

- Pass 1 Results for 84 Labs - - Pass 2 Results for 81 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	5	11.81	0.24	0.06	5	11.81	0.24	0.06
Ammoniacal Nitrogen, Other		001.99	9	11.79	0.41	0.05	9	11.79	0.41	0.05
Method Group 001.XX PCT			14	11.80	0.35	0.05	14	11.80	0.35	0.05
Nitrate Nitrogen, Other		002.99	2	0.01	0.01	0.00	2	0.01	0.01	0.00
Ammon & Nitrate N, Devarda	892.01	009.10	3	11.86	0.43	0.19	3	11.86	0.43	0.19
Ammon & Nitrate N, Other		009.99	1	12.07	0.01	0.01	1	12.07	0.01	0.01
Method Group 009.XX PCT			4	11.91	0.38	0.14	4	11.91	0.38	0.14
Total Nitrogen, Modified Comprehensive	978.02	010.11	7	12.08	0.11	0.06	7	12.08	0.11	0.06
Total Nitrogen, Salicylic	955.04D	010.12	3	12.06	0.24	0.04	3	12.06	0.24	0.04
Total Nitrogen, Combustion		010.60	58	12.02	0.19	0.09	55	12.03	0.17	0.08
Total Nitrogen, Other		010.99	6	12.10	0.08	0.03	6	12.10	0.08	0.03
Method Group 010.XX PCT			74	12.03	0.18	0.08	70	12.04	0.16	0.07
Total Phosphate, Grav Quimociac	962.02	020.10	8	40.51	0.55	0.17	8	40.51	0.55	0.17
Total Phosphate, Spectrometric	958.01	020.20	15	40.38	0.81	0.41	14	40.52	0.62	0.34
Total Phosphate, Automated	978.01	020.40	6	40.59	0.37	0.09	6	40.59	0.37	0.09
Total Phosphate, ICP		020.50	10	40.31	1.08	0.94	11	39.83	1.28	0.57
Total Phosphate, Other		020.99	3	40.43	0.33	0.09	3	40.43	0.33	0.09
Method Group 020.XX PCT			42	40.42	0.77	0.42	39	40.49	0.59	0.26
Insoluble Phosphate, Grav Quimociac	963.03C	030.10	1	0.17	0.01	0.01	1	0.17	0.01	0.01
Insoluble Phosphate, Spectrometric	963.03C	030.20	1	0.22	0.06	0.08	1	0.22	0.06	0.08
Insoluble Phosphate, Automated	978.01	030.40	1	0.20	0.07	0.10	1	0.20	0.07	0.10
Insoluble Phosphate, Other		030.99	2	0.19	0.08	0.04	2	0.19	0.08	0.04
Method Group 030.XX PCT			5	0.19	0.06	0.06	5	0.19	0.06	0.06
InDir Available Phosphate, Grav Quim	960.02	040.10	1	40.58	0.03	0.04	1	40.58	0.03	0.04
InDir Available Phosphate, Spectrometri	960.02	040.20	1	40.47	0.05	0.07	1	40.47	0.05	0.07
InDir Available Phosphate, Other		040.99	2	40.51	0.08	0.06	2	40.51	0.08	0.06
Method Group 040.XX PCT			4	40.52	0.07	0.06	4	40.52	0.07	0.06
Dir Available Phosphate, Grav Quimociac	960.03E	041.10	14	40.44	0.29	0.22	13	40.46	0.24	0.15
Dir Available Phosphate, Spectrometric	960.03D	041.20	3	39.99	0.17	0.20	3	39.99	0.17	0.20
Dir Available Phosphate, Automated	978.01	041.40	5	40.46	0.33	0.09	5	40.46	0.33	0.09
Dir Available Phosphate, ICP		041.50	7	40.10	0.39	0.29	7	40.10	0.39	0.29
Dir Available Phosphate, EDTA Extract	993.01	041.60	11	40.01	0.43	0.23	11	40.01	0.43	0.23
Dir Available Phosphate, Other		041.99	2	40.12	0.33	0.55	2	40.12	0.33	0.55
Method Group 041.XX PCT			44	40.19	0.45	0.25	42	40.19	0.44	0.21
Water Soluble Phosphate, Spectrometric	970.01	048.20	4	35.77	0.67	0.08	4	35.77	0.67	0.08
Water Soluble Phosphate, ICP		048.50	1	35.71	0.06	0.08	1	35.71	0.06	0.08
Method Group 048.XX PCT			5	35.76	0.59	0.08	5	35.76	0.59	0.08
Soluble Potash, STPB Oxalate	958.02	050.00	1	0.20	0.14	0.20	1	0.20	0.14	0.20
Soluble Potash, ICP (Oxalate)		050.50	1	0.00	0.00	0.00	1	0.00	0.00	0.00

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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
Soluble Potash, ICP (Citrate)		050.51	5	0.12	0.05	0.02	5	0.12	0.05	0.02
Soluble Potash, Flame (Citrate)	983.02(b)	050.61	1	0.71	0.01	0.01	1	0.71	0.01	0.01
Soluble Potash, Other		050.99	4	0.10	0.07	0.01	3	0.10	0.08	0.00
Method Group 050.XX PCT			12	0.16	0.18	0.03	10	0.10	0.07	0.02
Free Water, Vacuum Oven	965.08B	060.00	5	0.61	0.15	0.04	5	0.61	0.15	0.04
