

MAGRUDER - Fertilizer Check Sample No. - 200305

- Pass 1 Results for 87 Labs - - Pass 2 Results for 87 Labs -

Method	AOAC Ref.	Method Code	No. of Labs	Grand Avq.	Std. Dev.	Average Range of Dups	No. of Labs	Grand Avq.	Std. Dev.	Average Range of Dups
Ammoniacal Nitrogen, MgO Distillation .	920.03	001.10	9	4.20	0.18	0.07	9	4.20	0.18	0.07
Ammoniacal Nitrogen, Other		001.99	10	4.26	0.24	0.06	9	4.24	0.24	0.04
Method Group 001.XX PCT			20	4.26	0.24	0.06	19	4.25	0.24	0.05
Nitrate Nitrogen, Other		002.99	2	2.02	2.30	0.22	2	2.02	2.30	0.22
Nitrogen From Urea, Urease (as N)	959.03	005.00	1	3.66	0.04	0.05	1	3.66	0.04	0.05
Percent Urea, Other		007.99	1	3.86	0.04	0.06	1	3.86	0.04	0.06
Ammon & Nitrate N, Devarda	892.01	009.10	3	4.73	0.05	0.02	3	4.73	0.05	0.02
Ammon & Nitrate N, Other		009.99	1	4.11	0.12	0.17	1	4.11	0.12	0.17
Method Group 009.XX PCT			4	4.57	0.29	0.06	4	4.57	0.29	0.06
Total Nitrogen, Reduced Iron		010.10	1	8.26	0.03	0.04	1	8.26	0.03	0.04
Total Nitrogen, Modified Comprehensive	978.02	010.11	9	8.29	0.15	0.08	9	8.29	0.15	0.08
Total Nitrogen, Salicylic	955.04D	010.12	5	8.24	0.12	0.10	5	8.24	0.12	0.10
Total Nitrogen, Raney	970.03	010.16	1	8.25	0.00	0.00	1	8.25	0.00	0.00
Total Nitrogen, Combustion		010.60	50	8.31	0.14	0.07	49	8.31	0.14	0.07
Total Nitrogen, Other		010.99	6	8.24	0.12	0.03	6	8.24	0.12	0.03
Method Group 010.XX PCT			72	8.30	0.14	0.07	67	8.29	0.14	0.06
Total Phosphate, Grav Quimociac	962.02	020.10	8	10.26	0.20	0.04	7	10.29	0.19	0.02
Total Phosphate, Spectrometric	958.01	020.20	19	10.31	0.23	0.10	19	10.31	0.23	0.10
Total Phosphate, Automated	978.01	020.40	8	10.14	0.27	0.11	7	10.15	0.28	0.06
Total Phosphate, ICP		020.50	2	10.14	0.03	0.04	2	10.14	0.03	0.04
Total Phosphate, Other		020.99	1	10.85	0.01	0.02	1	10.85	0.01	0.02
Method Group 020.XX PCT			38	10.27	0.25	0.08	36	10.28	0.25	0.07
Insoluble Phosphate, Grav Quimociac ...	963.03C	030.10	2	0.08	0.02	0.00	2	0.08	0.02	0.00
Insoluble Phosphate, Spectrometric	963.03C	030.20	2	0.17	0.10	0.02	2	0.17	0.10	0.02
Insoluble Phosphate, Automated	978.01	030.40	3	0.21	0.16	0.02	3	0.21	0.16	0.02
Method Group 030.XX PCT			7	0.16	0.13	0.02	7	0.16	0.13	0.02
InDir Available Phosphate, Spectrometri	960.02	040.20	3	10.07	0.06	0.10	3	10.07	0.06	0.10
InDir Available Phosphate, Automated ..	960.02	040.40	1	10.12	0.02	0.03	1	10.12	0.02	0.03
InDir Available Phosphate, Other		040.99	2	9.86	0.26	0.02	2	9.86	0.26	0.02
Method Group 040.XX PCT			6	10.01	0.18	0.06	6	10.01	0.18	0.06
Dir Available Phosphate, Grav Quimociac	960.03E	041.10	20	10.17	0.18	0.07	19	10.17	0.18	0.06
Dir Available Phosphate, Spectrometric	960.03D	041.20	5	10.19	0.26	0.18	5	10.19	0.26	0.18
Dir Available Phosphate, Alka Quim	960.03C	041.30	1	9.80	0.26	0.37	1	9.80	0.26	0.37
Dir Available Phosphate, Automated	978.01	041.40	6	10.38	0.32	0.07	5	10.45	0.30	0.04
Dir Available Phosphate, ICP		041.50	6	10.28	0.24	0.11	6	10.28	0.24	0.11
Dir Available Phosphate, EDTA Extract .	993.01	041.60	12	10.21	0.21	0.17	12	10.21	0.21	0.17
Method Group 041.XX PCT			52	10.21	0.27	0.11	51	10.21	0.27	0.11
Water Soluble Phosphate, Spectrometric	970.01	048.20	3	7.55	0.91	0.07	3	7.55	0.91	0.07
Water Soluble Phosphate, Other		048.99	1	19.59	0.08	0.12	1	19.59	0.08	0.12

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Method Group 048.XX PCT			4	10.56	5.63	0.08	4	10.56	5.63	0.08
Soluble Potash, STPB Oxalate	958.02	050.00	23	10.57	0.23	0.09	22	10.57	0.23	0.07
Soluble Potash, STPB Citrate	969.04	050.10	1	10.78	0.17	0.24	1	10.78	0.17	0.24
Soluble Potash, AA (Oxalate)		050.30	12	10.53	0.27	0.15	12	10.53	0.27	0.15
Soluble Potash, ICP (Oxalate)		050.50	6	10.52	0.17	0.15	6	10.52	0.17	0.15
Soluble Potash, ICP (Citrate)		050.51	6	10.63	0.20	0.10	6	10.63	0.20	0.10
Soluble Potash, Flame (Oxalate)	983.02(a)	050.60	7	10.53	0.19	0.10	7	10.53	0.19	0.10
Soluble Potash, Flame (Citrate)	983.02(b)	050.61	9	10.67	0.23	0.14	9	10.67	0.23	0.14
Soluble Potash, Other		050.99	12	10.52	0.25	0.15	11	10.52	0.25	0.12
Method Group 050.XX PCT			76	10.57	0.23	0.12	72	10.57	0.23	0.10
Free Water, Vacuum Oven	965.08B	060.00	7	1.66	0.15	0.05	7	1.66	0.15	0.05
Acid Soluble Calcium, ICP		101.30	9	8.23	0.29	0.19	9	8.23	0.29	0.19
Method Group 101.XX PCT			9	8.23	0.29	0.19	9	8.23	0.29	0.19
Acid Soluble Magnesium, AA	984.01	121.00	20	3.59	0.17	0.05	19	3.59	0.17	0.04
Acid Soluble Magnesium, ICP		121.30	22	3.71	0.14	0.05	21	3.71	0.15	0.05
Acid Soluble Magnesium, Titrimetric ...	964.01	121.70	1	4.22	0.00	0.00	1	4.22	0.00	0.00
Acid Soluble Magnesium, Other		121.99	2	3.91	0.27	0.08	2	3.91	0.27	0.08
Method Group 121.XX PCT			45	3.68	0.19	0.05	44	3.68	0.20	0.05
Water Soluble Magnesium, AA		131.00	2	1.73	0.14	0.11	2	1.73	0.14	0.11
Water Soluble Magnesium, ICP		131.30	1	1.64	0.04	0.06	1	1.64	0.04	0.06
Water Soluble Magnesium, Titrimetric ..		131.70	1	2.19	0.00	0.00	1	2.19	0.00	0.00
Water Soluble Magnesium, Other		131.99	2	1.82	0.25	0.00	2	1.82	0.25	0.00
Method Group 131.XX PCT			6	1.82	0.24	0.05	5	1.82	0.26	0.02
Sulfur, Gravimetric	980.02a	144.01	9	6.62	0.56	0.04	9	6.62	0.56	0.04
Sulfur, Gravimetric	980.02b	144.02	1	7.57	0.08	0.11	1	7.57	0.08	0.11
Sulfur, Turbidimetric	63.845	144.50	1	5.94	0.04	0.05	1	5.94	0.04	0.05
Sulfur, Other		144.99	29	6.75	0.67	0.12	27	6.73	0.68	0.09
Method Group 144.XX PCT			40	6.72	0.65	0.10	36	6.72	0.67	0.06
Arsenic, Atomic Absorption		151.00	2	7.72	0.78	0.05	2	7.72	0.78	0.05
Arsenic, ICP		151.30	5	7.91	1.68	0.20	5	7.91	1.68	0.20
Arsenic, Other		151.99	3	9.40	1.33	0.80	3	9.40	1.33	0.80
Method Group 151.XX PPM			10	8.32	1.56	0.35	9	8.32	1.62	0.21
Acid Soluble Boron, Other		165.99	1	24.600	3.960	5.600	1	24.600	3.960	5.600
Cadmium, Atomic Absorption		181.00	4	0.86	0.36	0.28	3	0.97	0.10	0.03
Cadmium, ICP		181.30	7	1.16	0.36	0.11	6	1.12	0.37	0.07
Cadmium, Other		181.99	4	1.08	0.17	0.02	3	0.99	0.01	0.00
Method Group 181.XX PPM			15	1.06	0.34	0.13	14	1.10	0.28	0.07
Water Soluble Chlorine, Other		190.99	2	3.17	0.12	0.03	2	3.17	0.12	0.03
Chromium, Atomic Absorption		191.00	1	91.00	7.07	10.00	1	91.00	7.07	10.00

