

- 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, Other .....		001.99	2	0.65	0.11	0.08	2	0.65	0.11	0.08
Nitrate Nitrogen, Other .....		002.99	1	0.02	0.00	0.00	1	0.02	0.00	0.00
Ammon & Nitrate N, Devarda .....	892.01	009.10	1	1.04	0.03	0.04	1	1.04	0.03	0.04
Total Nitrogen, Modified Comprehensive	978.02	010.11	8	2.12	0.06	0.03	8	2.12	0.06	0.03
Total Nitrogen, Salicylic .....	955.04D	010.12	4	2.06	0.12	0.06	4	2.06	0.12	0.06
Total Nitrogen, Raney .....	970.03	010.16	1	2.12	0.04	0.05	1	2.12	0.04	0.05
Total Nitrogen, Combustion .....		010.60	45	2.15	0.10	0.05	41	2.14	0.10	0.03
Total Nitrogen, Other .....		010.99	4	2.09	0.05	0.02	4	2.09	0.05	0.02
Method Group 010.XX PCT			63	2.14	0.10	0.05	58	2.13	0.09	0.03
Total Phosphate, Spectrometric .....	958.01	020.20	1	0.11	0.00	0.00	1	0.11	0.00	0.00
Total Phosphate, Automated .....	978.01	020.40	1	0.08	0.01	0.01	1	0.08	0.01	0.01
Total Phosphate, ICP .....		020.50	3	0.34	0.41	0.00	3	0.34	0.41	0.00
Method Group 020.XX PCT			5	0.24	0.33	0.00	5	0.24	0.33	0.00
Dir Available Phosphate, ICP .....		041.50	2	0.00	0.00	0.00	2	0.00	0.00	0.00
Water Soluble Phosphate, Spectrometric	970.01	048.20	1	0.03	0.00	0.00	1	0.03	0.00	0.00
Soluble Potash, ICP (Oxalate) .....		050.50	1	0.00	0.00	0.00	1	0.00	0.00	0.00
Soluble Potash, ICP (Citrate) .....		050.51	2	0.12	0.03	0.00	2	0.12	0.03	0.00
Soluble Potash, Flame (Citrate) .....	983.02(b)	050.61	1	0.12	0.00	0.00	1	0.12	0.00	0.00
Soluble Potash, Other .....		050.99	4	0.12	0.04	0.01	3	0.12	0.05	0.00
Method Group 050.XX PCT			8	0.10	0.05	0.00	7	0.10	0.06	0.00
Free Water, Vacuum Oven .....	965.08B	060.00	1	1.38	0.00	0.01	1	1.38	0.00	0.01
Acid Soluble Calcium, ICP .....		101.30	13	4.32	0.09	0.09	13	4.32	0.09	0.09
Acid Soluble Magnesium, ICP .....		121.30	14	0.93	0.05	0.02	14	0.93	0.05	0.02
Sulfur, Gravimetric .....	980.02a	144.01	19	14.25	0.42	0.13	18	14.24	0.43	0.12
Sulfur, Gravimetric .....	980.02b	144.02	1	13.89	0.01	0.02	1	13.89	0.01	0.02
Sulfur, Other .....		144.99	29	14.12	0.46	0.19	28	14.13	0.45	0.16
Method Group 144.XX PCT			49	14.17	0.44	0.16	47	14.18	0.44	0.14
Arsenic, Atomic Absorption .....		151.00	1	4.50	0.14	0.20	1	4.50	0.14	0.20
Arsenic, ICP .....		151.30	7	5.86	4.98	0.34	6	4.28	3.18	0.11
Arsenic, Other .....		151.99	1	4.45	0.21	0.30	1	4.45	0.21	0.30
Method Group 151.XX PPM			9	5.56	4.40	0.32	8	4.33	2.72	0.14
Acid Soluble Boron, Spectrometric .....	982.01	165.00	1	0.030	0.000	0.000	1	0.030	0.000	0.000
Acid Soluble Boron, Other .....		165.99	8	0.057	0.029	0.004	8	0.057	0.029	0.004
Method Group 165.XX PCT			9	0.054	0.028	0.004	9	0.054	0.028	0.004
Water Soluble Boron, Other .....		171.99	1	0.118	0.001	0.001	1	0.118	0.001	0.001
Cadmium, Atomic Absorption .....		181.00	1	1.10	0.00	0.00	1	1.10	0.00	0.00
Cadmium, ICP .....		181.30	14	2.11	1.98	0.12	13	1.87	1.83	0.08
Method Group 181.XX PPM			15	2.04	1.93	0.11	14	1.81	1.78	0.07
Water Soluble Chlorine, Other .....		190.99	1	0.32	0.00	0.00	1	0.32	0.00	0.00

- 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
Chromium, Atomic Absorption .....		191.00	1	277.50	0.71	1.00	1	277.50	0.71	1.00
Chromium, ICP .....		191.30	16	221.02	61.83	13.88	15	217.57	62.01	11.43
Method Group 191.XX PPM			17	224.34	61.42	13.12	16	221.32	61.76	10.78