Method Group 060.XX PCT			5	0.61	0.15	0.04	5	0.61	0.15	0.04
Acid Soluble Calcium, ICP		101.30	14	0.23	0.02	0.01	14	0.23	0.02	0.01
Acid Soluble Magnesium, ICP		121.30	20	0.43	0.04	0.01	19	0.43	0.04	0.01
Sulfur, Gravimetric	980.02a	144.01	12	8.70	2.45	0.13	12	8.70	2.45	0.13
Sulfur, Gravimetric	980.02b	144.02	2	7.06	2.24	0.02	2	7.06	2.24	0.02
Sulfur, Gravimetric	980.02c	144.03	1	5.21	0.08	0.12	1	5.21	0.08	0.12
Sulfur, Other		144.99	31	9.01	2.46	0.20	30	8.98	2.49	0.14
Method Group 144.XX PCT			46	8.76	2.49	0.17	44	8.69	2.52	0.12
Arsenic, ICP		151.30	7	8.63	2.74	0.42	7	8.63	2.74	0.42
Acid Soluble Boron, Other		165.99	11	0.017	0.011	0.001	11	0.017	0.011	0.001
Cadmium, Atomic Absorption		181.00	1	4.61	0.08	0.11	1	4.61	0.08	0.11
Cadmium, ICP		181.30	11	3.55	0.54	0.20	10	3.62	0.51	0.14
Method Group 181.XX PPM			12	3.64	0.60	0.19	11	3.71	0.56	0.14
Water Soluble Chlorine, Other		190.99	1	9.14	0.13	0.18	1	9.14	0.13	0.18
Chromium, ICP		191.30	13	70.08	5.91	1.64	13	70.08	5.91	1.64
Acid Soluble Cobalt, ICP	965.11	202.30	8	3.46	0.48	0.20	8	3.46	0.48	0.20
Acid Soluble Cobalt, Other		202.99	1	5.08	0.10	0.14	1	5.08	0.10	0.14
Method Group 202.XX PPM			9	3.64	0.69	0.20	9	3.64	0.69	0.20
Acid Soluble Copper, Atomic Absorption	975.01	221.00	3	0.0025	0.0030	0.0001	3	0.0025	0.0030	0.0001
Acid Soluble Copper, ICP		221.30	9	0.0004	0.0005	0.0001	8	0.0003	0.0002	0.0000
Method Group 221.XX PCT			13	0.0013	0.0021	0.0001	12	0.0013	0.0022	0.0001
Acid Soluble Iron, Atomic Absorption	980.01	241.00	2	1.00	0.00	0.00	2	1.00	0.00	0.00
Acid Soluble Iron, ICP		241.30	15	0.99	0.05	0.02	14	0.99	0.04	0.01
Method Group 241.XX PCT			17	0.99	0.04	0.02	15	0.99	0.04	0.01
Lead, ICP		251.30	7	1.88	1.58	0.46	6	1.54	1.31	0.08
Acid Soluble Manganese, AA	972.02a	261.00	1	0.027	0.000	0.000	1	0.027	0.000	0.000
Acid Soluble Manganese, ICP	972.02a	261.30	18	0.027	0.002	0.001	16	0.027	0.002	0.001
Method Group 261.XX PCT			19	0.027	0.002	0.001	17	0.027	0.002	0.001
Mercury, ICP		281.30	2	0.18	0.21	0.01	2	0.18	0.21	0.01
Molybdenum, ICP		289.30	12	11.57	1.04	0.49	11	11.66	0.96	0.29
Nickel, ICP		291.30	9	15.07	0.96	0.47	8	15.13	0.94	0.29
Selenium, ICP		301.30	4	1.46	1.41	0.10	4	1.46	1.41	0.10
Sodium, Other		311.99	6	0.13	0.03	0.01	6	0.13	0.03	0.01
Acid Soluble Zinc, Atomic Absorption	975.02	321.00	12	0.958	0.049	0.022	11	0.954	0.047	0.016

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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
Acid Soluble Zinc, ICP		321.30	41	0.982	0.068	0.023	38	0.980	0.068	0.018
Acid Soluble Zinc, Other		321.99	1	1.040	0.000	0.000	1	1.040	0.000	0.000
Method Group 321.XX PCT			54	0.978	0.065	0.022	50	0.976	0.065	0.017
Water Soluble Zinc, ICP		325.30	4	0.766	0.283	0.045	4	0.766	0.283	0.045
Water Soluble Zinc, Other		325.99	1	1.011	0.036	0.051	1	1.011	0.036	0.051
Method Group 325.XX PCT			5	0.815	0.270	0.046	5	0.815	0.270	0.046

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	
Meth: 010.00 PCT															
Total Nitrogen															
049	12.18	.81	325	11.95	-.64	234	41.52	1.86	393	40.10	.21	096	40.65	.26	
106	12.15	.72	117	11.93	-.72	406	41.50	1.59	389	39.85	.04	292	40.58	.14	
419	12.15	.72	423	11.91	-.81	232	41.08	.92	Avg	40.30		405	40.58	.14	
073	12.16	.69	034	11.91	-.89	231	40.70	.44	432	39.69	-.25	Avg	40.49		
029	12.13	.64	185	11.88	-1.00	419	40.70	.34	368	39.47	-.28	444	40.39	-.19	
105	12.14	.61	444	11.89	-1.02	409	40.70	.29	255	39.80	-.57	371	40.38	-.30	
025	12.14	.57	041	11.93	-1.05	292	40.58	.09	390	37.80 S	-1.67	363	40.26	-.39	