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Chromium, ICP		191.30	10	63.56	17.75	2.72	10	63.56	17.75	2.72
Chromium, Other		191.99	2	77.50	9.54	4.00	2	77.50	9.54	4.00
Method Group 191.XX PPM			13	67.81	18.03	3.47	13	67.81	18.03	3.47
Acid Soluble Cobalt, ICP	965.11	202.30	10	13.12	3.50	0.40	9	12.87	3.60	0.29
Acid Soluble Cobalt, Other		202.99	2	16.00	2.58	2.00	2	16.00	2.58	2.00
Method Group 202.XX PPM			12	13.60	3.49	0.66	12	13.60	3.49	0.66
Acid Soluble Copper, Atomic Absorption	975.01	221.00	13	0.0320	0.0118	0.0053	13	0.0320	0.0118	0.0053
Acid Soluble Copper, ICP		221.30	16	0.0300	0.0101	0.0031	15	0.0290	0.0094	0.0019
Acid Soluble Copper, Other		221.99	1	0.0201	0.0025	0.0035	1	0.0201	0.0025	0.0035
Method Group 221.XX PCT			30	0.0305	0.0109	0.0040	29	0.0301	0.0106	0.0035
Acid Soluble Iron, Atomic Absorption ..	980.01	241.00	17	3.94	0.19	0.06	16	3.96	0.16	0.05
Acid Soluble Iron, ICP		241.30	23	3.50	0.89	0.11	23	3.50	0.89	0.11
Acid Soluble Iron, Other		241.99	2	3.83	0.37	0.05	2	3.83	0.37	0.05
Method Group 241.XX PCT			44	3.65	0.72	0.11	42	3.72	0.63	0.09
Lead, Atomic Absorption		251.00	2	14.35	6.26	1.70	2	14.35	6.26	1.70
Lead, ICP		251.30	12	18.89	7.08	1.23	12	18.89	7.08	1.23
Lead, Other		251.99	3	19.60	2.10	1.44	3	19.60	2.10	1.44
Method Group 251.XX PPM			17	18.48	6.45	1.33	17	18.48	6.45	1.33
Acid Soluble Manganese, AA	972.02a	261.00	20	1.783	0.095	0.027	18	1.784	0.098	0.019
Acid Soluble Manganese, AA	972.02b	261.11	2	1.691	0.076	0.050	2	1.691	0.076	0.050
Acid Soluble Manganese, ICP	972.02a	261.30	19	1.801	0.105	0.040	19	1.801	0.105	0.040
Acid Soluble Manganese, ICP	972.02b	261.31	1	1.731	0.001	0.002	1	1.731	0.001	0.002
Acid Soluble Manganese, Other		261.99	1	1.995	0.035	0.050	1	1.995	0.035	0.050
Method Group 261.XX PCT			43	1.791	0.104	0.034	43	1.791	0.104	0.034
Mercury, Atomic Absorption		281.00	2	0.11	0.12	0.01	2	0.11	0.12	0.01
Mercury, Other		281.99	1	0.02	0.00	0.00	1	0.02	0.00	0.00
Method Group 281.XX PPM			3	0.08	0.11	0.01	3	0.08	0.11	0.01
Molybdenum, ICP		289.30	8	6.29	1.40	0.28	8	6.29	1.40	0.28
Molybdenum, Other		289.99	3	8.30	0.76	1.27	3	8.30	0.76	1.27
Method Group 289.XX PPM			11	6.84	1.54	0.55	10	6.72	1.54	0.41
Nickel, Atomic Absorption		291.00	1	36.00	0.00	0.00	1	36.00	0.00	0.00
Nickel, ICP		291.30	8	33.13	8.99	1.27	7	32.27	9.27	0.78
Nickel, Other		291.99	3	37.15	3.78	3.37	3	37.15	3.78	3.37
Method Group 291.XX PPM			12	34.37	7.69	1.69	12	34.37	7.69	1.69
Selenium, ICP		301.30	1	4.90	0.14	0.20	1	4.90	0.14	0.20
Selenium, Other		301.99	3	0.17	0.07	0.01	3	0.17	0.07	0.01
Method Group 301.XX PPM			4	1.35	2.19	0.06	3	0.17	0.07	0.01
Sodium, Atomic Absorption	983.04	311.00	1	0.36	0.01	0.01	1	0.36	0.01	0.01
Sodium, Flame Photometric	974.01	311.30	1	0.36	0.02	0.02	1	0.36	0.02	0.02

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Sodium, Other		311.99	5	0.38	0.02	0.02	5	0.38	0.02	0.02
Method Group 311.XX PCT			7	0.38	0.02	0.02	7	0.38	0.02	0.02
Acid Soluble Zinc, Atomic Absorption ..	975.02	321.00	19	0.062	0.007	0.003	18	0.063	0.007	0.002
Acid Soluble Zinc, ICP		321.30	16	0.062	0.006	0.003	15	0.061	0.005	0.002
Acid Soluble Zinc, Other		321.99	4	0.065	0.009	0.002	4	0.065	0.009	0.002
Method Group 321.XX PCT			39	0.062	0.007	0.003	37	0.062	0.007	0.002
Water Soluble Zinc, ICP		325.30	1	0.061	0.000	0.001	1	0.061	0.000	0.001