Acid Soluble Cobalt, AA .....		202.00	2	30.75	12.45	1.50	2	30.75	12.45	1.50
Acid Soluble Cobalt, ICP .....	965.11	202.30	14	24.59	10.98	2.75	13	24.27	11.25	2.18
Method Group 202.XX PPM			16	25.36	11.15	2.59	15	25.13	11.41	2.09
Acid Soluble Copper, Atomic Absorption	975.01	221.00	2	0.0497	0.0025	0.0032	2	0.0497	0.0025	0.0032
Acid Soluble Copper, ICP .....		221.30	24	0.0549	0.0044	0.0020	22	0.0549	0.0044	0.0013
Acid Soluble Copper, Other .....		221.99	1	0.0537	0.0001	0.0002	1	0.0537	0.0001	0.0002
Method Group 221.XX PCT			27	0.0545	0.0044	0.0020	25	0.0544	0.0044	0.0014
Acid Soluble Iron, Atomic Absorption ..	980.01	241.00	1	12.61	0.13	0.19	1	12.61	0.13	0.19
Acid Soluble Iron, ICP .....		241.30	16	12.78	0.48	0.31	16	12.78	0.48	0.31
Method Group 241.XX PCT			17	12.77	0.47	0.30	17	12.77	0.47	0.30
Lead, Atomic Absorption .....		251.00	2	260.75	26.00	11.50	2	260.75	26.00	11.50
Lead, ICP .....		251.30	15	248.62	45.26	11.75	14	246.92	46.12	9.80
Method Group 251.XX PPM			17	250.05	43.33	11.72	16	248.65	44.04	10.01
Acid Soluble Manganese, ICP .....	972.02a	261.30	15	0.207	0.014	0.007	14	0.207	0.013	0.005
Acid Soluble Manganese, ICP .....	972.02b	261.31	1	0.195	0.007	0.010	1	0.195	0.007	0.010
Method Group 261.XX PCT			16	0.206	0.014	0.007	15	0.206	0.013	0.006
Mercury, ICP .....		281.30	3	0.15	0.23	0.00	3	0.15	0.23	0.00
Mercury, Other .....		281.99	2	0.05	0.00	0.00	2	0.05	0.00	0.00
Method Group 281.XX PPM			5	0.11	0.18	0.00	4	0.03	0.03	0.00
Molybdenum, ICP .....		289.30	16	34.94	7.65	1.91	15	34.54	7.63	1.36
Nickel, Atomic Absorption .....		291.00	2	131.50	8.50	9.00	2	131.50	8.50	9.00
Nickel, ICP .....		291.30	14	121.85	22.61	8.77	15	117.36	27.71	8.21
Method Group 291.XX PPM			16	123.06	21.52	8.80	16	123.06	21.52	8.80
Selenium, ICP .....		301.30	5	6.88	9.06	0.38	4	4.96	9.18	0.05
Sodium, Other .....		311.99	6	0.06	0.01	0.00	6	0.06	0.01	0.00
Acid Soluble Zinc, Atomic Absorption ..	975.02	321.00	11	17.562	0.625	0.332	11	17.562	0.625	0.332
Acid Soluble Zinc, ICP .....		321.30	40	18.134	1.409	0.413	38	18.122	1.390	0.306
Acid Soluble Zinc, Other .....		321.99	2	17.203	3.642	0.375	2	17.203	3.642	0.375
Method Group 321.XX PCT			54	18.065	1.541	0.389	52	18.054	1.533	0.310

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 001.99 PCT Ammoniacal Nitrogen			Meth: 010.16 PCT Total Nitrogen			Meth: 010.60 PCT Total Nitrogen			Meth: 010.XX PCT Total Nitrogen			Meth: 010.XX PCT Total Nitrogen		
<u>Other</u>			<u>Raney</u>			<u>Combustion</u>			057 2.22 R 1.44			389 2.09 -.46		
096	0.73	.76	300	2.12	-.71	389	2.09	-.57	460	2.25	1.39	117	2.13	-.49
Avg	0.65					421	2.09	-.57	291	2.26	1.33	102	2.09	-.49
420	0.56	-.96	Meth: 010.60 PCT Total Nitrogen			102	2.09	-.60	095	2.24	1.15	009	2.09	-.50
Meth: 002.99 PCT Nitrate Nitrogen			<u>Combustion</u>			009	2.09	-.61	029	2.23	1.08	114	2.12	-.52
<u>Other</u>			390	2.57 s	4.43	233	2.11	-.66	055	2.23	1.07	185	2.12	-.52
220	0.02	.00	157	2.37	2.35	377	2.08	-.72	096	2.23	1.07	233	2.11	-.61
Meth: 009.10 PCT Ammon & Nitrate N			402	2.35	2.09	106	2.07	-.80	025	2.22	1.01	377	2.08	-.61
<u>Devarda</u>			073	2.32	1.83	393	2.07	-.82	131	2.22	.98	106	2.07	-.69
