magruder fertilizer
check sample program

Magruder Proficiency Test Program

Frank J. Sikora, Division of Regulatory Services
University of Kentucky

Focus on reports

- **Individual Lab Performance**
- **Collective Lab Performance**

New Orleans, Feb 2017

Magruder 161211 12-40-0

results due January 15, 2017

Guaranteed Analysis

Total Nitrogen (N)	12.0 %
Ammoniacal Nitrogen (N)	12.0 %
Available Phosphate (P_2O_5)	40.0 %
Total Sulfur (S)	10.0 %
Free Sulfur (S)	5.0 %
Combined Sulfur	5.0 %

Also analyze for:

Water Soluble Phosphate (P_2O_5)

and

As (ppm), Cd (ppm), Cr (ppm), Co (ppm), Pb (ppm), Hg (ppm), Mo (ppm), Ni (ppm), Se (ppm), Cu (%), Zn (%)

The units above are those required for reporting data from this Magruder sample. They may not be the units required on a commercial fertilizer label.

Note: This Magruder Check Sample material is not to be used in the manufacture of products nor applied to any crops or for other fertilizer uses. It is intended for analytical testing purposes only.

SDS for this product can be found at:

http://www.magrudercheckssample.org/SDS/161211sds.pdf

Check Sample Program – Data Reporting

Samples | Reports | User Admin | Information | Log Out

User: [redacted] Lab #: [redacted]

2016 Regular Check Sample Program
161211 - MAP plus S

Reports

Analyte All Tests Report
Method All Tests Report
Analyte Statistical Summary
Individual Method Performance Summary

Report Cards

Method Report Cards

Analyte Report Cards

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Samples | Reports | User Admin | Information | Log Out

User: Lab #:

2016 Regular Check Sample Program
161211 - MAP plus S

Reports

Analyte All Tests Report
Method All Tests Report
Analyte Statistical Summary
Individual Method Performance Summary

Report Cards

Method Report Cards

Analyte Report Cards

RCS161211AnalyteL0007.pdf
RCS161211AnalyteL0023.pdf
RCS161211AnalyteL0025.pdf
RCS161211AnalyteL0027.pdf
RCS161211AnalyteL0028.pdf
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RCS161211AnalyteL0527.pdf

magruder fertilizer check sample program

STRIVING FOR EXCELLENCE IN ANALYSIS

Sample # 161211: MAP plus S

Analyte Report Card for Lab Code [redacted]

Proficiency Testing For 17 Analytes — **Issue Date : 01/31/2017**

Analyte Group	Analyte Group (Units)	Lab 0494 Data		Analyte Values				Magruder Z Score	Lab 0494 Method	Flag
		Value	range	Rob Mean	Rob SD	R-bar	# Tests			
010	Total Nitrogen (12%)	12.13	0.2400	12.06	0.2047	0.0901	72	0.34	010.60	0
041	Direct Available Phosphorus as P2O5 (40%)	41.31	0.0600	41.40	0.9492	0.2804	43	-0.09	041.51	0
041	Direct Available Phosphorus as P2O5 (40%)	42.66	0.4400	41.40	0.9492	0.2804	43	1.33	041.10	0
101	Acid Soluble Calcium (%)	0.2337	0.0014	0.2201	0.0532	0.0050	14	0.26	101.33	0
121	Acid Soluble Magnesium (%)	0.5389	0.0072	0.5073	0.0594	0.0151	15	0.53	121.33	0
148	Total Sulfur (10%)	10.61	0.0306	9.492	0.9896	0.1474	40	1.13	148.07	0
151	Acid Soluble Arsenic (ppm)	12.17	0.0082	10.73	1.830	0.6624	14	0.79	151.33	0
181	Acid Soluble Cadmium (ppm)	2.582	0.0192	2.439	0.3391	0.0565	17	0.42	181.33	0
191	Acid Soluble Chromium (ppm)	72.18	0.2802	68.68	7.380	1.807	17	0.47	191.33	0
202	Acid Soluble Cobalt (ppm)	2.688	0.0036	2.357	0.6741	0.1295	12	0.49	202.33	0
241	Acid Soluble Iron (%)	0.8349	0.0133	0.8362	0.0696	0.0233	17	-0.02	241.33	0
251	Acid Soluble Lead (ppm)	1.052	0.0978	1.627	0.9905	0.1306	8	-0.53	251.33	0
261	Acid Soluble Manganese (%)	0.0301	0.0005	0.0299	0.0011	0.0004	15	0.15	261.35	0
289	Acid Soluble Molybdenum (ppm)	12.42	0.0544	11.02	1.830	0.4608	17	0.76	289.33	0
291	Acid Soluble Nickel (ppm)	11.64	0.0859	10.75	0.7227	0.3550	19	1.23	291.33	0
311	Sodium (%)	0.1154	0.0031	0.1263	0.0134	0.0022	6	-0.73	311.33	0
321	Acid Soluble Zinc (%)	0.0105	0.0001	0.0116	0.0019	0.7765	29	-0.58	321.33	0

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier and a 4 flag indicates rejected due to 0 value/s submitted. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are included for information only (Grey). Square brackets indicate that [your value] is lower than the Robust Analyte value less the Investigational Allowance. Method or Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.

magruder fertilizer check sample program

STRIVING FOR EXCELLENCE IN ANALYSIS

Sample # 161211: MAP plus S

Analyte Report Card for Lab Code [redacted]

Proficiency Testing For 17 Analytes

Issue Date : 01/31/2017

Analyte Group	Analyte Group (Units)	Lab 0494 Data		Analyte Values				Magruder Z Score	Lab 0494 Method	Flag
		Value	range	Rob Mean	Rob SD	R-bar	# Tests			
010	Total Nitrogen (12%)	12.13	0.2400	12.06	0.2047	0.0901	72	0.34	010.60	0
041	Direct Available Phosphorus as P2O5 (40%)	42.66	0.4400	41.40	0.9492	0.2804	43	1.33	041.10	0
041	Direct Available Phosphorus as P2O5 (40%)	41.31	0.0600	41.40	0.9492	0.2804	43	-0.09	041.51	0
148	Total Sulfur (10%)	10.61	0.0306	9.492	0.9896	0.1474	40	1.13	148.07	0

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier and a 4 flag indicates rejected due to 0 value/s submitted. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are included for information only (Grey). Square brackets indicate that [your value] is lower than the Robust Analyte value less the Investigational Allowance. Method or Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.