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Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 001.10 PCT			Meth: 001.XX PCT			Meth: 009.10 PCT			Meth: 010.12 PCT			Meth: 010.60 PCT		
<u>Ammoniacal Nitrogen</u>			<u>Ammoniacal Nitrogen</u>			<u>Ammon & Nitrate N</u>			<u>Total Nitrogen</u>			<u>Total Nitrogen</u>		
<u>MgO Distillation</u>			220 4.40 .59			<u>Devarda</u>			<u>Salicylic</u>			<u>Combustion</u>		
254	4.80 s	3.38	040	4.35	.45	Avg	4.73		351	8.40	1.29	049	8.36	.38
220	4.40	1.09	292	4.30	.20	391	4.67	-1.17	102	8.28	.43	220	8.35	.38
040	4.35	.88	Avg	4.25					Avg	8.24		070	8.36	.37
292	4.30	.55	105	4.23	-.12	Meth: 009.99 PCT			137	8.21	-.26	035	8.34	.35
288	4.25	.35	029	4.22	-.15	<u>Ammon & Nitrate N</u>			185	8.15	-.80	361	8.36	.34
251	4.22	.11	251	4.22	-.16	<u>Other</u>			254	8.15	-1.39	409	8.32	.32
029	4.22	.08	288	4.25	-.16	105	4.11	-.71	415	7.80 S	-3.56	142	8.36	.30
Avg	4.20		096	4.15	-.41	Meth: 009.XX PCT			Meth: 010.16 PCT			023	8.32	.26
309	4.15	-.41	309	4.15	-.46	<u>Ammon & Nitrate N</u>			<u>Total Nitrogen</u>			029	8.32	.21
324	4.16	-.46	324	4.16	-.47	392	4.78	.70	<u>Raney</u>			028	8.33	.18
415	3.78	-2.39	409	4.14	-.48	258	4.74	.57	419	8.25	.00	234	8.32	.15
Meth: 001.99 PCT			230	3.89	-1.50	391	4.67	.32	Meth: 010.60 PCT			131	8.32	.09
<u>Ammoniacal Nitrogen</u>			289	3.87	-1.56	Avg	4.57		<u>Total Nitrogen</u>			Avg	8.31	
<u>Other</u>			415	3.78	-1.93	105	4.11	-1.61	<u>Combustion</u>			330	8.30	-.09
376	5.79 s	6.35	Meth: 002.99 PCT			Meth: 010.10 PCT			073	8.81 s	3.50	251	8.30	-.11
418	4.52	1.15	<u>Nitrate Nitrogen</u>			<u>Total Nitrogen</u>			072	8.55	1.68	296	8.29	-.19
363	4.49	1.07	<u>Other</u>			<u>Reduced Iron</u>			095	8.56	1.68	009	8.25	-.46
247	4.47	.95	220	4.00	.87	072	8.26	.71	037	8.52	1.66	106	8.24	-.51
320	4.42 R	.88	Avg	2.02		Meth: 010.11 PCT			007	8.47	1.37	377	8.23	-.54
397	4.40	.68	247	0.04	-.86	<u>Total Nitrogen</u>			390	8.49	1.30	376	8.23	-.56
Avg	4.24		Meth: 005.00 PCT			<u>Modified Comprehensi</u>			007	8.47	1.37	157	8.27	-.83
105	4.23	-.08	<u>Nitrogen From Urea</u>			322 8.59 1.95			037	8.47	1.37	360	8.20	-.93
096	4.15	-.36	<u>Urease (as N)</u>			288 8.36 .91			041	8.43	1.08	040	8.16	-1.26
409	4.14	-.43	351	3.66	-.71	211 8.38 .56			043	8.40 R	1.04	027	8.13	-1.33
230	3.89	-1.45	Meth: 007.99 PCT			090 8.32 .28			372	8.46	.99	292	8.13	-1.36
289	3.87	-1.51	<u>Percent Urea</u>			Avg 8.29			025	8.44	.88	232	8.11	-1.45
Meth: 001.XX PCT			<u>Other</u>			029 8.27 -.19			262	8.43	.83	233	8.09	-1.51
<u>Ammoniacal Nitrogen</u>			419	3.86	-.71	363 8.23 -.46			389	8.43	.82	324	8.08	-1.65
376	5.79 s	6.32	Meth: 009.10 PCT			105 8.27 -.52			275	8.43	.80	096	8.05	-1.87
254	4.80	2.25	<u>Ammon & Nitrate N</u>			414 8.12 X -1.19			024	8.42	.75	325	8.02	-1.99
418	4.52	1.11	<u>Devarda</u>			309 8.10 -1.25			136	8.41	.69	034	7.97	-2.40
363	4.49	1.02	392	4.78	1.03	Meth: 010.12 PCT			055	8.39	.56	Meth: 010.99 PCT		
247	4.47	.90	258	4.74	.25	<u>Total Nitrogen</u>			022	8.35	.55	<u>Total Nitrogen</u>		
320	4.42 R	.85	Meth: 009.10 PCT			<u>Other</u>			231	8.38	.45	<u>Other</u>		
397	4.40	.63	<u>Ammon & Nitrate N</u>			392 4.78 1.03			247	8.37	.40	405 8.47 1.94		
* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits			397 8.26 .28		

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Laboratory Averages & Accuracy Indexes

<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>
Meth: 010.99 PCT			Meth: 010.XX PCT			Meth: 010.XX PCT			Meth: 020.20 PCT			Meth: 020.XX PCT		
<u>Total Nitrogen</u>			<u>Total Nitrogen</u>			<u>Total Nitrogen</u>			<u>Total Phosphate</u>			<u>Total Phosphate</u>		
<u>Other</u>									<u>Spectrometric</u>					
177	8.25	.08	142	8.36	.46	309	8.10	-1.41	363	10.31	-.40	330	11.03 s	3.58
Avg	8.24		035	8.34	.46	233	8.09	-1.45	220	10.17	-.64	391	10.85	2.29
105	8.16	-.68	018	8.32	.44	254	8.15 R	-1.52	288	10.18	-.88	230	10.85	2.28
300	8.15	-.77	409	8.32	.41	324	8.08	-1.60	324	10.11	-.93	095	10.66	1.52
230	8.15	-.77	023	8.32	.35	096	8.05	-1.83	418	10.08	-1.09	362	10.61	1.31
			028	8.33	.31	325	8.02	-1.96	397	10.01	-1.40	142	10.61	1.30
			090	8.32	.30	034	7.97	-2.39	234	10.00	-1.45	420	10.55	1.09
			029	8.32	.30	415	7.80 s	-3.65				096	10.53	1.00
Meth: 010.XX PCT						Meth: 020.10 PCT			Meth: 020.40 PCT					
<u>Total Nitrogen</u>						<u>Total Phosphate</u>			<u>Total Phosphate</u>					
073	8.81 s	3.85	234	8.32	.25	<u>Grav Quimociac</u>			<u>Automated</u>					
322	8.59	2.17	131	8.32	.22	095	10.66	1.94	096	10.53	1.37	232	10.44	.64
095	8.56	1.93	251	8.30	.09	090	10.42	.65	193	10.48	1.17	090	10.42	.54
072	8.55	1.93	330	8.30	.06	105	10.33	.21	247	10.19	.13	258	10.36	.40
037	8.52 R	1.89	Avg	8.29		Avg	10.29		Avg	10.15		363	10.31	.38
007	8.47 R	1.58	296	8.29	-.06	300	10.25	-.26	376	10.13	-.08	231	10.35	.35
390	8.49	1.53	029	8.27	-.23	114	10.18	-.64	320	10.08	-.53	105	10.33	.21
405	8.47	1.32	102	8.28	-.23	157	10.16	-.72	035	9.93	-.78	390	10.33	.21
041	8.43	1.26	397	8.26	-.27	137	10.08	-1.13	105	10.08 R	-.89	309	10.30	.08
372	8.46	1.20	072	8.26	-.28	313	10.05 R	-1.39	409	9.73	-1.53	Avg	10.28	
043	8.40 R	1.19	419	8.25	-.31							300	10.25	-.14
025	8.44	1.08	177	8.25	-.31							392	10.26	-.22
262	8.43	1.02	009	8.25	-.34							292	10.23	-.22
389	8.43	1.02	106	8.24	-.39							372	10.23	-.23
288	8.36 R	1.01	377	8.23	-.42	Meth: 020.20 PCT			Meth: 020.50 PCT					
275	8.43	.99	376	8.23	-.46	<u>Total Phosphate</u>			<u>Total Phosphate</u>					
024	8.42	.94	363	8.23	-.53	<u>Spectrometric</u>			<u>ICP</u>					
136	8.41	.88	105	8.27	-.59	391	10.85	2.38	330	11.03 S	34.44	157	10.16	-.48
351	8.40	.77	137	8.21	-.64	362	10.61	1.29	361	10.16	.72	361	10.16	-.50
055	8.39	.73	157	8.27	-.84	142	10.61	1.29	Avg	10.14		376	10.13	-.60
022	8.35	.67	360	8.20	-.86	420	10.55	1.06	389	10.13	-.99	389	10.13	-.63
231	8.38	.62	105	8.16	-.95	232	10.44	.56	354	8.65 S	-51.01	288	10.18 R	-.72
211	8.38	.62	230	8.15	-1.05	258	10.36	.34				324	10.11	-.72
247	8.37	.58	300	8.15	-1.05	231	10.35	.27	Meth: 020.99 PCT					
177	8.37	.56	185	8.15	-1.11	390	10.33	.12	<u>Total Phosphate</u>					
070	8.36	.54	040	8.16	-1.22	Avg	10.31		<u>Other</u>					
049	8.36	.53	027	8.13	-1.27	309	10.30	-.06	230	10.85	.71	313	10.05	-1.00
220	8.35	.52	292	8.13	-1.29	392	10.26	-.32				397	10.01	-1.15
361	8.36	.50	414	8.12 X	-1.34	292	10.23	-.39				234	10.00	-1.19
			232	8.11	-1.39	372	10.23	-.39				105	10.08 R	-1.25
* X=Excluded from lab performance S/s=Screened Outlier R=Duplicate Range too large A=Analysis beyond 3-s limits														