200	1.04	.71	043	2.25 R	1.45	325	2.06	-.88	041	2.22	.91	393	2.07	-.72
Meth: 010.11 PCT Total Nitrogen			057	2.22 R	1.32	136	2.06	-.90	023	2.17	.88	325	2.06	-.77
<u>Modified Comprehensi</u>			426	2.22 R	1.32	372	2.06	-.94	232	2.21	.85	136	2.06	-.80
220	2.31 s	3.32	291	2.26	1.16	428	2.03	-1.24	360	2.21	.85	372	2.06	-.84
460	2.25	2.22	095	2.24	.98	034	1.98	-1.73	037	2.17	.69	029	2.05	-.93
456	2.14	.19	029	2.23	.92	230	1.99 R	-2.09	330	2.15	.57	428	2.03	-1.16
Avg	2.12		096	2.23	.90	444	1.90	-2.54	292	2.18	.47	137	2.02	-1.20
211	2.12	-.17	055	2.23	.90	234	1.75 s	-4.10	371	2.14	.23	034	1.98	-1.66
416	2.11	-.24	025	2.22	.85	368	1.34 s	-8.45	354	2.15	.20	230	1.99 R	-2.07
090	2.11	-.29	131	2.22	.82	Meth: 010.99 PCT Total Nitrogen			086	2.14	.11	444	1.90	-2.50
105	2.12	-.29	023	2.17	.81	<u>Other</u>			296	2.14	.09	254	1.88	-2.76
114	2.12	-.76	041	2.22	.75	371	2.14	.97	456	2.14	.07	234	1.75 s	-4.11
029	2.05	-1.31	232	2.21	.69	420	2.13	.66	Avg	2.13		368	1.34 s	-8.62
Meth: 010.12 PCT Total Nitrogen			360	2.21	.69	Avg	2.09		027	2.12	-.12	Meth: 020.20 PCT Total Phosphate		
<u>Salicylic</u>			037	2.17	.61	255	2.09	-.25	420	2.13	-.18	<u>Spectrometric</u>		
455	2.89 S	7.00	330	2.15	.52	137	2.02	-1.43	211	2.12	-.18	420 0.11 .00		
117	2.13	.69	292	2.18	.33	Meth: 010.XX PCT Total Nitrogen			416	2.11	-.23	Meth: 020.40 PCT Total Phosphate		
185	2.12	.62	354	2.15	.06	455	2.89 s	8.12	397	2.12	-.24	<u>Automated</u>		
397	2.12	.50	Avg	2.14		390	2.57 s	4.72	451	2.12	-.24	035 0.08 .71		
Avg	2.06		296	2.14	-.04	157	2.37	2.57	105	2.12	-.24	Meth: 020.50 PCT Total Phosphate		
254	1.88	-1.55	086	2.14	-.08	402	2.35	2.31	351	2.11	-.24	<u>ICP</u>		
			027	2.12	-.25	220	2.31 R	2.11	090	2.11	-.25	389 0.87 1.28		
			451	2.12	-.34	073	2.32	2.03	300	2.12	-.32	Avg 0.34		
			351	2.11	-.34	043	2.25 R	1.60	324	2.11	-.33			
			177	2.13	-.39	426	2.22 R	1.44	450	2.10	-.34			
			324	2.11	-.43				042	2.10	-.34			
			042	2.10	-.46				177	2.13	-.37			
			450	2.10	-.46				255	2.09	-.45			
									421	2.09	-.46			

\* 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: 020.50 PCT Total Phosphate			Meth: 050.61 PCT Soluble Potash			Meth: 101.30 PCT Acid Soluble Calcium			Meth: 144.01 PCT Sulfur			Meth: 144.99 PCT Sulfur			
<u>ICP</u>			<u>Flame (Citrate)</u>			<u>ICP</u>			<u>Gravimetric</u>			<u>Other</u>			
421	0.13	-.51	035	0.12	.71	106	4.32	.56	041	14.59	.92	023	14.37	.53	
393	0.02	-.77				377	4.33	.51	043	14.61	.86	136	14.36	.50	
Meth: 020.XX PCT Total Phosphate			Meth: 050.99 PCT Soluble Potash			Avg 4.32			416 14.59 .82			377 14.31 .42			
389	0.87	1.88	232	0.19	1.21	389	4.30	-.18	254	14.45 R	.74	009	14.25	.29	
Avg	0.24		Other			421	4.27	-.56	324	14.35	.28	177	14.21	.18	
421	0.13	-.34	232	0.19	1.21	096	4.27	-.69	102	14.32	.21	330	14.15	.12	
420	0.11	-.40	Avg	0.12		086	4.24	-.94	095	14.25	.14	Avg	14.13		
035	0.08	-.49	421	0.12 R	-.19	035	4.32	-1.07	117	14.26	.11	351	14.11	-.05	
393	0.02	-.66	300	0.11	-.23	131	4.30	-1.36	Avg	14.24		389	14.05	-.21	
Meth: 041.50 PCT Dir Available Phosph			Meth: 050.XX PCT Soluble Potash			Meth: 121.30 PCT Acid Soluble Magnesi			029 14.23 -.07			037 14.00 -.28			
<u>ICP</u>			<u>Soluble Potash</u>			<u>ICP</u>			397 14.10 -.40			131 14.00 -.29			