402	12.14	.56	070	11.99 R	-1.09	Avg	40.52		444	37.59 S	-1.75	402	40.25	-.44	
114	12.13	.51	028	11.85	-1.18	371	40.38	-.32	137	40.19	-.51	137	40.19	-.51	
309	12.08	.50	389	11.85	-1.18	363	40.26	-.42	420	40.19	-.53	420	40.19	-.53	
300	12.12	.48	450	11.85	-1.22	420	40.19	-.55	Meth: 020.99 PCT			456	40.15	-.58	
037	12.10	.43	023	11.83	-1.30	416	40.15	-.60	Total Phosphate			416	40.15	-.58	
351	12.10	.38	009	11.83	-1.30	460	40.03	-.80	Other			453	40.45	-.61	
291	12.10	.35	406	11.81	-1.42	450	39.71	-1.45	455	40.85	1.27	042	40.10	-.66	
307	12.10	.35	234	11.81	-1.50	258	39.77	-1.60	Avg	40.43		393	40.10	-.67	
007	12.10	.35	157	11.79	-1.58	428	38.47 R	-3.51	137	40.19	-.72	117	40.05	-.75	
233	12.09	.34	428	11.75	-1.81	324	17.80 s	-36.86	443	26.41 S	-42.47	460	40.03	-.79	
057	12.06	.28	443	11.75	-1.81	Meth: 020.40 PCT									
371	12.08	.25	324	11.75	-1.81	Total Phosphate									
027	12.08	.22	426	11.77 R	-1.84	Automated									
247	12.08	.22	330	11.70	-2.18	035	41.02	1.19	330	41.90	2.54	258	39.77	-1.63	
096	12.07	.21	018	11.40 A	-3.92	247	40.82	.67	234	41.52	1.99	255	39.80 R	-1.70	
292	12.08	.20	260	11.05 s	-6.12	105	40.81	.60	406	41.50	1.71	368	39.47	-1.73	
393	12.06	.16	405	10.91 s	-6.94	096	40.65	.16	114	41.24	1.27	041	39.45	-1.79	
354	12.06	.12	Meth: 020.10 PCT										428	38.47 R	-3.62
Avg	12.04		Total Phosphate										307	40.36 R	-4.00
137	12.03	-.08	Grav Quimociac										390	37.80 s	-4.71
390	12.03	-.08	114	41.24	1.33	Avg	40.59		157	40.85	.74	444	37.59 s	-4.92	
211	12.02	-.17	157	40.85	.77	456	40.15	-1.21	423	40.85	.72	443	26.41 s	-23.90	
232	12.02	-.19	105	40.81	.56	042	40.10	-1.34	455	40.85	.61	324	17.80 s	-38.46	
136	12.03	-.24	090	40.75	.43	Meth: 020.50 PCT									
420	12.01	-.25	405	40.58	.11	Total Phosphate									
029	11.97	-.46	Avg	40.51		ICP									
131	11.99	-.49	444	40.39	-.25	307	40.36 R	1.88	105	40.81	.55	Meth: 030.10 PCT			
368	11.96	-.53	117	40.05	-.85	330	41.90	1.66	105	40.81	.54	Insoluble Phosphate			
102	12.02	-.55	041	39.45	-1.97	423	40.85	.82	231	40.70	.49	Grav Quimociac			
040	11.95	-.57	105	11.95	-.60	426	40.64	.64	090	40.75	.43	090	0.17	.71	
105	11.95	-.60				453	40.45	.56	419	40.70	.39				

* 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: 030.20 PCT											
Insoluble Phosphate											
<u>Spectrometric</u>											
409	0.22	.71									
Meth: 030.40 PCT											
Insoluble Phosphate											
<u>Automated</u>											
096	0.20	-.71									
Meth: 030.99 PCT											
Insoluble Phosphate											
<u>Other</u>											
247	0.26	.91									
Avg	0.19										
405	0.12	-.82									
Meth: 030.XX PCT											
<u>Insoluble Phosphate</u>											
247	0.26	1.20									
096	0.20	.84									
409	0.22	.81									
Avg	0.19										
090	0.17	-.46									
405	0.12	-1.21									
Meth: 040.10 PCT											
InDir Available Phos											
<u>Grav Quim</u>											
185	40.82	1.66									
136	40.79	1.34									
296	40.66	1.03									
131	40.65	.78									
009	40.55	.38									
040	40.51	.29									
Avg	40.46										
177	40.44	-.27									
029	40.33	-.62									
072	40.34	-.63									
049	40.41	-.66									
055	40.27	-.86									
211	40.20	-1.09									
254	40.07	-1.68									
260	40.10 R	-2.73									
105	40.01 s	-3.18									
102	38.84 s	-6.74									
Meth: 040.50 PCT											
InDir Available Phos											
<u>ICP</u>											
423	39.32 S	.00									
Meth: 040.99 PCT											