MAGRUDER - Fertilizer Check Sample No. - 200305

Laboratory Averages & Accuracy Indexes

<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>
Meth: 020.XX PCT			Meth: 040.20 PCT			Meth: 041.10 PCT			Meth: 041.40 PCT			Meth: 041.XX PCT		
<u>Total Phosphate</u>			InDir Available Phos			Dir Available Phosph			Dir Available Phosph			<u>Dir Available Phosph</u>		
035 9.93 -1.38			<u>Spectrometri</u>			<u>Grav Quimociac</u>			<u>Automated</u>			251 11.16 s 3.52		
409 9.73 -2.20			220 10.09 .46			131 10.26 .52			029 10.33 -.42			095 10.94 2.68		
354 8.65 s -6.57			Avg 10.07			040 10.25 .47			025 10.22 -.78			034 10.90 2.54		
Meth: 030.10 PCT			289 10.06 -.99			296 10.18 .17			027 10.15 -1.01			072 10.68 1.73		
Insoluble Phosphate			363 10.06 -1.15			Avg 10.17			105 10.03 R -1.43			007 10.63 1.58		
<u>Grav Quimociac</u>						009 10.12 -.32						028 10.54 1.28		
090 0.09 .87			Meth: 040.40 PCT			211 10.12 -.37			Meth: 041.50 PCT			362 10.50 1.06		
Avg 0.08			InDir Available Phos			177 10.09 -.50			Dir Available Phosph			018 10.35 R 1.06		
320 0.06 -.87			<u>Automated</u>			233 10.08 -.54			<u>ICP</u>			105 10.46 .90		
Meth: 030.20 PCT			096 10.12 .71			049 10.08 -.56			251 11.16 S 3.62			022 10.35 .75		
Insoluble Phosphate						102 10.07 -.57			007 10.63 1.47			393 10.40 .70		
<u>Spectrometric</u>			Meth: 040.99 PCT			414 10.17 R -.68			393 10.40 .48			055 10.39 .65		
363 0.25 .88			InDir Available Phos			072 10.06 -.71			360 10.31 .48			322 10.37 .59		
Avg 0.17			<u>Other</u>			028 10.05 -.72			023 10.35 .40			023 10.35 .56		
220 0.08 -.85			247 10.09 .87			136 9.64 -2.93			Avg 10.28			037 10.36 .55		
			Avg 9.86			254 9.55 s -3.41			361 10.10 -.78			360 10.31 .55		
			409 9.63 -.87						325 9.93 -1.45			022 10.30 .49		
						Meth: 041.20 PCT			354 8.30 s -8.15			041 10.31 .44		
						Dir Available Phosph						296 10.32 .44		
						<u>Spectrometric</u>						397 10.26 .44		
						362 10.50 1.18			Meth: 041.60 PCT			029 10.33 .42		
						022 10.35 .84			Dir Available Phosph			185 10.25 .34		
						055 10.23 .35			<u>EDTA Extract</u>			055 10.23 .30		
						Avg 10.19			095 10.94 s 3.48			029 10.28 .23		
						415 9.92 -1.02			028 10.54 1.67			131 10.26 .23		
						419 9.94 -1.11			018 10.35 1.38			040 10.25 .20		
									037 10.36 .73			025 10.22 .06		
									296 10.32 .59			Avg 10.21		
									397 10.26 .58			106 10.20 -.12		
									Avg 10.21			296 10.18 -.16		
									106 10.20 -.15			043 10.16 -.24		
									043 10.16 -.30			027 10.15 -.25		
									177 10.15 -.42			177 10.15 -.34		
									073 10.15 -.51			009 10.12 -.36		
									288 10.11 -.54			211 10.12 -.38		
									<u>Automated</u>			073 10.15 -.40		
									034 10.90 1.46			288 10.11 -.43		
									072 10.68 .75			288 10.11 -.43		
									Avg 10.45			361 10.10 -.44		
									262 9.35 s -4.11					

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

MAGRUDER - Fertilizer Check Sample No. - 200305

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 041.XX PCT			Meth: 048.XX PCT			Meth: 050.30 PCT			Meth: 050.60 PCT			Meth: 050.99 PCT		
<u>Dir Available Phosph</u>			<u>Water Soluble Phosph</u>			Soluble Potash			Soluble Potash			Soluble Potash		
177	10.09	-.48	363	6.89	-.65	<u>AA (Oxalate)</u>			<u>Flame (Oxalate)</u>			<u>Other</u>		
414	10.17 X	-.49	Meth: 050.00 PCT			095	10.88	1.38	114	10.74	1.09	027	10.32	-.78
233	10.08	-.50	Soluble Potash			040	10.86	1.25	390	10.67	.74	275	10.27 X	-1.07
049	10.08	-.52	<u>STPB Oxalate</u>			262	10.80	1.09	288	10.65	.73	289	10.12	-1.63
102	10.07	-.53	095	11.52 s	4.01	363	10.71	.74	105	10.60	.46	072	9.88 S	-2.61
072	10.06	-.62	391	10.85	1.19	234	10.55	.50	Avg 10.53			Meth: 050.XX PCT		
028	10.05	-.63	055	10.83	1.08	397	10.55	.36	055	10.52	-.26	<u>Soluble Potash</u>		
351	10.12	-.64	258	10.78	.88	Avg 10.53			415	10.27	-1.35	095	11.52 s	4.10
105	10.03	-.79	102	10.77	.85	193	10.50	-.39	309	10.25	-1.46	322	11.38 s	3.50
325	9.93	-1.05	043	10.76	.78	137	10.42	-.43	Meth: 050.61 PCT			330	11.34 s	3.37
415	9.92	-1.09	231	10.76	.77	351	10.42	-.45	Soluble Potash			041	11.14	2.49
419	9.94	-1.17	131	10.75	.73	247	10.40	-.54	<u>Flame (Citrate)</u>			023	10.98	1.83
377	9.79	-1.58	090	10.69	.51	142	10.27	-1.00	041	11.14	2.09	405	10.97	1.78
260	9.80	-1.69	029	10.69	.47	185	10.00	-2.02	018	10.80	1.05	095	10.88	1.42
136	9.64	-2.14	350	10.68	.43	Meth: 050.50 PCT			025	10.76	.37	018	10.80 R	1.33
254	9.55	-2.46	233	10.61	.41	Soluble Potash			028	10.68	.22	040	10.86	1.26
262	9.35 s	-3.19	392	10.67	.41	<u>ICP (Oxalate)</u>			Avg 10.67			391	10.85	1.24
354	8.30 s	-7.08	073	10.58	.38	292	10.72	1.20	105	10.64	-.18	055	10.83	1.13
Meth: 048.20 PCT			211	10.64	.35	106	10.64	.73	029	10.57	-.48	260	10.62 R	1.12
Water Soluble Phosph			009	10.61	.13	Avg 10.52			034	10.51	-.79	262	10.80	1.09
<u>Spectrometric</u>			Avg 10.57			324	10.52	-.04	037	10.56	-.87	022	10.78	1.05
247	8.73	1.29	372	10.49	-.39	354	10.49	-.82	035	10.43	-1.09	258	10.78	.92
Avg	7.55		220	10.42	-.83	157	10.35	-.99	Meth: 050.99 PCT			102	10.77	.89
362	7.04	-.56	418	10.56 R	-.92	251	10.41	-1.36	Soluble Potash			377	10.76	.85
363	6.89	-.73	345	10.34	-1.03	Meth: 050.51 PCT			<u>Other</u>			043	10.76	.82
Meth: 048.99 PCT			296	10.31	-1.15	Soluble Potash			330	11.34 S	3.31	177	10.76	.81
Water Soluble Phosph			049	10.31	-1.16	<u>ICP (Citrate)</u>			405	10.97	1.85	025	10.76	.81
<u>Other</u>			072	10.21	-1.58	023	10.98	1.76	260	10.62 R	1.09	231	10.76	.81
275	19.59 X	.71	028	9.94	-2.71	377	10.76	.65	177	10.76	.96	131	10.75	.77
Meth: 048.XX PCT			Meth: 050.10 PCT			Avg 10.63			419	10.65	.80	114	10.74	.74
<u>Water Soluble Phosph</u>			Soluble Potash			389	10.63	-.13	325	10.65	.54	292	10.72	.70
275	19.59 X	1.60	<u>STPB Citrate</u>			007	10.52	-.71	376	10.65	.52	363	10.71	.69
Avg	10.56		322	11.38 S	3.52	361	10.47	-.83	Avg 10.52			090	10.69	.54
247	8.73	-.33	Avg 10.78			393	10.46	-.88	232	10.45	-.30	028	10.68	.53
362	7.04	-.63	022	10.78	-.71	Meth: 050.60 PCT			300	10.43	-.34	029	10.69	.51
* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large			360	10.41	-.58	350	10.68	.47
									A=Analysis beyond 3-s limits					