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STRIVING FOR EXCELLENCE IN ANALYSIS

Sample # 161211: MAP plus S

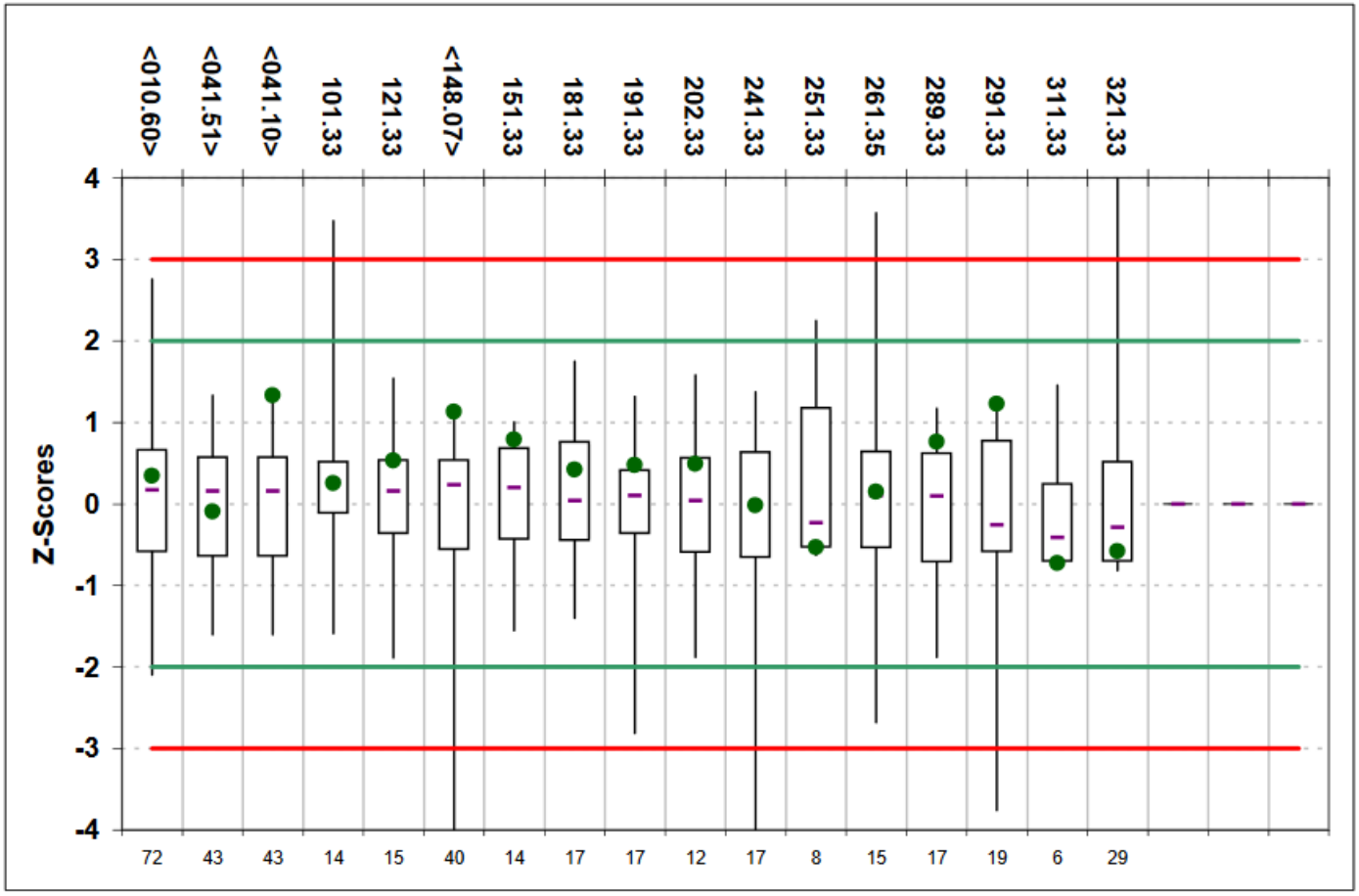
Analyte Report Card for Lab Code

Z-Score Box Plot and Guarantees

Proficiency Testing For 17 Analytes

Issue Date : 01/31/2017

Z-Score Box and Whisker Plots for Lab # 0494 <guaranteed analyte>



Guaranteed in This Sample			
Analyte	Code	Value*	IA
N	010	12.060	0.611
P2O5	040	42.212	0.933
S	148	9.492	0.675

* Value is the Robust Analyte Value estimated using the primary Analyte Codes for this sample.

Notes: The Methods you used are indicated above and the # Labs involved are below the Box and Whisker.
Your Z-Score is indicated by the Black Dot. If you do not see a Black Dot your score is off the chart.
Dots between the Green lines are acceptable Z-Scores. Dots outside the Red lines are actionable.
The Bar, Box and Whisker represent Median, 25% to 75% percentile and 5% to 95% percentile respectively.

Check Sample Program – Data Reporting

Samples | Reports | User Admin | Information | Log Out

User: Lab #:

2016 Regular Check Sample Program
161211 - MAP plus S

Reports

Analyte All Tests Report
Method All Tests Report
Analyte Statistical Summary
Individual Method Performance Summary

Report Cards

Method Report Cards

Analyte Report Cards

RCS161211AnalyteL0007.pdf
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STRIVING FOR EXCELLENCE IN ANALYSIS

Sample # 161211: MAP plus S

Method Report Card for Lab Code [redacted]

Proficiency For 17 Methods

Issue Date : 01/31/2017

Method Code	Analyte Name and Method (Units)	Lab 0494 Data		Method Values				Magruder	Threshold	
		Value	range	Rob Mean	Rob SD	R-bar	# Tests	Z Score	%RSD	Flag
010.60	Total Nitrogen, Combustion (12%)	12.13	0.2400	12.07	0.1876	0.1024	57	**0.33**	0%	0
041.10	Direct Available Phosphorus as P2O5, Gravimet... (40%)	42.66	0.4400	42.17	0.4659	0.2406	7	**0.94**	1%	0
041.51	Direct Available Phosphorus as P2O5, ICP, Cit... (40%)	41.31	0.0600	41.37	0.4595	0.6040	5	-0.12	0%	0
148.07	Total Sulfur, ICP, test portion as in 2006.03... (10%)	10.61	0.0306	9.344	1.106	0.2068	11	**1.14**	7%	0

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier and a 4 flag indicates rejected due to 0 value/s submitted. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are included for information only (Grey). Square brackets indicate that [your value] is lower than the Robust Analyte value less the Investigational Allowance. Method or Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.

Magruder 161012 Zinc Sulfate

results due November 15, 2016

Guaranteed Analysis

Total Zinc (Zn) ..... 35.0 %

Water Soluble Zinc (Zn) .....35.0 %

Sulfur (S) ..... 17.0 %

Also analyze for:

As (ppm), Cd (ppm), Cr (ppm), Co (ppm), Pb (ppm), Hg (ppm), Mo (ppm), Ni (ppm), Se (ppm), Cu (%)

The units above are those required for reporting data from this Magruder sample. They may not be the units required on a commercial fertilizer label.