InDir Available Phosph											
<u>Other</u>											
230	40.15	1.06									
Avg	40.12										
105	40.10	-.62									
Meth: 041.50 PCT											
Dir Available Phosph											
<u>ICP</u>											
325	42.15 S	5.22									
377	40.60	1.38									
354	40.30	1.12									
291	40.50	1.02									
Avg	40.10										
043	39.84	-.65									
360	39.86	-.71									
007	39.83	-.72									
023	39.75	-.92									
009	37.93 S	-5.50									
393	37.87 S	-5.65									
Meth: 041.60 PCT											
Dir Available Phosph											
<u>EDTA Extract</u>											
018	41.55 S	3.72									
034	40.73	1.67									
105	40.19	.76									
231	40.25	.66									
Meth: 041.20 PCT											
Dir Available Phosph											
<u>Spectrometric</u>											
419	40.15	1.27									
Avg	39.99										
363	39.95	-.48									
055	39.89	-.81									
Meth: 041.40 PCT											
Dir Available Phosph											
<u>Automated</u>											
027	40.84	1.19									
029	40.68	.67									
131	40.56	.32									
Avg	40.46										
025	40.17	-.87									
072	40.03	-1.33									
Meth: 041.60 PCT											
Dir Available Phosph											
<u>EDTA Extract</u>											
233	40.14	.54									
397	40.13	.31									
177	40.11	-.24									
296	40.11	.23									
Avg	40.01										
043	39.97	-.19									
037	39.93	-.31									
106	39.33	-1.61									
073	39.22	-1.87									
351	36.18 s	-8.90									
Meth: 041.99 PCT											
Dir Available Phosph											
<u>Other</u>											
230	40.15	1.06									
Avg	40.12										
105	40.10	-.62									
Meth: 041.XX PCT											
Dir Available Phosph											
<u>Other</u>											
055	39.89	-.72									
230	40.15	-.80									
043	39.84	-.80									
360	39.86	-.83									
007	39.83	-.85									
023	39.75	-1.04									
260	40.10 R	-1.25									
105	40.01 R	-1.45									
106	39.33	-1.98									
073	39.22	-2.24									
102	38.84	-3.06									
009	37.93 s	-5.12									
393	37.87 s	-5.25									
351	36.18 s	-9.12									
Meth: 048.20 PCT											
Water Soluble Phosph											
<u>Spectrometric</u>											
420	36.85	1.61									

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Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth:	048.20	PCT	Meth:	050.51	PCT	Meth:	060.00	PCT	Meth:	101.30	PCT
Water Soluble Phosph			Soluble Potash			Free Water			Acid Soluble Calcium		
Spectrometric			ICP (Citrate)			Vacuum Oven			ICP		
Avg	35.77		377	0.04	-1.74	096	0.77	1.18	247	0.22	-0.43
405	35.53	-0.36				363	0.77	1.04	423	0.22	-0.75
363	35.35	-0.62	Meth:	050.60	PCT	Avg	0.61		405	0.21	-0.96
096	35.34	-0.64	Soluble Potash			247	0.58	-0.17	354	0.19	-2.12
			Flame (Oxalate)			007	0.46	-0.99			
Meth:	048.50	PCT	309	37.32	S	416	0.45	-1.01			
Water Soluble Phosph									Meth:	121.30	PCT
ICP			Meth:	050.61	PCT	Meth:	060.99	PCT	Acid Soluble Magnesi		
393	35.71	.71	Soluble Potash			Free Water			ICP		
			Flame (Citrate)			Other			041	0.55	2.96
Meth:	048.00	PCT	018	0.71	.71	443	1.86	S	049	0.49	R
Water Soluble Phosph									354	0.48	1.23
ICP			Meth:	050.99	PCT	Meth:	060.00	PCT	453	0.47	.88
420	36.85	1.84	Soluble Potash			Free Water			307	0.46	.76
Avg	35.76		Other			443	1.86	s	423	0.46	.59
393	35.71	-0.10				096	0.77	1.18	363	0.44	.20
405	35.53	-0.38	Meth:	050.99	PCT	096	0.77	1.18	102	0.43	.07
363	35.35	-0.68	Soluble Potash			363	0.77	1.04	Avg	0.43	
096	35.34	-0.70	Other			443	1.86	s	419	0.43	-0.03
						325	0.18	1.00	405	0.43	-0.05
Meth:	050.00	PCT	307	0.11	R	307	0.11	R	096	0.43	-0.22