MAGRUDER - Fertilizer Check Sample No. - 200305

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 050.XX PCT			Meth: 050.XX PCT			Meth: 101.30 PCT			Meth: 121.00 PCT			Meth: 121.30 PCT		
<u>Soluble Potash</u>			<u>Soluble Potash</u>			<u>Acid Soluble Calcium</u>			<u>Acid Soluble Magnesi</u>			<u>Acid Soluble Magnesi</u>		
288	10.65	.47	027	10.32	-1.07	ICP	320	7.88	-1.55	AA	390	3.62	.16	ICP
390	10.67	.45	251	10.41 R	-1.13	096	1.66 s	-23.04	390	3.62	.16	096	3.55	-1.13
392	10.67	.44	296	10.31	-1.14	096	1.66 s	-23.04	309	3.60	.04	292	3.31	-2.72
233	10.61	.43	049	10.31	-1.15	Meth: 101.99 PCT			Avg	3.59		320	2.10 s	-10.95
073	10.58	.39	415	10.27	-1.30	Acid Soluble Calcium			397	3.56	-.20	Meth: 121.70 PCT		
211	10.64	.38	142	10.27	-1.32	<u>Other</u>			043	3.57	-.32	Acid Soluble Magnesi		
325	10.65	.36	275	10.27 X	-1.37	409	9.50 S	.00	351	3.53	-.39	<u>Titrimetric</u>		
106	10.64	.34	309	10.25	-1.39	Meth: 101.XX PCT			258	3.35	-1.41	415		
376	10.65	.34	072	10.21	-1.58	Acid Soluble Calcium			289	3.34	-1.51	4.22		
105	10.64	.30	289	10.12	-1.99	409	9.50 s	4.43	391	3.33	-1.55	.71		
389	10.63	.27	185	10.00	-2.49	035	8.82	2.17	095	3.23	-2.12	Meth: 121.99 PCT		
105	10.60	.26	028	9.94	-2.72	324	8.38	.50	193	2.43 s	-6.74	Acid Soluble Magnesi		
009	10.61	.16	072	9.88 s	-3.06	131	8.32	.32	Meth: 121.30 PCT			262		
Avg	10.57		Meth: 060.00 PCT			361	8.21	-.13	Acid Soluble Magnesi			4.14		
029	10.57	-.02	Free Water			247	8.19	-.26	ICP			3.91		
324	10.52	-.23	<u>Vacuum Oven</u>			102	8.14	-.39	330	6.80 s	21.10	234		
055	10.52	-.30	247	1.88	1.48	288	8.08	-.61	409	3.94	1.59	3.69		
034	10.51	-.36	193	1.77	.77	009	8.08	-.66	231	3.94	1.55	-.86		
372	10.49	-.36	363	1.75	.72	320	7.88	-1.55	131	3.90	1.28	Meth: 121.XX PCT		
397	10.55	-.42	Avg	1.66		096	1.66 s	-23.04	300	3.87	1.07	Acid Soluble Magnesi		
007	10.52	-.44	320	1.65	-.34	360	3.81	.75	415	4.22	2.76	330		
361	10.47	-.45	007	1.58	-.51	106	3.77	.43	262	4.14	2.38	6.80 s		
393	10.46	-.49	361	1.52	-.90	288	3.72	.11	409	3.94	1.35	415		
193	10.50	-.52	362	1.45	-1.41	Meth: 121.00 PCT			231	3.94	1.32	4.22		
232	10.45	-.54	Meth: 101.30 PCT			Acid Soluble Magnesi			106	3.77	.43	2.38		
234	10.55	-.57	Acid Soluble Calcium			AA			288	3.72	.11	1.35		
300	10.43	-.60	<u>ICP</u>			037	3.89	1.70	Avg	3.71		1.32		
035	10.43	-.62	035	8.82	2.17	137	3.80	1.20	354	3.70	-.24	1.11		
137	10.42	-.66	324	8.38	.50	177	3.71	.75	419	3.69	-.24	1.07		
037	10.56	-.67	131	8.32	.32	392	3.71	.68	389	3.68	-.28	.96		
351	10.42	-.68	Avg	8.23		055	3.71	.68	247	3.71	-.31	.79		
354	10.49	-.69	361	8.21	-.13	220	3.69	.61	324	3.67	-.31	.71		
247	10.40	-.78	247	8.19	-.26	028	3.69	.58	361	3.67	-.31	.63		
360	10.41	-.81	102	8.14	-.39	136	3.69	.54	070	3.71	-.38	.53		
220	10.42	-.82	288	8.08	-.61	296	3.63 R	.47	035	3.64	-.53	.48		
418	10.56 R	-.93	029	3.66 X	.38	029	3.66 X	.38	009	3.63	-.56	.34		
157	10.35	-.95	040	3.62	.16	157	3.62	-.64	070	3.71	-.32	.32		
345	10.34	-1.01	009	8.08	-.66	102	3.70 R	-.69	247	3.71	.27	.27		
* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits			220		
												3.69		
												.21		

MAGRUDER - Fertilizer Check Sample No. - 200305

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index		
Meth: 121.XX PCT			Meth: 131.30 PCT			Meth: 144.02 PCT			Meth: 144.99 PCT			Meth: 144.XX PCT				
<u>Acid Soluble Magnesi</u>			<u>Water Soluble Magnes</u>			<u>Sulfur</u>			<u>Sulfur</u>			<u>Sulfur</u>				
354	3.70	.21	ICP			Gravimetric			Other			073	6.04	-1.02		
234	3.69	.18	360	1.64	-.71	292	7.57	.71	096	5.82	-1.34	095	6.04	-1.02		
055	3.71	.17							361	5.78	-1.40	300	6.03	-1.03		
419	3.69	.17	Meth: 131.70 PCT			Meth: 144.50 PCT			409			5.72	-1.49	102	6.03	-1.03
028	3.69	.12	<u>Water Soluble Magnes</u>			<u>Sulfur</u>						106	5.98	-1.10		
136	3.69	.05	<u>Titrimetric</u>			<u>Turbidimetric</u>			Meth: 144.XX PCT			289	5.94	-1.17		
Avg	3.68		415	2.19	.71	289	5.94	-.71	<u>Sulfur</u>			363	5.88	-1.25		
029	3.66 X	-.10							040	8.20	2.22	096	5.82	-1.35		
361	3.67	-.10	Meth: 131.99 PCT			Meth: 144.99 PCT			292	7.57	1.28	361	5.78	-1.40		
324	3.67	-.10	<u>Water Soluble Magnes</u>			<u>Sulfur</u>			035	7.55	1.23	409	5.72	-1.50		
389	3.68	-.13	<u>Other</u>			<u>Other</u>			220	7.50	1.18					
035	3.64	-.25	029	2.04 X	.87	040	8.20	2.15	251	7.44	1.07	Meth: 151.00 PPM				
009	3.63	-.27	Avg	1.82		035	7.55	1.19	419	7.40	1.02	Arsenic				
040	3.62	-.31	309	1.60	-.87	220	7.50	1.14	397	7.34	.93	<u>Atomic Absorption</u>				
157	3.62	-.32				251	7.44	1.03	288	7.32	.90	136	8.40	.86		
390	3.62	-.33	Meth: 131.XX PCT			419	7.40	.98	009	7.26	.81	Avg	7.72			
309	3.60	-.39	<u>Water Soluble Magnes</u>			397	7.34	.89	296	7.25	.80	233	7.05	-.87		
296	3.63	-.47	415	2.19	1.43	009	7.26	.77	028	7.19	.70					
397	3.56	-.60	029	2.04 X	.84	296	7.25	.76	043	7.18	.69	Meth: 151.30 PPM				
043	3.57	-.60	220	1.84 R	.33	389	7.17	.64	157	7.17	.68	Arsenic				
023	3.56	-.61	Avg	1.82		136	7.13	.58	389	7.17	.67	<u>ICP</u>				
096	3.55	-.70	360	1.64	-.70	029	7.11	.55	136	7.13	.61	247	11.00	1.84		
351	3.53	-.77	289	1.63	-.75	360	6.97 R	.50	029	7.11	.58	Avg	7.91			
258	3.35	-1.68	309	1.60	-.84	330	6.87 R	.49	360	6.97 R	.53	106	7.50	-.25		
289	3.34	-1.76				351	7.06	.48	351	7.06	.51	096	7.45	-.27		
391	3.33	-1.80	Meth: 144.01 PCT			023	6.90	.37	330	6.87 R	.50	102	7.04	-.55		
292	3.31	-1.88	<u>Sulfur</u>			131	6.95	.32	023	6.90 R	.39	296	6.55	-.81		
095	3.23	-2.30	<u>Gravimetric</u>			137	6.92	.27	131	6.95	.35					
193	2.43 s	-6.38	288	7.32	1.26	Avg	6.73		137	6.92	.30	Meth: 151.99 PPM				
320	2.10 s	-8.06	028	7.19	1.02	070	6.65	-.15	Avg	6.72		Arsenic				
			043	7.18	1.01	262	6.37	-.53	070	6.65	-.13	<u>Other</u>				
			157	7.17	1.00	354	6.25	-.71	262	6.37	-.52	040	10.90	1.17		
			Avg	6.62		177	6.08	-.95	055	6.32	-.59	Avg	9.40			
			055	6.32	-.53	247	6.07	-1.01	354	6.25	-.71	409	9.00	-.30		
			233	6.19	-.76	073	6.04	-1.02	233	6.19	-.79	220	8.30	-1.02		
			324	6.10	-.92	300	6.03	-1.03	324	6.10	-.92					
			095	6.04	-1.03	106	5.98	-1.10	177	6.08	-.95					
			102	6.03	-1.05	363	5.88	-1.25	247	6.07 R	-1.01					
			* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits				