Note: This Magruder Check Sample material is not to be used in the manufacture of products nor applied to any crops or for other fertilizer uses. It is intended for analytical testing purposes only.

SDS for this product can be found at:

http://www.magruderchecksample.org/SDS/161012sds.pdf

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STRIVING FOR EXCELLENCE IN ANALYSIS

Sample # 161012: ZnSO4

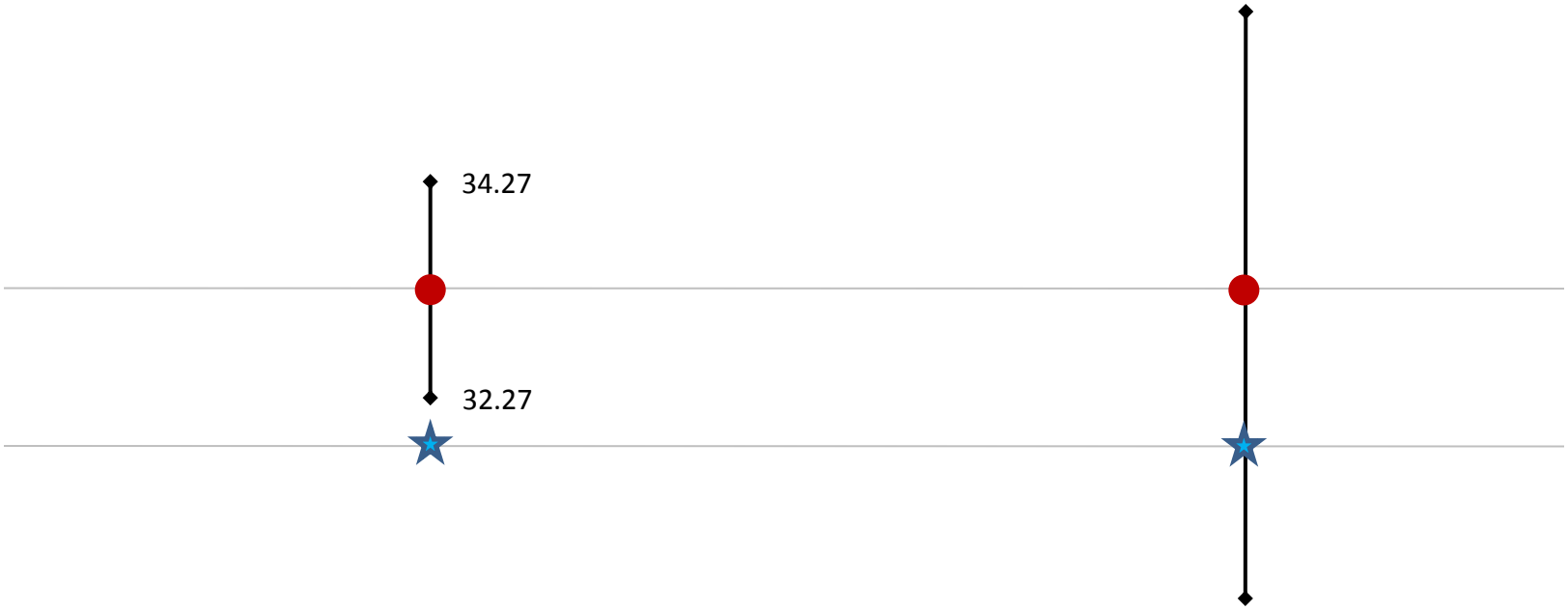
Analyte Report Card for Lab Code 0029

Proficiency Testing For 3 Analytes — **Issue Date : 12/31/2016**

Analyte Group	Analyte Group (Units)	Lab 0029 Data		Analyte Values				Magruder Z Score	Lab 0029 Method	Flag
		Value	range	Rob Mean	Rob SD	R-bar	# Tests			
148	Total Sulfur (17%)	15.46	0.4300	16.22	0.9040	0.3710	46	-0.85	148.00	0
148	Total Sulfur (17%)	15.88	0.0300	16.22	0.9040	0.3710	46	-0.38	148.01	0
321	Acid Soluble Zinc (35%)	[31.06]	1.480	33.27	2.230	0.4615	61	-0.99	321.00	0

Robust mean ± Investigational Allowance

Z score ± 2



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STRIVING FOR EXCELLENCE IN ANALYSIS