Soluble Potash			232	0.12	.21	Avg	0.61		009	0.42	-0.27
STPB Oxalate			Avg	0.10		247	0.58	-0.17	057	0.42	-0.35
009	0.20	-0.71	137	0.00	-1.21	007	0.46	-0.99	073	0.42	-0.39
						416	0.45	-1.01	232	0.41	-0.47
Meth:	050.00	PCT	Meth:	050.00	PCT	Meth:	101.30	PCT	131	0.41	-0.63
Soluble Potash			Soluble Potash			Acid Soluble Calcium			389	0.41	-0.69
STPB Oxalate			ICP			ICP			420	0.40	-0.90
009	0.20	-0.71	309	37.32	s	309	37.32	s	247	0.38	-1.31
			018	0.71	A	041	1.06	s	027	0.37	-1.56
Meth:	050.50	PCT	009	0.20	R	453	0.27	2.03			
Soluble Potash			325	0.18	1.18	049	0.25	1.25	Meth:	144.01	PCT
ICP (Oxalate)			453	0.17	.96	420	0.24	.90	Sulfur		
354	0.00	.00	009	0.15	.84	307	0.24	.54	Other		
			393	0.14	.58	096	0.24	.45	137	13.67	1.88
Meth:	050.51	PCT	389	0.13	.43	057	0.23	.25	049	11.72	1.10
Soluble Potash			307	0.11	.35	Avg	0.23		291	11.20	.89
ICP (Citrate)			232	0.12	.21	131	0.23		157	11.15	.87
453	0.17	.83	Avg	0.10		131	0.23		117	11.03	.82
009	0.15	.81	377	0.04	-1.03	131	0.23	-0.14	102	10.97	.80
393	0.14	.33	377	0.04	-1.03	232	0.22	-0.26	307	10.67	.69
389	0.13	.14	354	0.00	-1.54	102	0.22	-0.27	351	10.64	.66
Avg	0.12		137	0.00	-1.54	009	0.22	-0.34	177	10.54	.62
									409	10.48	.60
									037	10.46	.59
									419	10.35	.55

* 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: 144.99 PCT																
Sulfur																
Other			037	10.46	.70	Meth: 144.99 PCT										
368	9.70 R	.48	233	10.45	.70	Arsenic										
360	10.16	.48	009	12.45	1.41	ICP										
389	10.15	.47	450	10.00	.50	Meth: 151.30 PPM										
363	10.14	.46	405	9.50	.36	ICP										
040	10.07	.44	247	8.94	.11	Meth: 181.30 PPM										
423	10.05	.43	Avg	8.63		Cadmium										
023	9.91	.37	232	3.39	-.47	ICP										
255	9.47	.21	405	3.00	-1.23	Meth: 191.30 PPM										
Avg	8.98		450	2.98	-1.28	Chromium										
232	8.52	-.20	233	2.92	-1.39	ICP										
009	8.46	-.23	444	2.88 R	-1.63	Meth: 202.30 PPM										
453	7.38	-.65	Meth: 181.30 PPM													
354	6.44	-1.02	Cadmium													
330	5.60	-1.36	363	4.61	1.59	Acid Soluble Cobalt										
027	5.26	-1.49	419	4.25	.96	ICP										
247	5.20	-1.52	393	4.08	.66	Meth: 190.99 PCT										
393	5.10	-1.56	247	3.95	.62	Water Soluble Chlori										
450	5.01	-1.60	009	4.05	.61	Other										
300	4.93	-1.63	368	3.92	.44	Meth: 191.30 PPM										
390	4.78	-1.69	Avg	3.71		Chromium										
Meth: 144.99 PCT																
Sulfur																
137	13.67	1.98	423	4.61	-.71	Meth: 181.30 PPM										
049	11.72	1.20	363	4.61	-.71	Cadmium										
291	11.20	.99	Atomic Absorption													
157	11.15	.98	423	9.14	.71	Meth: 191.30 PPM										
117	11.03	.93	Meth: 191.30 PPM													
102	10.97	.91	Chromium													
307	10.67 R	.79	ICP													
351	10.64	.77	419	92.50 s	4.52	Meth: 202.30 PPM										
029	10.61	.76	393	79.79	1.64	Acid Soluble Cobalt										
296	10.54	.73	009	77.95	1.40	Other										
177	10.54	.73	450	77.00	1.18	Meth: 202.99 PPM										
055	10.50	.72	Meth: 202.99 PPM													
409	10.48	.71	Acid Soluble Cobalt													
043	10.47	.71	368	18.51 s	3.60	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
Meth: 202.XX PPM											
<u>Acid Soluble Cobalt</u>											
247	3.65	.22									
Avg	3.64										
102	3.54	-.14									
450	3.15	-.70									
232	2.92	-1.03									
419	2.70	-1.36									
368	0.00 s	-5.24									
Meth: 221.00 PCT											
<u>Acid Soluble Copper</u>											
393	0.0005	-.34									