MAGRUDER - Fertilizer Check Sample No. - 200305

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index						
Meth: 151.XX PPM			Meth: 181.30 PPM			Meth: 190.99 PCT			Meth: 191.XX PPM			Meth: 202.XX PPM								
<u>Arsenic</u>			<u>Cadmium</u>			<u>Water Soluble Chlori</u>			<u>Chromium</u>			<u>Acid Soluble Cobalt</u>								
247	11.00	1.65	<u>ICP</u>			<u>Other</u>			096	81.00	.74	190	99.50 s	25.04						
040	10.90	1.61	035	0.64	-1.30	009	3.06	-.85	247	72.50	.26	409	18.00	1.29						
409	9.00	.42	Meth: 181.99 PPM			Meth: 191.00 PPM			409	69.50	.17	096	18.00	1.26						
136	8.40	.05	<u>Cadmium</u>			<u>Chromium</u>			102	68.83	.16	009	17.40	1.09						
Avg	8.32		<u>Other</u>			<u>Atomic Absorption</u>			Avg	67.81		106	16.50	.84						
220	8.30 R	-.49	040	1.35 R	34.87	190	144.00 S	7.79	288	67.50	-.14	040	15.40	.55						
106	7.50	-.51	220	1.00	.65	193	91.00	.71	324	62.50	-.30	220	14.00	.31						
096	7.45	-.54	409	1.00	.65	Avg	91.00		419	60.00	-.43	Avg	13.60							
233	7.05	-.78	Avg	0.99		Meth: 191.30 PPM			035	60.05	-.43	247	12.75	-.25						
102	7.04	-.81	362	0.98	-1.29	<u>Chromium</u>			393	42.55	-1.40	324	12.60	-.29						
296	6.55	-1.09	Meth: 181.XX PPM			<u>ICP</u>			376	28.35	-2.19	102	11.14	-.71						
Meth: 165.99 PCT			<u>Cadmium</u>			009			92.30	1.63	Meth: 202.00 PPM									
Acid Soluble Boron			419	5.50 s	15.74	096			81.00	.99	Acid Soluble Cobalt									
<u>Other</u>			009	3.45 s	8.41	247			72.50	.50	190			99.50 S	.00					
288	24.600	-.71	247	1.60	1.83	102			68.83	.33	Meth: 221.00 PCT									
Meth: 181.00 PPM			324	1.40	1.30	288			67.50	.26	Acid Soluble Copper									
Cadmium			106	1.40	1.08	Avg			63.56		<u>Atomic Absorption</u>									
<u>Atomic Absorption</u>			040	1.35	.92	324			62.50	-.07	351			0.0501	1.56					
136	1.08	1.08	102	1.27	.63	419			60.00	-.20	137			0.0500	1.52					
376	0.98	.12	296	1.10	.01	035			60.05	-.20	289			0.0445	1.06					
Avg	0.97		Avg	1.10		393			42.55	-1.18	233			0.0385	.59					
289	0.86	-1.15	136	1.08	-.09	376			28.35	-1.98	177			0.0335	.18					
363	0.50 R	-6.86	220	1.00	-.35	Meth: 191.99 PPM			040			15.40 R	.73	029			0.0327	.08		
Meth: 181.30 PPM			409	1.00	-.35	<u>Chromium</u>			Avg			12.87	Avg			0.0320				
Cadmium			362	0.98	-.42	<u>Other</u>			247			12.75	-.08	095			0.0315 X	-.47		
<u>ICP</u>			376	0.98	-.42	220			85.50	.85	324			12.60	-.08	055			0.0300	-.54
419	5.50 S	11.85	289	0.86	-.85	Avg			77.50		102			11.14	-.48	043			0.0255	-.59
009	3.45 S	6.30	288	0.70	-1.42	409			69.50	-.88	419			11.00	-.52	390			0.0250	-.68
247	1.60	1.33	035	0.64	-1.65	Meth: 191.XX PPM			288			8.45	-1.23	220			0.0250	-.73		
324	1.40 R	.93	363	0.50 R	-2.78	<u>Chromium</u>			320			8.00	-1.35	193			0.0190	-1.10		
106	1.40	.76	Meth: 190.99 PCT			190			144.00 s	4.31	Meth: 202.99 PPM			190			0.0110	-1.79		
102	1.27	.42	Water Soluble Chlori			009			92.30	1.37	Acid Soluble Cobalt			Meth: 221.30 PCT						
Avg	1.12		<u>Other</u>			193			91.00	1.32	<u>Other</u>			Acid Soluble Copper						
296	1.10	-.05	288	3.27	.88	Avg			16.00		409			18.00	.87	<u>ICP</u>				
288	0.70	-1.13	Avg	3.17		220			85.50	.98	Avg			16.00		231			0.1070 s	8.37
* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits			354			0.0495 s	3.65				

MAGRUDER - Fertilizer Check Sample No. - 200305

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 221.30 PCT			Meth: 221.XX PCT			Meth: 241.00 PCT			Meth: 241.99 PCT			Meth: 241.XX PCT		
<u>Acid Soluble Copper</u>			<u>Acid Soluble Copper</u>			<u>Acid Soluble Iron</u>			<u>Acid Soluble Iron</u>			<u>Acid Soluble Iron</u>		
ICP			009	0.0347	.43	<u>Atomic Absorption</u>			<u>Other</u>			Avg 3.72		
247	0.0529	2.54	177	0.0335	.35	095	3.82	-.86	234	4.16	.86	247	3.71	-.07
023	0.0440 R	1.92	029	0.0327	.25	289	3.80	-1.02	Avg	3.83		296	3.69	-.11
330	0.0380	.96	Avg	0.0301		043	3.78	-1.15	262	3.51	-.87	397	3.57	-.30
419	0.0350	.83	251	0.0300	-.01	296	3.69	-1.74	362	0.47 S	-8.98	262	3.51	-.34
360	0.0365	.80	040	0.0270	-.29	397	3.57 R	-2.51	Meth: 241.XX PCT			419	3.34	-.65
009	0.0347	.60	157	0.0267	-.32	190	3.05 s	-6.37	<u>Acid Soluble Iron</u>			320	3.04	-1.07
251	0.0300	.10	102	0.0266	-.33	193	2.55 s	-8.72	330	4.62	1.43	190	3.05 R	-1.31
Avg	0.0290		106	0.0270	-.40	Meth: 241.30 PCT			360	4.46	1.17	251	2.55	-1.86
040	0.0270	-.21	043	0.0255	-.49	<u>Acid Soluble Iron</u>			220	4.26	.85	193	2.55	-1.86
157	0.0267	-.25	055	0.0300	-.57	<u>ICP</u>			137	4.21	.78	102	2.40	-2.08
102	0.0266	-.26	390	0.0250	-.61	330	4.62	1.27	324	4.16	.69	376	2.32	-2.20
106	0.0270	-.39	035	0.0233	-.64	360	4.46	1.08	234	4.16	.69	288	2.23	-2.35
035	0.0233	-.62	220	0.0250	-.67	324	4.16	.74	409	4.13	.65	035	1.97	-2.76
389	0.0223	-.72	389	0.0223	-.74	409	4.13	.71	028	4.12	.63	292	1.45 A	-3.57
324	0.0219	-.76	324	0.0219	-.77	157	4.09	.67	157	4.09	.59	362	0.47 s	-5.12
288	0.0190	-1.07	220	0.0201	-.96	131	4.07	.65	351	4.09	.58	Meth: 251.00 PPM		
409	0.0145	-1.57	193	0.0190	-1.04	096	4.05	.62	131	4.07	.57	Lead		
Meth: 221.99 PCT			409	0.0145	-1.49	009	4.05	.62	177	4.08	.57	<u>Atomic Absorption</u>		
<u>Acid Soluble Copper</u>			190	0.0110	-1.81	231	4.03	.61	096	4.05	.52	136	19.70	.86
<u>Other</u>			Meth: 241.00 PCT			106	4.01	.58	009	4.05	.52	Avg	14.35	
220	0.0201	.71	<u>Acid Soluble Iron</u>			361	4.01	.57	231	4.03	.51	363	9.00	-.87
Meth: 221.XX PCT			<u>Atomic Absorption</u>			023	3.99	.56	136	4.03	.50	Meth: 251.30 PPM		
<u>Acid Soluble Copper</u>			220	4.26	1.85	354	3.98	.56	106	4.01	.47	Lead		
231	0.1070 s	7.33	137	4.21	1.54	070	3.85	.40	354	3.98	.46	<u>ICP</u>		
354	0.0495 s	3.18	028	4.12	1.03	247	3.71	.24	361	4.01	.45	419	28.00	1.29
247	0.0529	2.16	351	4.09	.78	Avg	3.50		023	3.99	.45	288	25.30	.92
351	0.0501	1.92	177	4.08	.72	419	3.34	-.25	037	3.95	.38	247	23.75	.69
137	0.0500	1.88	136	4.03	.53	320	3.04	-.52	233	3.94	.37	009	23.55	.66
023	0.0440 R	1.62	Avg	3.96		251	2.55	-1.08	040	3.94	.34	106	22.50	.55
289	0.0445	1.36	040	3.94	-.18	102	2.40	-1.24	029	3.93	.33	102	22.00	.45
233	0.0385	.83	029	3.93	-.19	376	2.32	-1.33	055	3.92	.32	096	19.00	.02
330	0.0380	.76	037	3.95	-.20	288	2.23	-1.43	070	3.85	.21	Avg	18.89	
419	0.0350	.66	055	3.92	-.31	035	1.97	-1.73	095	3.82	.16	296	17.35	-.25
360	0.0365	.61	233	3.94	-.45	292	1.45	-2.31	390	3.82	.16	035	16.90	-.30
095	0.0315 X	.54	390	3.82	-.86	* X=Excluded from lab performance			043	3.78	.13	035	16.90	-.30
S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits			289	3.80	.12	324	16.00	-.50