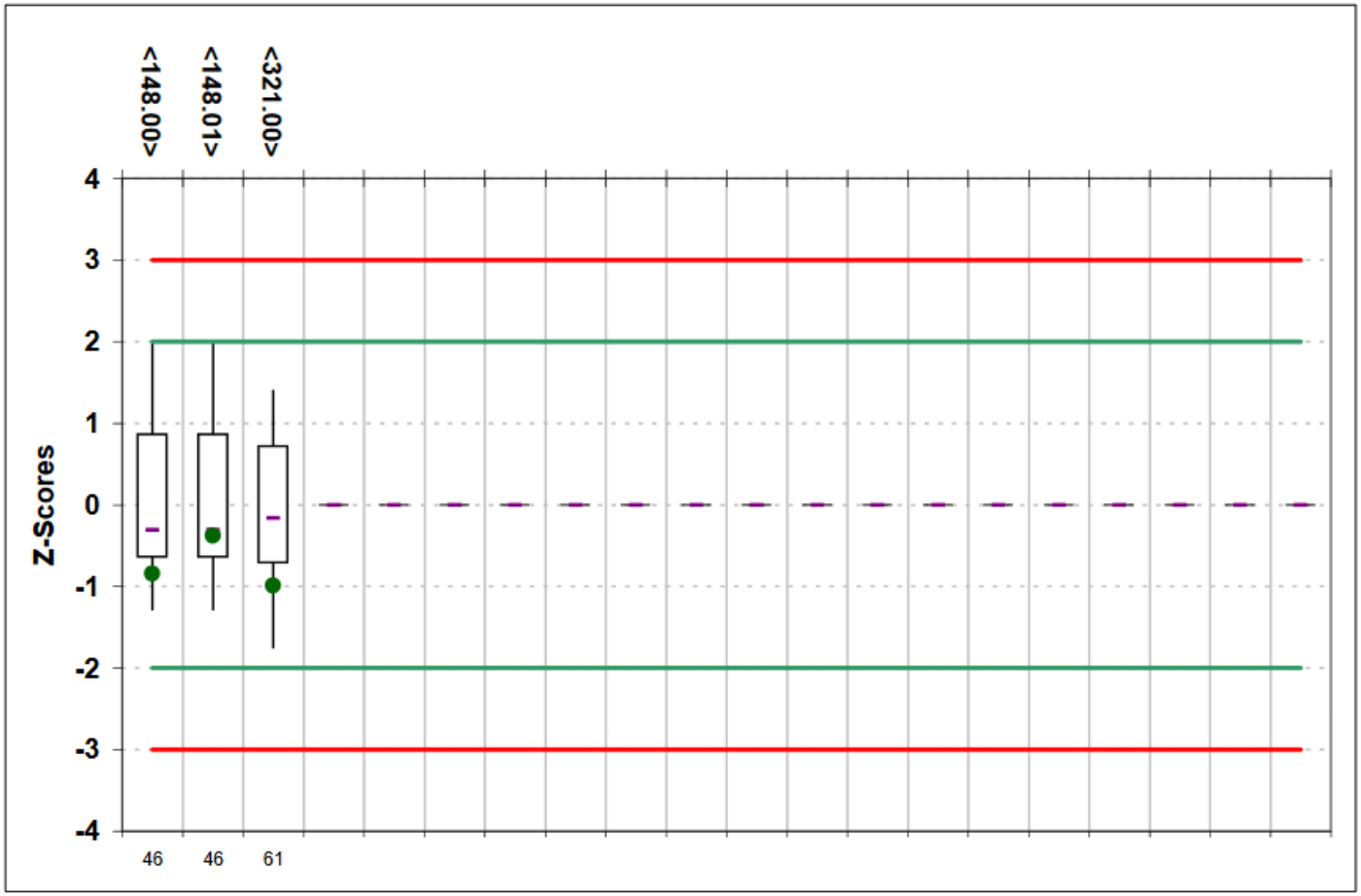
Sample # 161012: ZnSO4

Analyte Report Card for Lab Code [redacted]

Z-Score Box Plot and Guarantees

Proficiency Testing For 3 Analytes — **Issue Date : 12/31/2016**

Z-Score Box and Whisker Plots for Lab # 0029 <guaranteed analyte>



Guaranteed in This Sample

Analyte	Code	Value*	IA
S	148	16.220	1.000
Zn	321	33.273	1.000

* Value is the Robust Analyte Value estimated using the primary Analyte Codes for this sample.

Notes: The Methods you used are indicated above and the # Labs involved are below the Box and Whisker.
Your Z-Score is indicated by the Black Dot. If you do not see a Black Dot your score is off the chart.
Dots between the Green lines are acceptable Z-Scores. Dots outside the Red lines are actionable.
The Bar, Box and Whisker represent Median, 25% to 75% percentile and 5% to 95% percentile respectively.

magruder fertilizer check sample program

STRIVING FOR EXCELLENCE IN ANALYSIS

Sample # 161012: ZnSO4

Method Report Card for Lab Code [redacted]

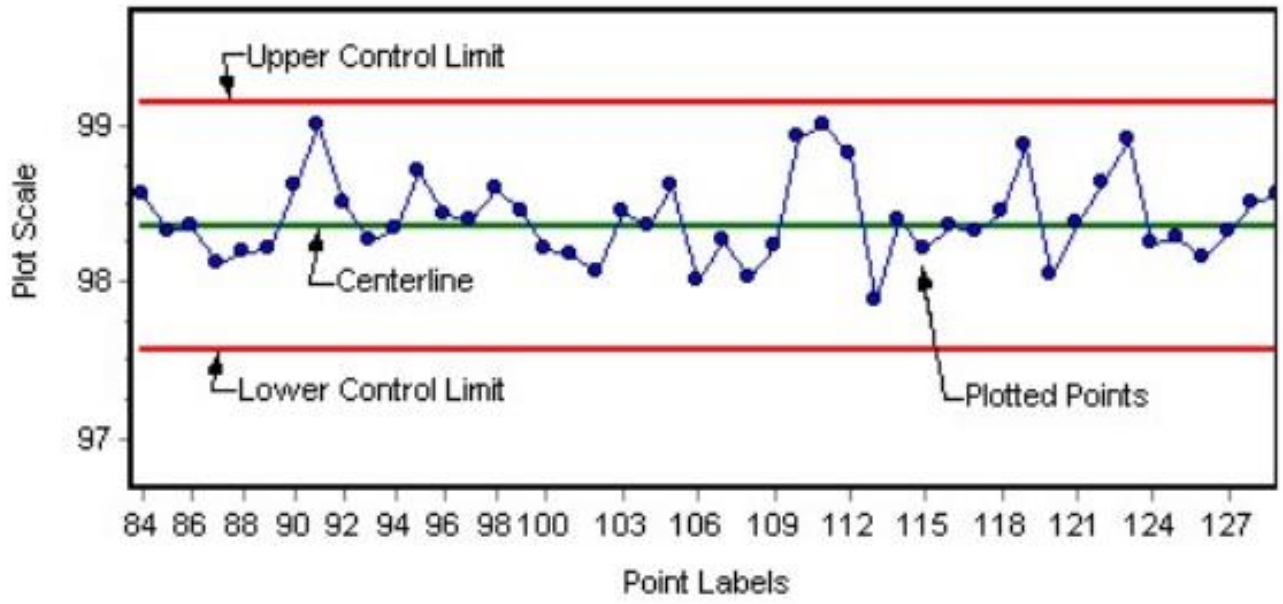
Proficiency For 3 Methods

Issue Date : 12/31/2016

Method Code	Analyte Name and Method (Units)	Lab 0029 Data		Method Values				Magruder Z Score	Threshold %RSD	Flag
		Value	range	Rob Mean	Rob SD	R-bar	# Tests			
148.00	Total Sulfur, Combustion (17%)	15.46	0.4300	15.73	0.3920	0.2436	7	-0.63	1%	0
148.01	Total Sulfur, Gravimetric - sulfate and elem... (17%)	15.88	0.0300	16.05	0.7055	0.1290	17	-0.25	1%	0
321.00	Acid Soluble Zinc , AA, inorganic 965.09 (35%)	[31.06]	1.480	32.72	2.722	0.4118	12	-0.61	3%	0

Interpreting Z Scores: Red indicates a normally distributed Z value >3 or <-3 (requires action), Orange = Z between 2 and 3 or -2 and -3 (warning) and Green = Z < 2 and >-2 (OK at 95%). Flags indicate data usage: 0 = Used, 1 = rejected for duplicates too far apart, 2 = rejected as extreme outlier and a 4 flag indicates rejected due to 0 value/s submitted. Robust statistics not used if < 6 labs used in calculations, in this case the Z Scores are included for information only (Grey). Square brackets indicate that [your value] is lower than the Robust Analyte value less the Investigational Allowance. Method or Analyte codes in light green indicate a guaranteed analyte. Individual lab values may be below detection limits but are reported solely for the purpose of this Proficiency Testing program.