043	0.0005	-.38									
402	0.0004	-.40									
450	0.0004	-.40									
419	0.0004	-.42									
433	0.0002	-.50									
232	0.0002	-.51									
057	0.0001	-.54									
041	0.0000	-.59									
Meth: 241.00 PCT											
<u>Atomic Absorption</u>											
428	0.0065	1.29									
Avg	0.0025										
460	0.0007	-.61									
043	0.0005	-.68									
Meth: 221.30 PCT											
<u>Acid Soluble Copper</u>											
ICP											
255	0.0055 s	29.78									
354	0.0015 R	7.56									
393	0.0005	1.53									
402	0.0004	.74									
450	0.0004	.74									
419	0.0004	.54									
Avg	0.0003										
433	0.0002	-.45									
232	0.0002	-.61									
057	0.0001	-.92									
041	0.0000	-1.53									
Meth: 221.XX PCT											
<u>Acid Soluble Copper</u>											
428	0.0065	2.39									
255	0.0055	1.95									
354	0.0015 R	.25									
Avg	0.0013										
460	0.0007	-.28									
Meth: 221.XX PCT											
<u>Acid Soluble Iron</u>											
ICP											
354	1.14 s	3.42									
049	1.08 s	2.67									
453	1.05 R	1.61									
096	1.04	1.26									
102	1.03	1.10									
307	1.03	1.10									
106	1.03	.90									
041	1.01	.72									
131	1.00	.34									
Avg	0.99										
419	0.99	-.03									
405	0.99	-.11									
423	0.98	-.22									
247	0.97	-.35									
009	0.97	-.38									
057	0.96	-.74									
444	0.93	-1.30									
027	0.88	-2.52									
Meth: 251.30 PPM											
<u>Lead</u>											
ICP											
419	3.95 R	2.11									
393	3.87	1.78									
450	2.00	.35									
232	1.88	.27									
Avg	1.54										
405	1.00	-.41									
102	0.33	-.92									
368	0.15	-1.06									
Meth: 261.00 PCT											
<u>Acid Soluble Copper</u>											
423	0.98	-.22									
247	0.97	-.35									
009	0.97	-.38									
057	0.96	-.70									
444	0.93	-1.23									
027	0.88	-2.39									
Meth: 261.30 PCT											
<u>Acid Soluble Manganese</u>											
ICP											
041	0.030	1.71									
106	0.030	1.71									
354	0.030	1.71									
009	0.028	.77									
453	0.028	.40									
043	0.027	.12									
102	0.027	.08									
Avg	0.027										
073	0.027	-.01									
423	0.027	-.25									
131	0.027	-.25									
049	0.027	-.37									
057	0.026	-.57									
419	0.026	-.77									
444	0.026	-.82									
Meth: 261.XX PCT											
<u>Acid Soluble Manganese</u>											
232	0.025	-1.07									
389	0.025	-1.29									
307	0.026 R	-1.33									
096	0.024	-1.51									
247	0.025 R	-1.76									
Meth: 281.30 PPM											
<u>Mercury</u>											
ICP											
393	0.37	.87									
Avg	0.18										
450	0.00	-.87									
Meth: 289.30 PPM											
<u>Molybdenum</u>											
ICP											
232	12.65	1.04									
037	12.56	.95									
057	12.00	.63									
049	12.23	.62									
419	12.00	.35									
450	12.00	.35									
368	11.90	.32									
393	11.76	.11									
Avg	11.66										
102	11.47	-.21									
433	10.14	-1.60									
255	10.53 R	-1.83									
247	9.60	-2.18									
009	6.10 s	-5.82									
Meth: 291.30 PPM											
<u>Nickel</u>											
ICP											
444	25.77 s	11.33									
393	16.55	1.51									
450	16.00	.92									
247	15.50	.66									

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Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 291.30 PPM											
Nickel											
ICP			Meth: 321.00 PCT			Meth: 321.30 PCT			Meth: 321.99 PCT		
037	15.65	.56	Acid Soluble Zinc			Acid Soluble Zinc			Acid Soluble Zinc		