MAGRUDER - Fertilizer Check Sample No. - 200305

Laboratory Averages & Accuracy Indexes

Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index	Lab	Average*	Index
Meth: 251.30 PPM			Meth: 261.00 PCT			Meth: 261.30 PCT			Meth: 261.XX PCT			Meth: 281.00 PPM		
Lead			Acid Soluble Mangane			Acid Soluble Mangane			Acid Soluble Mangane			Mercury		
<u>ICP</u>			<u>AA</u>			<u>ICP</u>			<u>ICP</u>			<u>Atomic Absorption</u>		
376 10.47 -1.19			233 1.910 1.28			360 1.810 .39			102 1.878 .86			376 0.21 .87		
389 1.90 -2.40			136 1.885 1.02			009 1.823 .25			035 1.865 .76			Avg 0.11		
			137 1.880 .99			096 1.805 .06			131 1.860 .68			363 0.00 -.86		
Meth: 251.99 PPM			028 1.855 .73			Avg 1.801			028 1.855 .64			Meth: 281.99 PPM		
Lead			296 1.790 R .51			361 1.785 -.21			354 1.839 .59			Mercury		
<u>Other</u>			029 1.814 .30			251 1.775 -.35			360 1.810 .43			<u>Other</u>		
409 22.00 1.24			177 1.795 .11			106 1.760 -.41			009 1.823 .35			220 0.02 .00		
Avg 19.60			351 1.791 .08			247 1.760 -.44			029 1.814 .23					
040 18.80 -.39			289 1.790 .06			389 1.740 -.59			096 1.805 .15			Meth: 281.XX PPM		
220 18.00 -.90			Avg 1.784			419 1.740 -.62			177 1.795 .05			<u>Mercury</u>		
			037 1.773 -.27			157 1.738 -.67			351 1.791 .04			376 0.21 1.29		
Meth: 251.XX PPM			392 1.735 -.50			070 1.700 -.99			Avg 1.791			Avg 0.08		
<u>Lead</u>			391 1.750 R -.62			023 1.687 -1.15			289 1.790 -.01			220 0.02 -.55		
419 28.00 1.48			390 1.725 -.62			300 1.610 -1.82			361 1.785 -.15			363 0.00 -.74		
288 25.30 1.08			397 1.712 -.74			320 0.993 s -7.70			251 1.775 -.28					
247 23.75 .82			055 1.695 -.92						037 1.773 -.29					
009 23.55 .79			043 1.660 -1.27			Meth: 261.31 PCT			106 1.760 -.31					
106 22.50 .66			190 1.630 -1.57			Acid Soluble Mangane			247 1.760 -.35			Meth: 289.00 PPM		
409 22.00 .57			258 1.620 -1.67			<u>ICP</u>			040 1.752 -.48			Molybdenum		
102 22.00 .56						288 1.731 .71			296 1.790 -.48			<u>Atomic Absorption</u>		
136 19.70 .22			Meth: 261.11 PCT						389 1.740 -.50			190 16.00 S .00		
096 19.00 .08			Acid Soluble Mangane						419 1.740 -.52					
040 18.80 .05			<u>AA</u>			Meth: 261.99 PCT			392 1.735 -.54			Meth: 289.30 PPM		
Avg 18.48			040 1.752 .89			Acid Soluble Mangane			288 1.731 -.57			Molybdenum		
220 18.00 -.17			Avg 1.691			<u>Other</u>			157 1.738 -.58			<u>ICP</u>		
296 17.35 -.22			095 1.630 -.84			262 1.995 -.71			391 1.750 -.62			247 7.90 1.15		
035 16.90 -.27									390 1.725 -.65			096 7.30 .72		
324 16.00 -.49			Meth: 261.30 PCT			Meth: 261.XX PCT			397 1.712 -.76			102 7.07 .56		
376 10.47 -1.24			Acid Soluble Mangane			<u>Acid Soluble Mangane</u>			070 1.700 -.89			009 7.00 .51		
363 9.00 -1.48			<u>ICP</u>			330 2.180 s 3.76			055 1.695 -.93			288 6.40 .16		
389 1.90 -2.57			330 2.180 s 3.61			231 2.040 2.42			023 1.687 -1.07			419 6.40 .16		
			231 2.040 2.29			324 2.015 2.16			043 1.660 -1.26			Avg 6.29		
Meth: 261.00 PCT			324 2.015 2.03			262 1.995 1.99			190 1.630 -1.55			106 4.60 -1.21		
Acid Soluble Mangane			102 1.878 .75			220 1.940 1.44			095 1.630 -1.56			324 3.65 -1.89		
<u>AA</u>			035 1.865 .65			193 1.910 1.17			258 1.620 -1.64					
220 1.940 1.59			131 1.860 .57			233 1.910 1.16			300 1.610 -1.74					
193 1.910 1.29			354 1.839 .51			136 1.885 .91			320 0.993 s -7.69					
* X=Excluded from lab performance			S/s=Screened Outlier			137 1.880 .88								
			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: 289.99 PPM			Meth: 291.30 PPM			Meth: 301.99 PPM			Meth: 311.XX PCT			Meth: 321.30 PCT		
Molybdenum			Nickel			Selenium			Sodium			Acid Soluble Zinc		
<u>Other</u>			<u>ICP</u>			<u>Other</u>						<u>ICP</u>		
409	8.50	.70	376	17.20	-1.63	Avg	0.17		288	0.39	.78	330	0.068	1.14
220	8.35	.59				131	0.15	-.30	009	0.37	-.03	035	0.066	.99
Avg	8.30		Meth: 291.99 PPM			040	0.10	-.95	193	0.36	-.89	360	0.062	.09
040	8.05	-1.29	Nickel			Meth: 301.XX PPM			035	0.36	-.95	Avg	0.061	
			<u>Other</u>			Selenium			320	0.36	-.98	409	0.061	-.20
Meth: 289.XX PPM			409	40.50	1.11	419	54.50 s	785.11	Meth: 321.00 PCT			288	0.061	-.21
Molybdenum			220	37.50	.16	247	4.90 R	68.43	Acid Soluble Zinc			251	0.060	-.26
190	16.00 s	6.85	Avg	37.15		220	0.25	1.23	<u>Atomic Absorption</u>			292	0.060	-.26
409	8.50	1.20	035	33.45	-1.12	Avg	0.17		043	0.098 s	4.95	009	0.060	-.34
220	8.35	1.10	Meth: 291.XX PPM			131	0.15	-.30	137	0.080	2.46	389	0.059	-.44
040	8.05 R	1.06	Nickel			040	0.10	-.95	258	0.070	1.04	023	0.061	-.67
247	7.90	.77	096	46.50	1.58	Meth: 311.00 PCT			289	0.070	1.04	320	0.061	-.68
096	7.30	.38	409	40.50	.86	Sodium			392	0.068	.95	040	0.056	-1.10
102	7.07	.23	040	39.15	.69	<u>Atomic Absorption</u>			233	0.068	.69	106	0.052	-1.78
009	7.00	.19	009	38.30	.51	193	0.36	.71	037	0.065	.36	Meth: 321.99 PCT		
Avg	6.72		102	38.13	.49	Meth: 311.30 PCT			397	0.064	.24	Acid Soluble Zinc		
419	6.40	-.24	220	37.50	.41	Sodium			351	0.063	.16	<u>Other</u>		
288	6.40	-.24	190	36.00	.21	Flame Photometric			Avg	0.063		362	0.080 S	2.05
106	4.60	-1.38	Avg	34.37		Sodium			029	0.062	-.09	393	0.076	1.21
324	3.65	-2.00	035	33.45	-.29	Selenium			177	0.062	-.30	262	0.070	.56
Meth: 291.00 PPM			324	31.20	-.42	Other			391	0.060	-.38	Avg	0.065	
Nickel			419	29.00	-.70	Meth: 311.99 PCT			055	0.060	-.38	096	0.060	-.57
<u>Atomic Absorption</u>			247	25.55	-1.15	Sodium			095	0.060	-.45	220	0.055	-1.18
190	36.00	.00	376	17.20	-2.24	Other			296	0.060	-.68	Meth: 321.XX PCT		
Meth: 291.30 PPM			Meth: 301.30 PPM			Selenium			193	0.056	-.98	Acid Soluble Zinc		
Nickel			Selenium			Selenium			390	0.056	-1.10	Other		
<u>ICP</u>			<u>ICP</u>			<u>ICP</u>			157	0.055	-1.14	043	0.098 s	5.29
096	46.50	1.54	419	54.50 S	350.74	Avg	0.38		220	0.055 R	-1.29	354	0.084 s	4.74
040	39.15 R	.78	Avg	4.90		009	0.37	-.40	234	0.050	-1.79	362	0.080 s	3.07
009	38.30	.65	247	4.90	-.71	035	0.36	-1.27	Meth: 321.30 PCT			137	0.080	2.65
102	38.13	.63	Meth: 301.99 PPM			Meth: 311.XX PCT			Acid Soluble Zinc			393	0.076	2.01
Avg	32.27		Selenium			Sodium			<u>ICP</u>			231	0.075	1.89
324	31.20	-.12	<u>Other</u>			Selenium			354	0.084 s	5.98	102	0.065 R	1.24
419	29.00	-.35	220	0.25	1.23	Selenium			231	0.075	2.52	258	0.070	1.14
247	25.55	-.73	S/s=Screened Outlier			Selenium			102	0.065 R	1.60	262	0.070	1.14
* X=Excluded from lab performance			S/s=Screened Outlier			R=Duplicate Range too large			A=Analysis beyond 3-s limits					