Control Charts



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www.magruderchecksample.org

Search

Lab Portal

Introduction	Method Codes	Data Entry Instructions Training Videos	Statistical Reports Overview Quick Reference Guide Analyte Report Cards	Control Charts Excel file Download	FAQs on DLs	Contacts

2017 Samples and Reports

>

JAN 2017 170111 DAP analyte report method report	**FEB 2017** 170211 27-0-0 analyte report method report	**MAR 2017** 170311 28-0-0 liquid analyte report method report	**APR 2017** 170411 15-15-15+micros analyte report method report	**MAY 2017** 170511 Biosolids analyte report method report	**JUN 2017** 170611 AmPolyPhos+Phosphite analyte report method report	
JUL 2017 170711	**AUG 2017** 170811	**SEP 2017** 170911	**OCT 2017** 171011	**OCT 2017** 171111	**NOV 2017** 171112	**DEC 2017**

Magruder Check Sample: Z Control Charts

Enter Lab # Below

0000

Get Current Data

First check the Sample list below to make sure you have downloaded the latest version from the website. The last Sample in the list should reflect the most current Sample for which reports have been released.

Now enter your Lab Number. When you hit the enter key your Lab Number will convert to the standard 4 character format (leading 0's).

Finally click the [Get Current Data] button and you will be switched to the Control Charts sheet. These control charts show Z-scores for the last 12 Magruder Check Samples by Analyte and Method submitted by you.

When in the Control Charts sheet you can scroll sequentially through your Methods by tapping the [Tap To Scroll Through Charts] button or select the method of interest directly in the scroll box. If you wish you can print this page using the Excel Print Preview and Print icons.

When you return to this sheet samples for which you submitted data will be marked with an astrix. To return just click on the "StartUp" tab below.

16 Samples in This Version

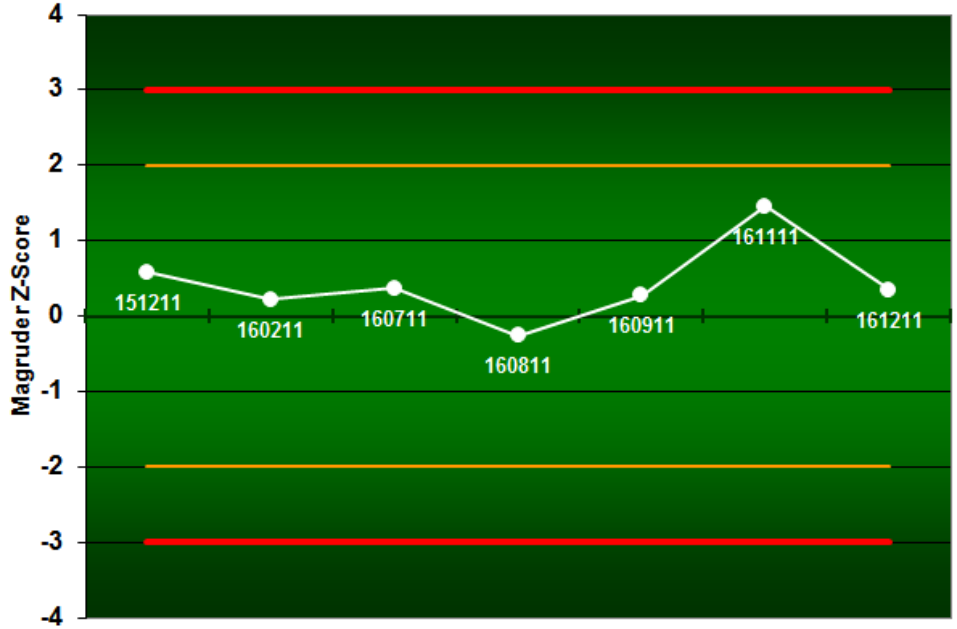
Number	Name
*151112	MAP
*151211	Grade 10-10-10
*160111	Micro Mix
*160211	Grade 24-25-4
*160311	Grade 5-2-0
160411	Liquid Thio S
*160511	Urea
*160512	Micros
*160611	WS 25-5-15
*160711	12-12-12 Micros
*160811	Liquid Organic
160911	MAP
161012	ZnSO4
161011	MOP
*161111	Grade 32-0-10
*161211	MAP plus S

magruder fertilizer
check sample program
STRIVING FOR EXCELLENCE IN ANALYSIS

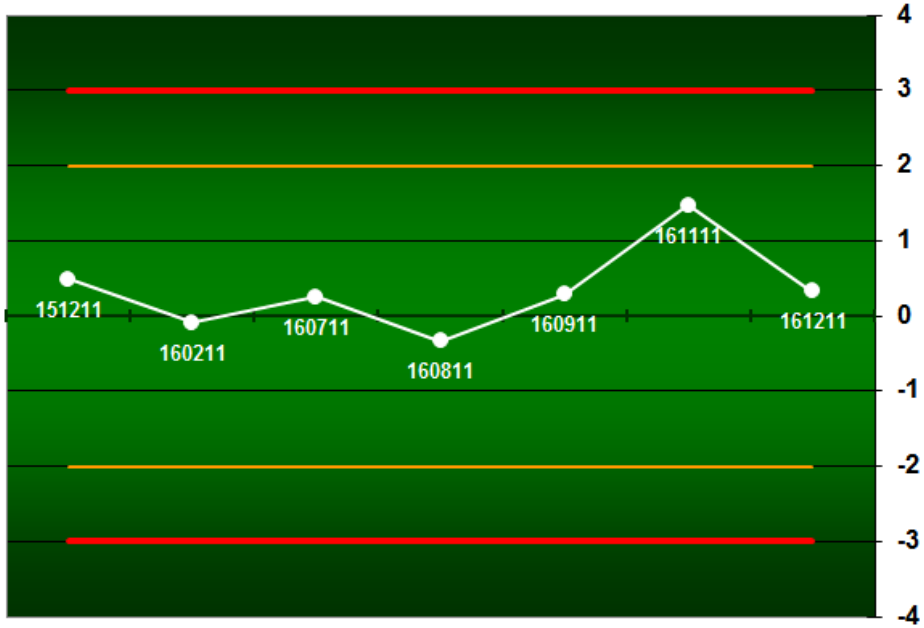
Magruder Check Sample Z Control Charts For Lab

Analyte Code 010 | Chart 2 of 27 | Method Code 010.60

Total Nitrogen (%)



Total Nitrogen, Combustion (%)



Tap To Scroll Through Charts

003.10
010.60
020.10
041.10
041.50
041.51
050.00
050.52
101.33
121.33
148.07
151.33
165.30
181.33
190.00
191.33
202.33
221.33