Avg	15.13		Atomic Absorption			ICP			ICP		
049	14.93	-.27	177	0.966	.26	360	0.967	-.20	360	0.967	-.20
102	14.38	-.80	Avg	0.954		231	0.970	-.21	231	0.970	-.21
232	14.55 R	-1.18	351	0.950	-.09	423	0.965	-.24	423	0.965	-.24
419	14.00	-1.20	296	0.938	-.36	450	0.965	-.43	450	0.965	-.43
368	14.05	-1.21	040	0.936	-.40	255	0.951	-.45	255	0.951	-.45
009	11.05 s	-4.41	371	0.933	-.45	363	0.940	-.60	363	0.940	-.60
Meth: 301.30 PPM											
Selenium											
ICP			043	0.910	-.94	131	0.938	-.63	131	0.938	-.63
368	3.30	1.31	055	0.870	-1.81	023	0.937	-.64	023	0.937	-.64
232	2.10	.46	234	0.245 s	-14.93	291	0.935	-.67	291	0.935	-.67
Avg	1.46		Meth: 321.30 PCT								
393	0.44	-.72	ICP			Acid Soluble Zinc			Acid Soluble Zinc		
450	0.00	-1.03	049	1.207 S	3.32	444	0.913	-1.01	444	0.913	-1.01
Meth: 311.99 PCT											
Sodium											
Other			368	1.071 s	3.03	419	0.912	-1.01	419	0.912	-1.01
057	0.18	1.71	354	1.130	2.20	041	0.910	-1.03	041	0.910	-1.03
307	0.15	.65	057	1.106	1.84	433	0.908	-1.07	433	0.908	-1.07
009	0.13	.09	330	1.100	1.75	420	0.876	-1.53	420	0.876	-1.53
Avg	0.13		102	1.070 R	1.42	390	0.855	-1.83	390	0.855	-1.83
102	0.12	-.34	106	1.065	1.24	027	0.855	-1.83	027	0.855	-1.83
232	0.10	-.80	233	1.058	1.21	Meth: 321.99 PCT					
423	0.09	-1.18	073	1.045	.97	Acid Soluble Zinc					
Meth: 321.00 PCT											
Acid Soluble Zinc											
Atomic Absorption			432	1.045	.95	Other					
460	1.050	2.03	307	1.040	.86	137	1.040	.00	137	1.040	.00
258	1.005 R	1.44	009	1.035	.83	432	0.190 S	.00	432	0.190 S	.00
029	1.003	1.14	405	1.035	.80	Avg	1.040		Avg	1.040	
397	0.970	.53	090	1.025	.69	Meth: 321.22 PCT					
028	0.966	.28	300	1.025	.66	Acid Soluble Zinc					
Meth: 321.99 PCT											
Water Soluble Zinc											
ICP			426	0.998 R	.60	Other					
393	1.029	.93	453	1.011	.58	137	1.040	.00	137	1.040	.00
117	1.020	.92	292	1.010	.43	432	0.190 S	.00	432	0.190 S	.00
Avg	0.766		389	1.000	.37	Meth: 321.99 PCT					
409	0.575	-.68	037	0.996	.33	Water Soluble Zinc					
027	0.440	-1.15	409	0.990	.27	ICP					
Meth: 325.30 PCT											
Water Soluble Zinc											
ICP			247	0.993	.26	Other					
393	1.029	.93	247	0.993	.26	231	0.970	-.18	231	0.970	-.18
117	1.020	.92	Avg	0.976		423	0.965	-.18	423	0.965	-.18
Avg	0.766		324	0.975	-.08	397	0.970	-.30	397	0.970	-.30
409	0.575	-.68	360	0.967	-.15	351	0.950	-.40	351	0.950	-.40
027	0.440	-1.15	177	0.966	-.15	255	0.951	-.41	255	0.951	-.41
Meth: 325.99 PCT											
Water Soluble Zinc											
ICP			028	0.966	-.15	Meth: 321.22 PCT					
393	1.029	.93	231	0.970	-.18	Acid Soluble Zinc					
117	1.020	.92	423	0.965	-.18	Other					
Avg	0.766		397	0.970	-.30	137	1.040	.00	137	1.040	.00
409	0.575	-.68	351	0.950	-.40	432	0.190 S	.00	432	0.190 S	.00
027	0.440	-1.15	255	0.951	-.41	Meth: 321.22 PCT					
Meth: 325.30 PCT											
Water Soluble Zinc											
ICP			450	0.965	-.42	Acid Soluble Zinc					
393	1.029	.79	363	0.940	-.56	Other					
117	1.020	.79	296	0.938	-.59	131	0.938	-.61	131	0.938	-.61
453	1.011	.73	131	0.938	-.59	023	0.937	-.62	023	0.937	-.62
Avg	0.815		023	0.937	-.61	040	0.936	-.62	040	0.936	-.62
409	0.575	-.89	040	0.936	-.62	291	0.935	-.63	291	0.935	-.63
027	0.440	-1.39	291	0.935	-.63	371	0.933	-.67	371	0.933	-.67
Meth: 325.99 PCT											
Water Soluble Zinc											
ICP			117	0.961 R	-.77	Meth: 321.99 PCT					
393	1.029	.79	426	0.998 R	.66	Acid Soluble Zinc					
117	1.020	.92	453	1.011	.66	ICP					
Avg	0.766		029	1.003	.55	Atomic Absorption					