325	0.00	.00	232	0.19	1.50	232	1.53 s	13.18	296	14.06	-.43	027	14.00	-.29	
354	0.00	.00	389	0.14	.67	041	1.05	2.54	372	14.03	-.49	090	14.00	-.52	
Avg	0.00		421	0.12 R	.36	389	0.99	1.26	073	14.03	-.50	117	13.86	-.62	
Meth: 048.20 PCT Water Soluble Phosph			300 0.11 .13			035 0.96 .57			200 13.71 -1.24			421 13.79 -.77			
<u>Spectrometric</u>			Avg 0.10			009 0.94 .43			444 13.69 -1.31			368 13.68 -.99			
420	0.03	.00	393 0.10 -.12	027 0.94 .31			Meth: 144.02 PCT Sulfur			106 13.53 -1.67			230 13.95 R -1.07		
Meth: 050.50 PCT Soluble Potash			325 0.07 -.58			102 0.93 .18			<u>Gravimetric</u>			096 13.65 -1.07			
<u>ICP (Oxalate)</u>			354 0.00 -1.84			Avg 0.93			292 13.89 .71			049 13.64 -1.09			
354	0.00	.00	Meth: 060.00 PCT Free Water			390 0.92 -.33			Meth: 144.99 PCT Sulfur			390 13.70 -1.15			
Meth: 050.51 PCT Soluble Potash			<u>Vacuum Oven</u>			421 0.92 -.34			Meth: 144.XX PCT Sulfur			255 13.20 -2.05			
<u>ICP (Citrate)</u>			416 1.38 .71			057 0.92 -.42			<u>Other</u>			450 13.17 -2.12			
389	0.14	.87	Meth: 101.30 PCT Acid Soluble Calcium			096 0.91 -.64			137 20.19 s 13.34			035 12.55 s -3.56			
Avg	0.12		<u>ICP</u>			131 0.90 -.64			300 15.88 s 3.87			Meth: 144.99 PCT Sulfur			
393	0.10	-.87	232 5.01 s 7.73			354 0.90 -.65			405 15.22 2.36			Meth: 144.99 PCT Sulfur			
Meth: 144.01 PCT Sulfur			057 4.57 s 3.73			106 0.88 -1.21			291 14.79 1.46			055 14.89 1.65			
<u>Gravimetric</u>			354 4.43 1.54			086 0.88 -1.31			220 14.74 1.38			291 14.79 1.39			
405 15.22 2.27			009 4.40 1.00			Meth: 144.01 PCT Sulfur			360 14.75 1.38			220 14.74 1.32			
055 14.89 1.55			027 4.38 .70			<u>Gravimetric</u>			086 14.64 1.26			360 14.75 1.31			
040 14.35 .72			390 4.38 .68			405 15.22 2.27			232 14.67 1.19			086 14.64 1.19			
						055 14.89 1.55			354 14.65 1.17			232 14.67 1.11			
									157 14.55 .98			354 14.65 1.09			
									040 14.35 .72			041 14.59 1.02			

\* 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	
<u>Meth: 144.XX PCT Sulfur</u>			<u>Meth: 144.XX PCT Sulfur</u>			<u>Meth: 151.XX PPM Arsenic</u>			<u>Meth: 181.00 PPM Cadmium</u>			<u>Meth: 181.XX PPM Cadmium</u>			
043	14.61	.97	106	13.53	-1.51	393	0.00 X	-1.59	136	1.10	.00	450	0.00	-1.02	
416	14.59	.93	255	13.20	-2.25	<u>Meth: 165.00 PCT Acid Soluble Boron Spectrometric</u>			<u>Meth: 181.30 PPM Cadmium ICP</u>			<u>Meth: 190.99 PCT Water Soluble Chloride Other</u>			
157	14.55	.91	450	13.17	-2.32	393	0.030	.71	405	6.00	2.25	009	0.32	.00	
254	14.45	.82	035	12.55 s	-3.81	<u>Meth: 165.99 PCT Acid Soluble Boron Other</u>			230	5.26 R	1.86	<u>Meth: 191.00 PPM Chromium Atomic Absorption</u>			
040	14.35	.67	<u>Meth: 151.00 PPM Arsenic Atomic Absorption</u>			200	0.105	1.68	255	2.34	.26	220	277.50	.71	
023	14.37	.43	136	4.50	.71	444	0.085	.98	106	2.00	.07	<u>Meth: 191.30 PPM Chromium ICP</u>			
324	14.35	.40	<u>Meth: 151.30 PPM Arsenic ICP</u>			354	0.084	.95	Avg	1.87		232	351.00	2.15	
136	14.36	.39	368	15.35 R	3.49	Avg	0.057		102	1.69	-.10	368	272.70 R	.98	
102	14.32	.33	255	9.88	1.76	232	0.044	-.44	086	1.50	-.21	009	266.50	.80	
377	14.31	.32	230	4.87	.19	106	0.040	-.59	035	1.42	-.25	102	263.78	.77	
095	14.25	.21	372	4.80	.17	421	0.040	-.60	393	0.84	-.56	450	257.00	.64	