Analyte Code and Name						Method Code and Name						
010 Total Nitrogen (%)						010.60 Total Nitrogen, Combustion (%)						
Number of Samples	7		Analyte Values		Your				Lab Data		Threshold	Method Values
Sample Name & Code		Z	# Labs	Rob Mean	Rob SD	Method	Code	Z	# Labs	Value	Range	%RSD	Rob Mean	Rob SD
Grade 10-10-10	151211	0.58	78	9.959	0.1363	010.60	151211	0.49	62	10.04	0.0840	0%	9.977	0.1250
Grade 24-25-4	160211	0.22	77	24.56	0.4061	010.60	160211	-0.09	54	24.65	0.0500	0%	24.68	0.3303
12-12-12 Micros	160711	0.37	74	12.41	0.1470	010.60	160711	0.25	60	12.47	0.0500	0%	12.43	0.1407
Liquid Organic	160811	-0.26	71	5.185	0.1746	010.60	160811	-0.33	50	5.140	0.0200	1%	5.195	0.1665
MAP	160911	0.28	68	10.97	0.2437	010.60	160911	0.28	50	11.04	0.0200	0%	10.97	0.2468
Grade 32-0-10	161111	1.45	75	32.34	0.3510	010.60	161111	1.47	55	32.86	0.4100	1%	32.44	0.2845
MAP plus S	161211	0.34	72	12.06	0.2047	010.60	161211	0.33	57	12.13	0.2400	0%	12.07	0.1876

magruder fertilizer
check sample program
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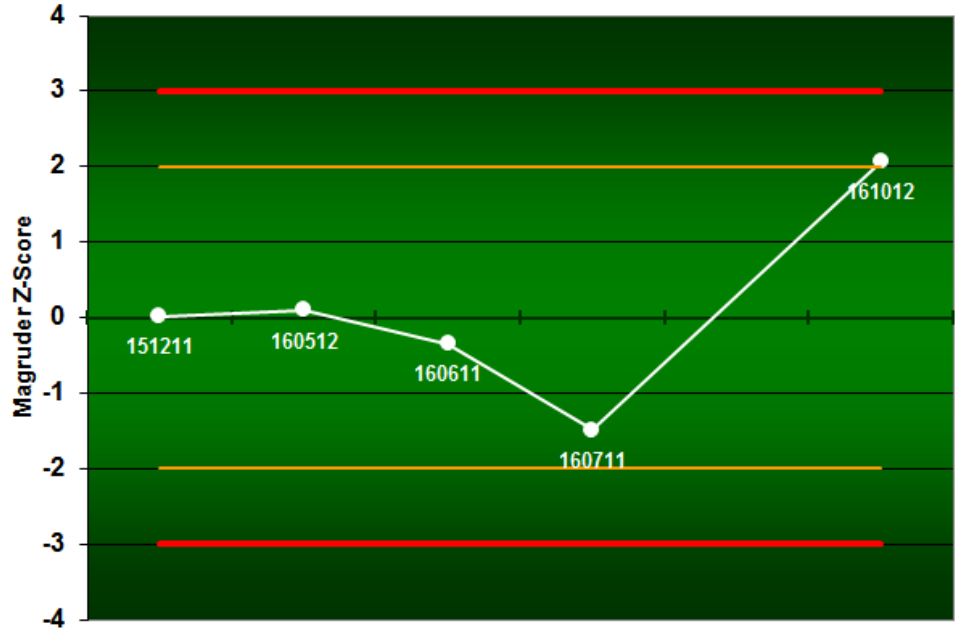
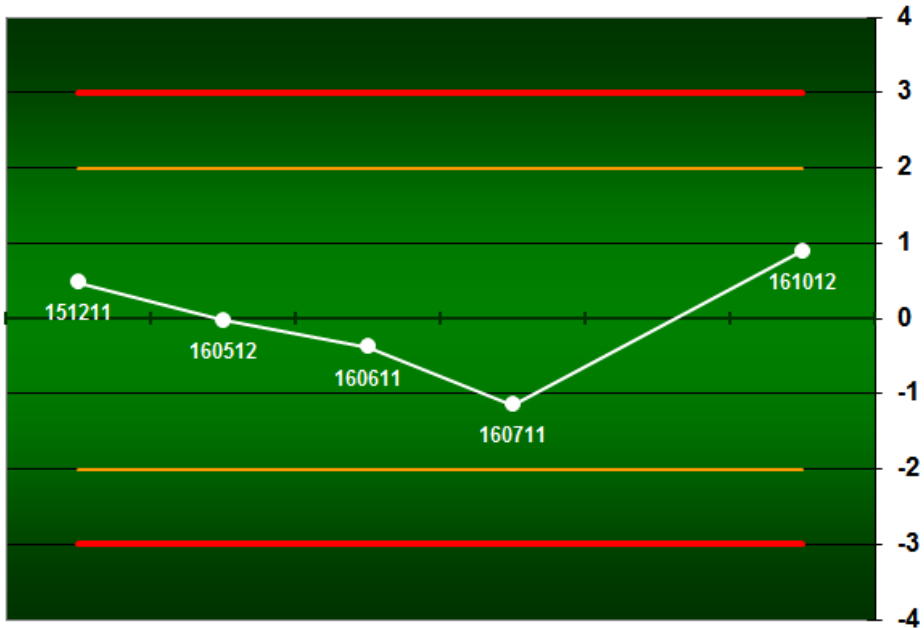
Magruder Check Sample Z Control Charts For Lab

Analyte Code 325 | Chart 33 of 33 | Method Code 325.30

Water Soluble Zinc (%)



Water Soluble Zinc , ICP (%)



Tap To Scroll Through Charts

146.00
148.01
148.07
151.30
165.30
171.99
181.30
190.00
191.30
221.30
241.30
251.30
261.32
271.30
289.30
291.30
321.30
325.30

Analyte Code and Name						Method Code and Name							
325 Water Soluble Zinc (%)						325.30 Water Soluble Zinc , ICP (%)							
Number of Samples		6		Analyte Values		Your				Lab Data		Threshold	Method Values	
Sample Name & Code		Z	# Labs	Rob Mean	Rob SD	Method	Code	Z	# Labs	Value	Range	%RSD	Rob Mean	Rob SD
Grade 10-10-10	151211	0.02	7	0.2330	0.1290	325.30	151211	0.47	6	0.2350	0.0500	10%	0.1951	0.0840
Micros	160512	0.10	10	12.68	2.903	325.30	160512	-0.03	7	12.99	0.0700	0%	13.10	3.703
WS 25-5-15	160611	-0.35	5	0.0756	0.0204	325.30	160611	-0.38	4	0.0685	0.0030	6%	0.0774	0.0231
12-12-12 Micros	160711	-1.49	4	1.758	0.4184	325.30	160711	-1.15	3	1.135	0.0300	16%	1.668	0.4636
Liquid Organic	160811		1			325.30	160811		1	0.0670	0.0020			
ZnSO4	161012	2.07	13	31.41	1.744	325.3	161012	0.89	9	35.02	0.3200	0.0429644	32.25	2.865