MAGRUDER - Fertilizer Check Sample No. - 200305

Laboratory Averages & Accuracy Indexes

<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>	<u>Lab</u>	<u>Average*</u>	<u>Index</u>
Meth: 321.XX PCT			Meth: 325.30 PCT								
<u>Acid Soluble Zinc</u>			<u>Water Soluble Zinc</u>								
289	0.070	1.14	247	0.061	.71						
392	0.068	1.03									
233	0.068	.77									
330	0.068	.77									
035	0.066	.68									
037	0.065	.42									
397	0.064	.29									
351	0.063	.17									
Avg	0.062										
029	0.062	-.07									
360	0.062	-.15									
324	0.062	-.17									
409	0.061	-.26									
288	0.061	-.29									
177	0.062	-.31									
096	0.060	-.36									
292	0.060	-.36									
055	0.060	-.36									
251	0.060	-.36									
391	0.060	-.36									
009	0.060	-.42									
095	0.060	-.44									
389	0.059	-.51									
320	0.061	-.59									
023	0.061	-.60									
296	0.060	-.70									
193	0.056	-1.01									
040	0.056	-1.04									
390	0.056	-1.13									
157	0.055	-1.17									
220	0.055	-1.18									
220	0.055 R	-1.34									
106	0.052	-1.59									
234	0.050	-1.86									

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

MAGRUDER - Fertilizer Check Sample No. - 200305

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	10	0.34	1.42	0.23	050.99	14	0.08	1.44	0.43
001.99	11	0.64	2.11	0.21	050.XX	74	0.11	1.11	0.46
001.XX	21	0.33	1.67	0.19	060.00	7	0.00	1.01	0.21
002.99	2	0.00	1.22	0.06	060.XX	7	0.00	1.01	0.21
002.XX	2	0.00	1.22	0.06	101.30	10	- 2.30	7.34	0.40
009.10	3	0.00	1.06	0.28	101.XX	11	- 1.69	7.25	0.39
009.XX	4	0.00	1.07	0.15	121.00	21	- 0.31	1.75	0.18
010.11	9	0.00	0.96	0.35	121.30	24	0.42	5.02	0.27
010.12	6	- 0.59	1.62	0.57	121.99	2	0.00	1.21	0.14
010.60	51	0.08	1.05	0.35	121.XX	48	0.03	2.93	0.18
010.99	6	0.00	1.03	0.17	131.00	2	0.00	1.05	0.44
010.XX	70	0.04	1.15	0.40	131.99	2	0.00	1.22	0.01
020.10	8	- 0.16	1.07	0.18	131.XX	6	0.01	0.95	0.15
020.20	19	0.00	0.97	0.27	144.01	9	0.00	1.03	0.05
020.40	8	- 0.03	0.95	0.35	144.99	29	0.02	0.97	0.14
020.50	4	- 5.17	33.53	8.80	144.XX	40	0.00	0.97	0.13
020.XX	39	- 0.11	1.50	0.41	151.00	2	0.00	1.22	0.05
030.10	2	0.00	1.22	0.00	151.30	5	0.00	1.06	0.09
030.20	2	0.00	1.21	0.14	151.99	3	0.00	1.01	0.39
030.40	3	0.00	1.11	0.08	151.XX	10	0.00	0.97	0.19
030.XX	7	0.00	1.04	0.09	181.00	4	- 1.18	2.52	2.50
040.20	3	0.00	0.28	0.88	181.30	9	2.10	4.28	0.23
040.99	2	0.00	1.22	0.03	181.99	4	8.63	17.29	2.42
040.XX	6	0.00	1.02	0.22	181.XX	17	1.29	4.38	0.49
041.10	21	- 0.16	1.19	0.27	190.99	2	0.00	1.20	0.17
041.20	5	0.00	0.96	0.40	190.XX	2	0.00	1.20	0.17
041.40	6	- 0.23	1.10	0.17	191.00	2	3.75	5.30	1.58
041.50	8	- 0.57	3.42	0.32	191.30	10	0.00	1.02	0.10
041.60	14	- 0.05	1.70	0.47	191.99	2	0.00	1.19	0.22
041.XX	47	- 0.17	1.56	0.39	191.XX	14	0.30	1.49	0.25
048.20	3	0.00	1.12	0.04	202.30	10	0.07	1.00	0.08
048.XX	4	0.00	1.08	0.01	202.99	2	0.00	1.10	0.39
050.00	24	0.16	1.25	0.27	202.XX	13	1.89	6.89	1.32
050.10	2	1.75	2.48	0.54	221.00	13	0.0000	0.9784	0.2791
050.30	12	0.00	0.97	0.31	221.30	18	0.6713	2.1989	0.7934
050.50	6	0.00	0.81	0.61	221.XX	31	0.3590	1.6341	0.5715
050.51	6	0.00	0.99	0.31	241.00	19	- 0.88	2.50	0.76
050.60	7	0.00	1.00	0.26	241.30	23	0.00	1.01	0.08
050.61	9	0.00	0.93	0.42	241.99	3	- 2.99	5.25	0.11

MAGRUDER - Fertilizer Check Sample No. - 200305

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
241.XX	45	- 0.22	1.34	0.15					
251.00	2	0.00	1.21	0.14					
251.30	12	0.00	1.01	0.13					
251.99	3	0.00	1.01	0.39					
251.XX	17	0.00	1.01	0.14					
261.00	20	- 0.015	0.956	0.198					
261.11	2	0.000	1.127	0.338					
261.30	21	- 0.195	2.111	0.208					
261.XX	45	- 0.087	1.606	0.201					
281.00	2	0.00	1.22	0.06					
281.XX	3	0.00	1.12	0.06					
289.30	8	0.00	1.03	0.11					
289.99	3	0.00	0.30	0.88					
289.XX	12	0.57	1.96	0.97					
291.30	8	0.09	1.00	0.10					
291.99	3	0.00	0.94	0.50					
291.XX	12	0.00	1.01	0.16					
301.30	2	175.36	248.00	2.55					
301.99	3	0.00	1.11	0.09					
301.XX	5	170.70	344.72	3.30					
311.99	5	0.00	0.79	0.63					
311.XX	7	0.00	0.86	0.55					
321.00	20	0.193	1.470	0.301					
321.30	17	0.294	1.380	1.108					
321.99	5	0.349	1.207	0.500					
321.XX	41	0.287	1.388	0.657					