117	14.26	.20	Avg	4.28		389	0.029	-.98	372	0.44	-.78	086	252.01	.57	
009	14.25	.19	009	4.15	-.04	086	0.029	-.99	009	0.25	-.88	247	236.50	.31	
029	14.23	.11	450	2.00	-.72	<u>Meth: 165.XX PCT Acid Soluble Boron</u>			<u>Meth: 181.XX PPM Cadmium</u>			035	219.00	.26	
177	14.21	.07	393	0.00 X	-1.35	200	0.105	1.80	405	6.00	2.36	393	233.37	.25	
Avg	14.18		<u>Meth: 151.99 PPM Arsenic Other</u>			444	0.085	1.09	230	5.26 R	1.95	106	226.50	.15	
330	14.15	-.14	220	4.45	.71	354	0.084	1.07	232	5.20	1.91	037	223.06	.11	
351	14.11	-.17	<u>Meth: 151.XX PPM Arsenic</u>			Avg	0.054		247	2.60	.44	Avg	217.57		
296	14.06	-.29	368	15.35 R	4.06	232	0.044	-.34	255	2.34	.30	230	199.50	-.32	
397	14.10	-.30	255	9.88	2.04	106	0.040	-.49	106	2.00	.11	444	148.95	-1.11	
389	14.05	-.32	230	4.87	.20	421	0.040	-.50	Avg	1.81		255	140.82	-1.24	
372	14.03	-.35	372	4.80	.18	393	0.030	-.85	102	1.69	-.08	027	135.23	-1.33	
073	14.03	-.36	136	4.50	.07	389	0.029	-.88	086	1.50	-.19	372	110.35	-1.73	
037	14.00	-.42	220	4.45	.07	086	0.029	-.89	035	1.42	-.23	<u>Meth: 191.XX PPM Chromium</u>			
131	14.00	-.42	<u>Meth: 171.99 PCT Water Soluble Boron Other</u>			Meth: 171.99 PCT Water Soluble Boron Other	027	0.118	.71	136	1.10	-.40	232	351.00	2.10
027	14.00	-.43	<u>Meth: 151.99 PPM Arsenic Other</u>			<u>Meth: 171.99 PCT Water Soluble Boron Other</u>			393	0.84	-.55	368	272.70 R	.93	
090	14.00	-.62	220	4.45	.07	<u>Meth: 171.99 PCT Water Soluble Boron Other</u>			372	0.44	-.77				
114	13.91	-.63	Avg	4.33		<u>Meth: 171.99 PCT Water Soluble Boron Other</u>			009	0.25	-.88				
292	13.89	-.67	009	4.15	-.07	<u>Meth: 171.99 PCT Water Soluble Boron Other</u>									
117	13.86	-.76	450	2.00	-.86	<u>Meth: 171.99 PCT Water Soluble Boron Other</u>									
421	13.79	-.91													
200	13.71	-1.08													
368	13.68	-1.15													
444	13.69	-1.15													
230	13.95 R	-1.16													
096	13.65	-1.23													
049	13.64	-1.25													
390	13.70 R	-1.30													

\* 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: 191.XX PPM <u>Chromium</u>			Meth: 202.30 PPM <u>Acid Soluble Cobalt</u>			Meth: 221.30 PCT <u>Acid Soluble Copper</u>			Meth: 221.XX PCT <u>Acid Soluble Copper</u>			Meth: 241.30 PCT <u>Acid Soluble Iron</u>		
220	277.50	.91	ICP			ICP			389	0.0595	1.17	ICP		
009	266.50	.74	247	18.75	-.49	102	0.0620	1.65	230	0.0556 R	1.15	086	13.00	.75
102	263.78	.71	230	17.50	-.60	027	0.0610	1.40	106	0.0550 R	1.15	102	13.02	.69
450	257.00	.58	372	9.59	-1.30	106	0.0550 R	1.14	324	0.0591	1.07	131	12.90	.49
086	252.01	.52	232	0.00	-2.16	230	0.0556 R	1.13	247	0.0584	.91	106	12.96	.45
247	236.50	.25				389	0.0595	1.06	086	0.0572	.73	041	12.89	.30
393	233.37	.20	Meth: 202.XX PPM <u>Acid Soluble Cobalt</u>			324	0.0591	.97	450	0.0565	.73	232	12.88	.24
106	226.50	.09	136	41.50	1.44	247	0.0584	.81	095	0.0571	.67	390	12.85	.18
037	223.06	.07	057	39.52	1.28	450	0.0565	.66	037	0.0573	.67	354	12.83	.11
Avg	221.32		086	36.89	1.05	086	0.0572	.64	041	0.0565	.59	Avg	12.78	
035	219.00	-.26	450	34.85	.86	095	0.0571	.58	354	0.0560	.36	009	12.55	-.58
230	199.50	-.38	102	28.73 R	.55	037	0.0573	.56	402	0.0555	.27	057	12.37	-1.16
444	148.95	-1.18	368	29.70	.54	041	0.0565	.51	255	0.0548	.12	389	12.12	-1.40