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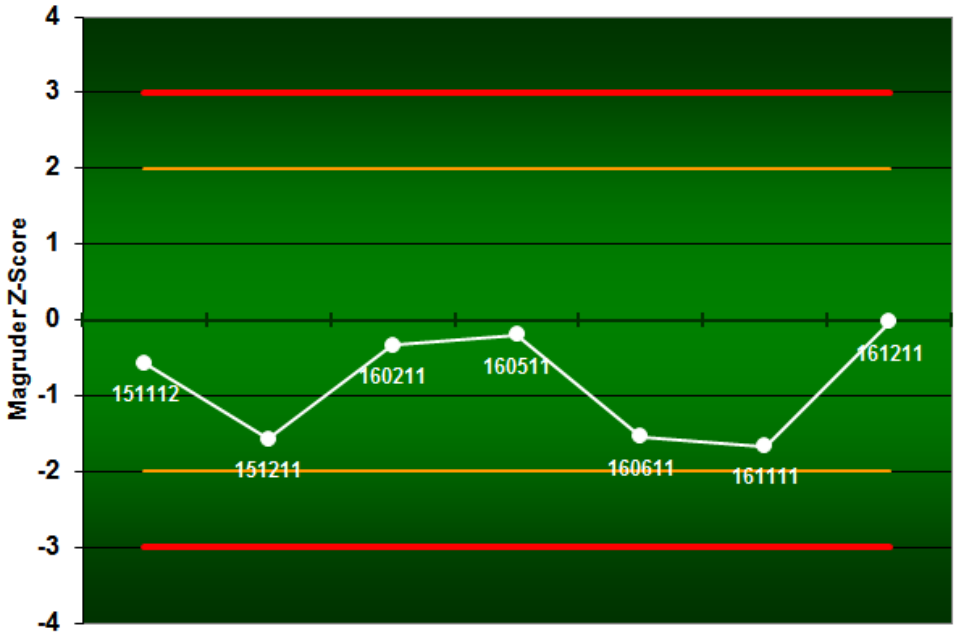
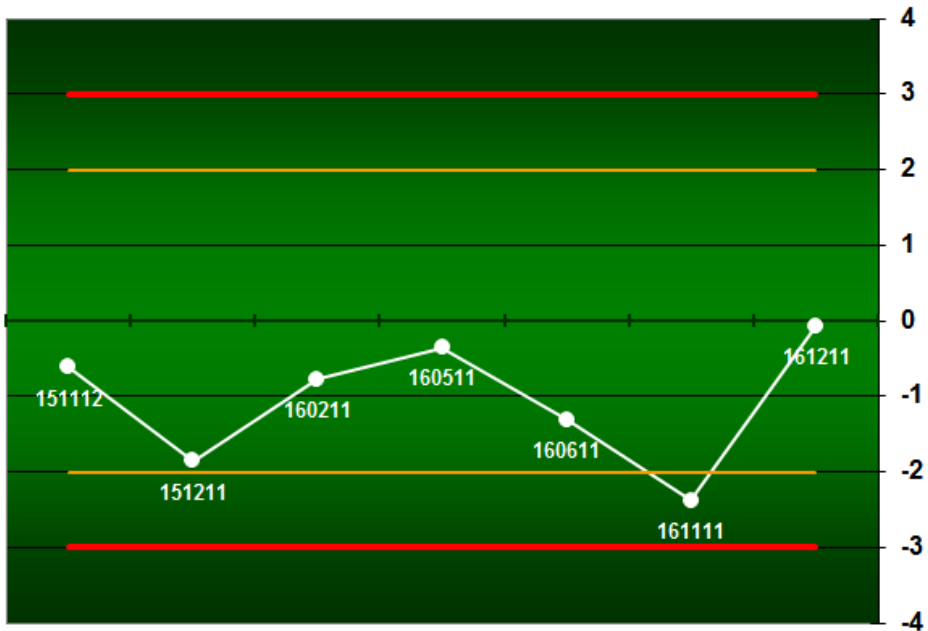
Magruder Check Sample Z Control Charts For Lab

Analyte Code 010 | Chart 1 of 19 | Method Code 010.60

Total Nitrogen (%)



Total Nitrogen, Combustion (%)



Tap To Scroll Through Charts

010.60
041.60
050.62
121.33
148.01
148.07
151.33
165.00
181.33
191.33
202.33
221.33
241.33
251.33
261.35
289.33
291.33
301.33

Analyte Code and Name		Method Code and Name	
010	Total Nitrogen (%)	010.60	Total Nitrogen, Combustion (%)

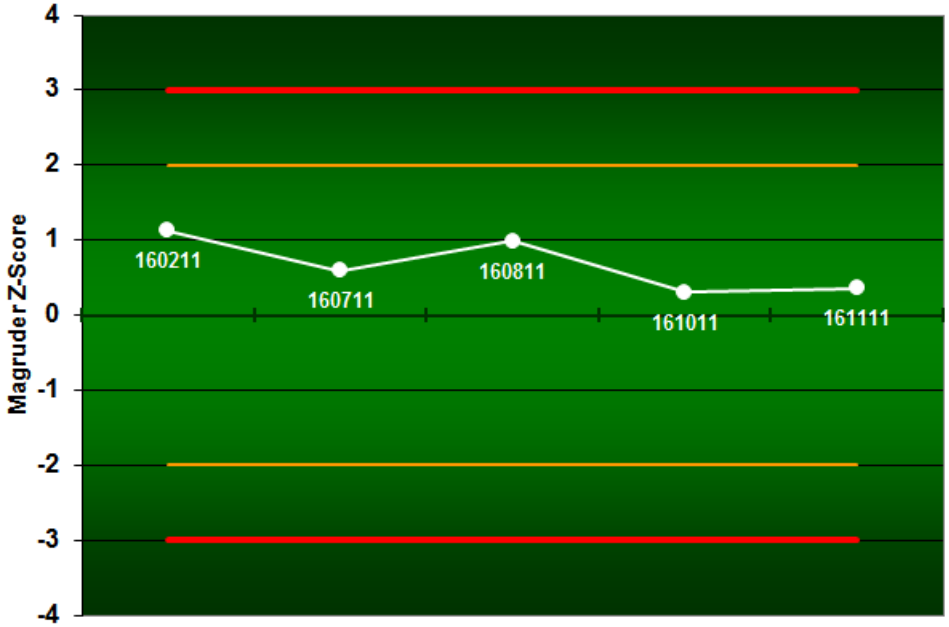
Number of Samples	7		Analyte Values		Your				Lab Data		Threshold	Method Values	
Sample Name & Code		Z	# Labs	Rob Mean	Rob SD	Method	Code	Z	# Labs	Value	Range	%RSD	Rob Mean	Rob SD
MAP	151112	-0.57	73	11.20	0.1676	010.60	151112	-0.62	59	11.10	0.0800	0%	11.20	0.1697
Grade 10-10-10	151211	-1.57	78	9.959	0.1363	010.60	151211	-1.86	62	9.745	0.3500	1%	9.977	0.1250
Grade 24-25-4	160211	-0.34	77	24.56	0.4061	010.60	160211	-0.77	54	24.42	0.3600	1%	24.68	0.3303
Urea	160511	-0.20	77	46.18	0.3530	010.60	160511	-0.36	54	46.11	0.0900	0%	46.23	0.3635
WS 25-5-15	160611	-1.54	62	24.23	1.702	010.60	160611	-1.31	46	21.60*	0.0200	5%	23.90	1.747
Grade 32-0-10	161111	-1.67	75	32.34	0.3510	010.60	161111	-2.38	55	31.76	0.0400	1%	32.44	0.2845
MAP plus S	161211	-0.03	72	12.06	0.2047	010.60	161211	-0.08	57	12.05	0.1010	0%	12.07	0.1876