409	0.575	-.68	292	1.010	.53	177					
027	0.440	-1.15	389	1.000	.37	0.966					
Meth: 325.30 PCT											
Water Soluble Zinc											
ICP			037	0.996	.33	177					
393	1.029	.93	409	0.990	.27	0.967					
117	1.020	.92	247	0.993	.26	0.961 R					
Avg	0.766		247	0.993	.26	0.961 R					
409	0.575	-.68	Avg	0.976		0.961 R					
027	0.440	-1.15	324	0.975	-.08	0.961 R					
Meth: 325.99 PCT											
Water Soluble Zinc											
ICP			360	0.967	-.15	0.961 R					
393	1.029	.93	177	0.966	-.15	0.961 R					
117	1.020	.92	028	0.966	-.15	0.961 R					
Avg	0.766		231	0.970	-.18	0.961 R					
409	0.575	-.68	423	0.965	-.18	0.961 R					
027	0.440	-1.15	397	0.970	-.30	0.961 R					
Meth: 325.30 PCT											
Water Soluble Zinc											
ICP			351	0.950	-.40	0.961 R					
393	1.029	.79	255	0.951	-.41	0.961 R					
117	1.020	.92	450	0.965	-.42	0.961 R					
Avg	0.766		363	0.940	-.56	0.961 R					
409	0.575	-.68	296	0.938	-.59	0.961 R					
027	0.440	-1.15	131	0.938	-.59	0.961 R					
Meth: 325.99 PCT											
Water Soluble Zinc											
ICP			023	0.937	-.61	0.961 R					
393	1.029	.79	040	0.936	-.62	0.961 R					
117	1.020	.92	291	0.935	-.63	0.961 R					
Avg	0.766		371	0.933	-.67	0.961 R					
409	0.575	-.68	117	0.961 R	-.79	0.961 R					
027	0.440	-1.39	117	0.961 R	-.79	0.961 R					

* 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	6	- 5.61	13.77	0.15	121.XX	20	0.07	1.03	0.15
001.99	9	0.00	1.03	0.09	144.01	12	0.00	1.02	0.03
001.XX	15	- 1.53	6.02	0.11	144.02	2	0.00	1.22	0.01
002.99	2	0.00	1.22	0.05	144.99	31	0.01	0.99	0.08
002.XX	2	0.00	1.22	0.05	144.XX	45	0.06	0.98	0.07
009.10	3	0.00	1.06	0.28	151.30	8	0.45	1.59	0.10
009.XX	4	0.00	1.03	0.28	151.XX	8	0.45	1.59	0.10
010.11	7	0.00	0.98	0.33	165.99	11	0.000	1.023	0.048
010.12	3	0.00	1.11	0.09	165.XX	11	0.000	1.023	0.048
010.60	62	- 0.02	1.99	0.46	181.30	11	- 0.13	1.05	0.29
010.99	6	0.00	1.02	0.21	181.XX	12	- 0.12	1.05	0.25
010.XX	75	- 0.06	1.95	0.45	191.30	14	0.27	1.40	0.68
020.10	8	0.00	1.01	0.22	191.XX	14	0.27	1.40	0.68
020.20	16	- 2.51	9.24	0.49	202.30	9	- 0.80	2.56	0.27
020.40	6	0.00	1.04	0.15	202.XX	10	- 0.52	1.91	0.18
020.50	12	0.03	0.94	0.60	221.00	3	0.0000	1.1179	0.0134
020.99	4	- 10.60	21.22	1.26	221.30	10	3.6755	9.4673	0.9749
020.XX	44	- 1.70	6.81	0.86	221.XX	13	0.0082	0.9790	0.0699
030.99	2	0.00	1.14	0.31	241.00	2	0.00	0.75	0.69
030.XX	5	0.00	0.86	0.55	241.30	17	0.41	1.33	0.46
040.99	2	0.00	0.95	0.55	241.XX	19	0.41	1.32	0.46
040.XX	5	- 3.48	7.83	1.35	251.30	7	0.26	1.18	0.39
041.10	16	- 0.64	1.92	0.92	251.XX	7	0.26	1.18	0.39
041.20	3	0.00	0.81	0.63	261.30	18	- 0.091	0.965	0.477
041.40	5	0.00	1.04	0.19	261.XX	19	- 0.089	0.967	0.480
041.50	10	- 0.59	3.18	0.40	281.30	2	0.00	1.22	0.02
041.60	13	- 0.41	2.86	0.49	281.XX	2	0.00	1.22	0.02
041.99	2	0.00	0.12	0.86	289.30	13	- 0.54	1.86	0.43
041.XX	39	- 0.29	2.13	0.67	289.XX	13	- 0.54	1.86	0.43
048.20	4	0.00	1.08	0.06	291.30	11	0.58	3.88	0.48
048.XX	5	0.00	1.06	0.06	291.XX	11	0.58	3.88	0.48
050.51	5	0.00	0.99	0.34	301.30	4	0.00	1.08	0.05
050.99	4	0.03	0.91	0.14	301.XX	4	0.00	1.08	0.05
050.XX	12	47.64	162.03	0.38	311.99	6	0.00	1.04	0.12
060.00	5	0.00	1.03	0.21	311.XX	6	0.00	1.04	0.12
060.XX	6	1.36	3.46	0.55	321.00	13	- 1.065	4.274	0.352
101.30	15	2.94	11.42	1.93	321.30	43	0.137	1.091	0.479
101.XX	15	2.94	11.42	1.93	321.99	2	0.000	0.000	0.000
121.30	20	0.07	1.03	0.15	321.XX	57	- 0.189	1.974	0.981

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
325.30	4	0.000	1.072	0.112					
325.XX	4	- 0.181	1.122	0.117					