255	140.82	-1.30	009	31.00	.52	354	0.0560	.26	131	0.0545	.12	291	12.01	-1.63
027	135.23	-1.39	037	30.75	.49	402	0.0555	.18	Avg	0.0544		368	12.12	-1.64
372	110.35	-1.80	106	27.00	.24	Avg	0.0549		220	0.0537	-.16	444	10.13 s	-5.55
			Avg	25.13		255	0.0548	-.10	421	0.0535	-.24	393	9.43 s	-7.02
Meth: 202.00 PPM <u>Acid Soluble Cobalt</u>			035	20.90	-.37	131	0.0545	-.14	035	0.0530	-.39	Meth: 241.XX PCT <u>Acid Soluble Iron</u>		
AA			220	20.00	-.46	421	0.0535	-.33	057	0.0524	-.46	035	13.40	1.60
136	41.50	.86	393	19.03	-.53	035	0.0530	-.48	393	0.0516	-.64	377	13.36	1.27
Avg	30.75		247	18.75	-.56	057	0.0524	-.57	043	0.0510	-.81	027	13.27	1.06
220	20.00	-.87	230	17.50	-.67	393	0.0516	-.75	372	0.0500	-1.00	086	13.00	.78
			372	9.59	-1.36	372	0.0500	-1.11	428	0.0484	-1.47	102	13.02	.72
Meth: 202.30 PPM <u>Acid Soluble Cobalt</u>			232	0.00	-2.20	433	0.0480	-1.59	433	0.0480	-1.48	131	12.90	.51
ICP						368	0.0476	-1.67	368	0.0476	-1.57	106	12.96	.48
057	39.52	1.37	Meth: 221.00 PCT <u>Acid Soluble Copper</u>			009	0.0457	-2.11	009	0.0457	-2.00	041	12.89	.32
086	36.89	1.14	043	0.0510	.67	Meth: 221.99 PCT <u>Acid Soluble Copper</u>			Meth: 241.00 PCT <u>Acid Soluble Iron</u>			232	12.88	.26
450	34.85	.94	Avg	0.0497		<u>Other</u>			<u>Atomic Absorption</u>			390	12.85	.20
368	29.70	.61	428	0.0484	-1.02	220	0.0537	.71	220	12.61	-.71	354	12.83	.13
009	31.00	.60							Avg	12.77		Avg	12.77	
102	28.73 R	.60	Meth: 221.30 PCT <u>Acid Soluble Copper</u>			Meth: 221.XX PCT <u>Acid Soluble Copper</u>			Meth: 241.30 PCT <u>Acid Soluble Iron</u>			220	12.61	-.41
037	30.75	.58	ICP			405	0.3750 s	73.13	ICP			009	12.55	-.57
106	27.00	.30	405	0.3750 s	73.14	232	0.0985 s	10.06	035	13.40	1.54	057	12.37	-1.17
Avg	24.27		232	0.0985 s	9.97	102	0.0620	1.75	377	13.36	1.21	389	12.12	-1.41
035	20.90	-.30				027	0.0610	1.50	027	13.27	1.01	291	12.01	-1.65
393	19.03	-.47										368	12.12	-1.66

\* 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
<u>Meth: 241.XX PCT</u>			<u>Meth: 251.XX PPM</u>			<u>Meth: 261.XX PCT</u>			<u>Meth: 281.XX PPM</u>			<u>Meth: 291.30 PPM</u>		
<u>Acid Soluble Iron</u>			<u>Lead</u>			<u>Acid Soluble Manganese</u>			<u>Mercury</u>			<u>Nickel</u>		
444	10.13 s	-5.68	368	273.20	.60	232	0.306 s	7.47	009	0.05	.86	<u>ICP</u>		
393	9.43 s	-7.18	450	265.50	.50	354	0.224	1.33	Avg	0.03		450	141.00	.89
Meth: 251.00 PPM			009	266.50	.41	057	0.215	1.03	450	0.00	-.93	102	133.73	.62
<u>Lead</u>			393	258.80	.23	106	0.220	1.02	393	0.00 X	-.93	086	129.34	.60
<u>Atomic Absorption</u>			Avg	248.65		389	0.220	1.02	Meth: 289.30 PPM			247	134.00	.60
136	282.00	.82	405	242.00	-.15	027	0.220	.99	<u>Molybdenum</u>			009	132.00	.57
Avg	260.75		106	242.00	-.16	102	0.214	.89	<u>ICP</u>			444	128.45	.54
220	239.50	-.91	220	239.50	-.32	009	0.213	.49	232	51.35	2.20	368	126.50	.36
Meth: 251.30 PPM			037	232.70	-.37	131	0.208	.42	057	42.60	1.10	037	122.07	.17
<u>Lead</u>			255	206.41	-.98	390	0.208	.14	086	40.85 R	1.06	Avg	121.85	
<u>ICP</u>			444	161.65	-1.98	Avg	0.206		247	40.50	.78	035	109.00	-.30
035	301.50	1.18	372	148.50	-2.27	035	0.198	-.64	035	39.60	.66	393	108.77	-.31
027	293.89	1.02	Meth: 261.30 PCT			421	0.195	-.93	450	37.50	.39	106	109.50	-.39
