Avg	0.049	.25	390	0.050	.25			
			ICP			Avg	0.049				
			096	0.049	- .02	393	6.63	.91			

\* 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

Meth: 321.XX PCT

Acid Soluble Zinc	Lab Average*	Index
037	0.287	.24
027	0.287	.04
Avg	0.286	
022	0.284	-.14
040	0.286	-.20
255	0.284	-.25
247	0.282	-.30
231	0.285	-.34
397	0.286	-.37
028	0.281	-.40
371	0.280	-.41
457	0.280	-.41
232	0.276	-.69
041	0.275	-.82
291	0.274	-.84
043	0.272	-.99
073	0.271	-1.05
114	0.270	-1.08
029	0.267	-1.33
292	0.265	-1.46
262	0.260	-1.75
363	0.260	-1.79
055	0.255	-2.12
022	0.264 R	-2.14
296	0.261 R	-2.72
042	0.245 R	-2.94
257	0.210 s	-5.11
023	0.140 s	-9.84
420	0.029 s	-17.25

Meth: 325.99 PCT

Water Soluble Zinc	Lab Average*	Index
Other		
453	0.296	.88
Avg	0.253	
257	0.210	-.86

Meth: 325.XX PCT

Water Soluble Zinc	Lab Average*	Index
426	0.302	.97
453	0.296	.84
Avg	0.261	
432	0.235	-.69
257	0.210	-1.18

Meth: 325.30 PCT

Water Soluble Zinc	Lab Average*	Index
ICP		
426	0.302	.83
Avg	0.269	
432	0.235	-.90

\* 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
001.10	8	- 1.26	8.66	0.61	101.XX	13	0.63	1.88	0.65
001.99	9	2.33	9.72	0.26	121.30	13	0.50	1.75	0.56
001.XX	17	1.00	9.65	0.40	121.XX	13	0.50	1.75	0.56
002.99	2	0.00	1.20	0.17	144.01	20	- 1.99	7.18	0.51
002.XX	2	0.00	1.20	0.17	144.99	23	0.71	5.42	0.75
003.10	4	0.00	1.08	0.08	144.XX	41	0.32	5.12	1.22
003.XX	5	0.00	1.06	0.07	151.30	9	0.00	1.01	0.18
005.99	2	0.00	1.22	0.07	151.XX	10	0.00	1.01	0.18
005.XX	2	0.00	1.22	0.07	165.99	3	0.000	1.114	0.081
010.11	9	- 1.42	4.87	0.33	165.XX	4	0.000	1.077	0.076
010.12	2	- 25.34	35.83	0.50	181.30	10	0.88	3.02	0.20
010.60	53	- 0.39	3.06	0.46	181.XX	11	0.85	3.02	0.20
010.99	3	0.00	1.08	0.24	190.00	5	0.00	1.01	0.30
010.XX	66	- 0.50	3.03	0.42	190.99	6	0.17	1.04	0.17
020.10	3	23.06	39.94	0.43	190.XX	11	0.00	1.00	0.21
020.20	11	4.56	14.20	0.53	191.30	12	0.38	1.64	0.08
020.40	2	0.00	1.11	0.36	191.99	3	0.00	1.12	0.06
020.50	9	0.37	1.47	0.09	191.XX	15	0.28	1.45	0.07
020.99	2	6.31	8.92	0.65	202.30	13	0.00	1.00	0.21
020.XX	27	2.24	7.84	0.33	202.99	2	0.00	1.22	0.07
030.XX	2	0.00	1.22	0.06	202.XX	16	0.12	1.01	0.18
040.XX	2	0.00	1.22	0.10	221.00	5	0.0000	1.0245	0.2456
041.10	8	2.46	5.90	6.22	221.30	20	6.5893	26.925	0.6377
041.40	3	2.09	3.72	0.04	221.XX	25	5.0872	23.139	0.5691
041.50	7	0.28	1.19	0.37	241.00	14	0.05	0.99	0.13
041.60	3	0.00	0.39	0.86	241.30	33	- 0.70	2.32	0.25
041.XX	19	5.26	13.37	1.67	241.99	2	- 94.89	134.20	0.50
048.XX	2	0.00	1.22	0.00	241.XX	48	- 0.58	2.07	0.71
050.00	18	- 0.26	1.50	0.26	251.30	10	5.08	10.96	1.29
050.30	5	0.00	0.92	0.47	251.XX	11	4.51	10.27	1.20
050.50	7	1.26	3.43	1.55	261.30	16	0.777	3.255	0.206
050.51	11	- 0.22	1.19	0.35	261.XX	17	0.728	3.243	0.253
050.60	5	0.00	1.04	0.17	281.30	2	0.00	1.16	0.28
050.61	7	0.00	1.00	0.28	281.XX	3	0.00	1.07	0.26
050.99	17	- 0.59	1.89	0.12	289.30	14	1.46	3.47	0.32
050.XX	63	- 0.16	1.70	0.51	289.XX	15	1.19	2.95	0.26
060.00	6	0.00	1.04	0.11	291.30	13	0.75	2.59	0.24
060.XX	7	3.45	9.19	0.52	291.XX	15	0.37	2.70	0.23
101.30	13	0.63	1.88	0.65	301.30	5	17.97	29.87	5.75

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
301.XX	5	17.97	29.87	5.75					
311.99	5	0.00	0.99	0.33					
311.XX	6	0.10	0.98	0.13					
321.00	14	- 0.503	1.564	0.752					
321.30	35	0.005	5.925	0.808					
321.XX	48	- 0.133	4.878	0.753					
325.30	2	0.000	1.162	0.274					
325.99	2	0.000	1.210	0.134					
325.XX	3	- 0.270	1.105	0.212					