102	286.21	.86	<u>Acid Soluble Manganese</u>			444	0.193	-1.04	230	35.95	.23	230	102.35	-.55
086	278.02	.72	<u>ICP</u>			086	0.203 R	-1.20	368	35.60	.22	027	66.71	-1.83
230	272.50 R	.70	232	0.306 s	7.39	247	0.190	-1.24	102	35.37	.21	372	54.54 s	-2.27
368	273.20	.61	354	0.224	1.27	393	0.183	-1.75	Avg	34.54		Meth: 291.XX PPM		
450	265.50	.51	057	0.215	.99	Meth: 281.30 PPM			220	34.00	-.07	<u>Nickel</u>		
009	266.50	.43	106	0.220	.95	<u>Mercury</u>			106	32.50	-.28	232	162.50	1.85
393	258.80	.26	389	0.220	.95	<u>ICP</u>			009	32.00	-.33	450	141.00	.90
Avg	246.92		027	0.220	.92	444	0.46	1.29	433	30.06	-.60	136	136.50	.63
405	242.00	-.11	102	0.214	.85	Avg	0.15		393	27.81	-.88	086	129.34	.62
106	242.00	-.12	009	0.213	.43	450	0.00	-.65	037	22.95	-1.52	102	133.73	.55
037	232.70	-.32	131	0.208	.41	393	0.00 X	-.65	372	20.38	-1.86	444	128.45	.54
255	206.41	-.90	390	0.208	.10	Avg	0.207		255	6.17 s	-3.72	247	134.00	.51
444	161.65	-1.85	Avg	0.198	-.70	Meth: 281.99 PPM			Meth: 291.00 PPM			009	132.00	.50
372	148.50	-2.13	041	0.198	-.73	<u>Mercury</u>			<u>Nickel</u>			220	126.50	.38
Meth: 251.XX PPM			444	0.193	-1.09	<u>Other</u>			<u>Atomic Absorption</u>			368	126.50	.24
<u>Lead</u>			086	0.203 R	-1.21	220	0.06	.78	136	136.50	.61	Avg	123.06	
035	301.50	1.20	247	0.190	-1.29	Avg	0.05		Avg	131.50		037	122.07	-.06
027	293.89	1.03	393	0.183	-1.81	009	0.05	-.94	220	126.50	-1.06	035	109.00	-.65
102	286.21	.86	Meth: 261.31 PCT			Meth: 281.XX PPM			Meth: 291.30 PPM			393	108.77	-.66
136	282.00	.76	<u>Acid Soluble Manganese</u>			<u>Mercury</u>			<u>Nickel</u>			106	109.50	-.72
086	278.02	.72	<u>ICP</u>			444	0.46 R	14.87	<u>ICP</u>			230	102.35	-.97
230	272.50 R	.70	421	0.195	.71	220	0.06	1.01	232	162.50	1.64	027	66.71	-2.62
												372	54.54 s	-3.18

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

## Laboratory Averages &amp; Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 301.30 PPM Selenium			Meth: 321.30 PCT Acid Soluble Zinc			Meth: 321.30 PCT Acid Soluble Zinc			Meth: 321.XX PCT Acid Soluble Zinc					
<u>ICP</u>			<u>ICP</u>			<u>ICP</u>			177 18.090 .04					
232	382.50 s	41.11	057	21.210	2.24	324	16.350	-1.28	Avg	18.054		106	17.995	-.05
037	19.84	1.62	102	20.378	1.64	041	15.915	-1.59	106	17.995		291	17.945	-.07
368	14.55 R	1.05	035	20.300	1.59	393	15.435	-1.93	291	17.945		360	17.945	-.08
Avg	4.96		090	20.155	1.47	402	14.455	-2.64	360	17.945		390	18.050	-.10
393	0.00 X	-.54	114	19.515 R	1.45	Meth: 321.99 PCT Acid Soluble Zinc			460	17.950	-.12	117	17.825	-.18
450	0.00	-.54	354	19.968	1.33	<u>Other</u>			368	17.716	-.22	055	18.015	-.23
372	0.00	-.54	292	19.860	1.25	042	20.345	.87	055	18.015		426	17.720	-.26
Meth: 311.99 PCT Sodium			377	19.670	1.11	Avg 17.203			420	17.680	-.29	330	17.650	-.31
<u>Other</u>			405	19.410	.93	137	14.060	-.86	330	17.650		247	17.500	-.36
232	0.09	1.53	450	19.070	.69	Meth: 321.XX PCT Acid Soluble Zinc			397	17.500	-.38	043	17.430	-.41
035	0.08	.87	300	18.735	.55	254	23.780 s	3.74	043	17.430		131	17.485	-.43
405	0.07	.36	027	18.560	.31	200	22.560	2.94	131	17.485		255	17.387	-.44
Avg	0.06		157	18.405	.27	057	21.210	2.08	255	17.387		371	17.390	-.44
009	0.06	-.59	433	18.440	.25	102	20.378	1.53	371	17.390		351	17.347	-.46
086	0.05	-.76	086	18.436	.23	042	20.345	1.51	351	17.347		095	17.428	-.50
102	0.05	-1.16	037	18.160	.16	035	20.300	1.49	095	17.428		040	17.315	-.55
Meth: 321.00 PCT Acid Soluble Zinc			232	18.145	.09	090	20.155	1.37	040	17.315		444	17.195	-.57
<u>Atomic Absorption</u>			421	18.130	.09	114	19.515 R	1.34	444	17.195		009	17.150	-.59
254	23.780 s	9.96	Avg	18.122		354	19.968	1.25	009	17.150		220	17.130	-.61
200	22.560 s	8.00	023	18.095	-.08	292	19.860	1.18	220	17.130		230	17.200 R	-.86
296	18.650	1.74	106	17.995	-.10	377	19.670	1.05	230	17.200 R		389	16.700	-.89
055	18.015	.92	390	18.050	-.12	405	19.410	.88	389	16.700		324	16.350	-1.11
177	18.090	.85	291	17.945	-.13	450	19.070	.67	324	16.350		234	16.365	-1.12
460	17.950	.67	360	17.945	-.13	300	18.735	.54	234	16.365		041	15.915	-1.40
Avg	17.562		117	17.825	-.24	296	18.650	.39	041	15.915		393	15.435	-1.71
043	17.430	-.22	368	17.716	-.29	027	18.560	.33	393	15.435		402	14.455	-2.35
371	17.390	-.30	426	17.720	-.33	157	18.405	.28	402	14.455		137	14.060	-2.60
397	17.500	-.34	420	17.680	-.37	433	18.440	.27	137	14.060		428	1.586 s	-10.74
351	17.347	-.35	330	17.650	-.38	086	18.436	.26						
220	17.130	-.75	247	17.500	-.45	037	18.160	.16						
040	17.315	-.77	131	17.485	-.51	232	18.145	.10						
234	16.365	-1.98	255	17.387	-.53	421	18.130	.09						
428	1.586 s	-25.57	095	17.428	-.59	023	18.095	.07						
			444	17.195	-.68									
			009	17.150	-.70									
			230	17.200 R	-.98									
			389	16.700	-1.03									

\* 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	2	0.00	1.06	0.44	251.XX	17	0.03	0.98	0.18
001.XX	2	0.00	1.06	0.44	261.30	16	0.441	2.057	0.435
010.11	9	0.34	1.34	0.58	261.XX	17	0.424	2.025	0.433
010.12	5	1.40	3.25	0.29	281.30	3	0.00	1.12	0.01
010.60	48	- 0.15	1.78	0.43	281.99	2	0.00	1.11	0.37
010.99	4	0.00	1.03	0.27	281.XX	5	2.97	6.72	0.08
010.XX	66	0.06	1.92	0.44	289.30	17	- 0.17	1.33	0.20
020.50	3	0.00	1.12	0.01	289.XX	17	- 0.17	1.33	0.20
020.XX	5	0.00	1.06	0.01	291.00	2	0.00	0.83	0.64
041.50	2	0.00	0.00	0.00	291.30	15	0.00	1.00	0.20
041.XX	2	0.00	0.00	0.00	291.XX	17	- 0.19	1.22	0.26
050.51	2	0.00	1.22	0.00	301.30	6	7.03	16.72	0.25
050.99	4	- 0.01	0.91	0.09	301.XX	6	7.03	16.72	0.25
050.XX	8	0.04	0.97	0.06	311.99	6	0.00	1.03	0.18
101.30	16	0.43	2.40	0.87	311.XX	6	0.00	1.03	0.18
101.XX	16	0.43	2.40	0.87	321.00	14	- 0.544	7.951	0.320
121.30	15	0.88	3.53	0.26	321.30	40	0.008	0.989	0.245
121.XX	15	0.88	3.53	0.26	321.99	2	0.000	1.220	0.073
144.01	19	0.03	0.98	0.21	321.XX	55	- 0.119	1.827	0.203
144.99	32	0.42	2.69	0.33					
144.XX	51	0.25	2.28	0.30					
151.30	7	0.50	1.63	0.10					
151.XX	9	0.45	1.66	0.11					
165.99	8	0.000	1.030	0.098					
165.XX	9	0.000	1.026	0.094					
181.30	14	0.13	1.10	0.06					
181.XX	15	0.13	1.10	0.06					
191.30	16	0.06	1.00	0.15					
191.XX	17	0.05	1.00	0.15					
202.00	2	0.00	1.22	0.06					
202.30	14	0.03	0.98	0.19					
202.XX	16	0.02	0.98	0.17					
221.00	2	0.0000	0.7594	0.6795					
221.30	26	3.2038	14.424	0.4271					
221.XX	29	2.8821	13.666	0.4161					
241.30	18	- 0.70	2.22	0.41					
241.XX	19	- 0.68	2.21	0.41					
251.00	2	0.00	1.16	0.29					
251.30	15	0.04	0.98	0.18					