magruder fertilizer
check sample program
STRIVING FOR EXCELLENCE IN ANALYSIS

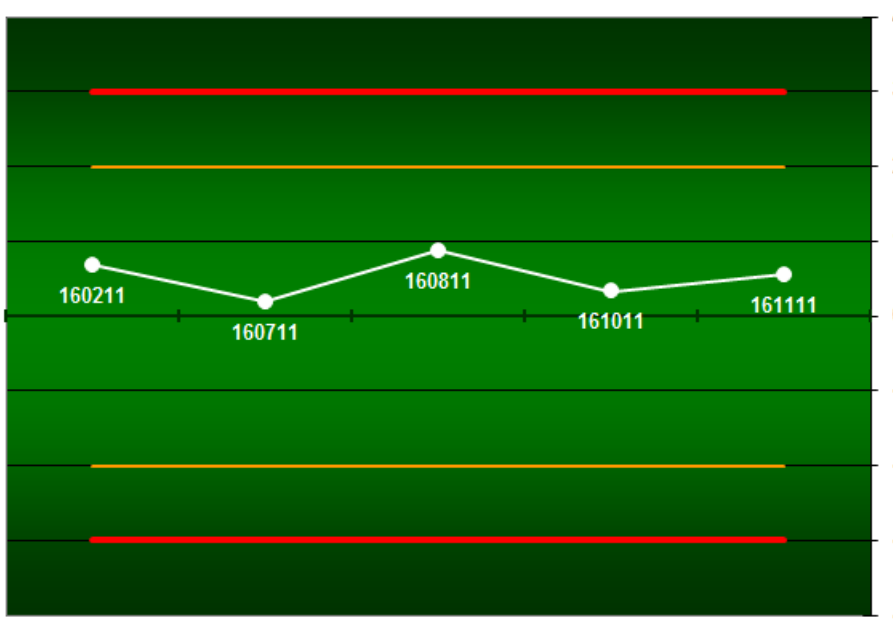
Magruder Check Sample Z Control Charts For Lab

Analyte Code 050 | Chart 8 of 27 | Method Code 050.52

Soluble Potassium as K2O (%)



Soluble Potassium as K2O, ICP (%)



Tap To Scroll Through Charts

003.10
010.60
020.10
041.10
041.50
041.51
050.00
050.52
101.33
121.33
148.07
151.33
165.30
181.33
190.00
191.33
202.33
221.33

	Analyte Code and Name						Method Code and Name							
	050 Soluble Potassium as K2O (%)						050.52 Soluble Potassium as K2O, ICP (%)							
Number of Samples	5			Analyte Values		Your				Lab Data		Threshold	Method Values	
Sample Name & Code		Z	# Labs	Rob Mean	Rob SD	Method	Code	Z	# Labs	Value	Range	%RSD	Rob Mean	Rob SD
Grade 24-25-4	160211	1.13	80	4.131	0.2610	050.52	160211	0.68	8	4.425	0.1100	2%	4.251	0.2417
12-12-12 Micros	160711	0.59	85	12.26	0.3697	050.52	160711	0.19	8	12.48	0.0200	0%	12.43	0.2640
Liquid Organic	160811	0.99	76	3.963	0.2257	050.52	160811	0.87	8	4.185	0.0300	2%	4.018	0.1758
MOP	161011	0.31	77	60.62	1.130	050.52	161011	0.33	7	60.97	0.1100	0%	60.37	1.630
Grade 32-0-10	161111	0.36	82	10.13	0.3286	050.52	161111	0.55	9	10.25	0.0100	1%	10.08	0.2748

magruder fertilizer
check sample program
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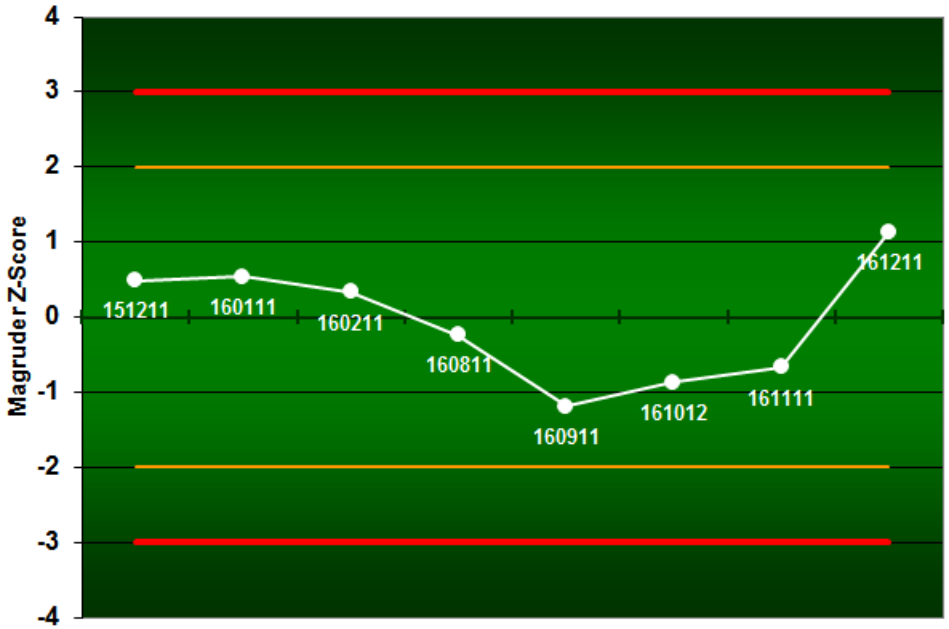
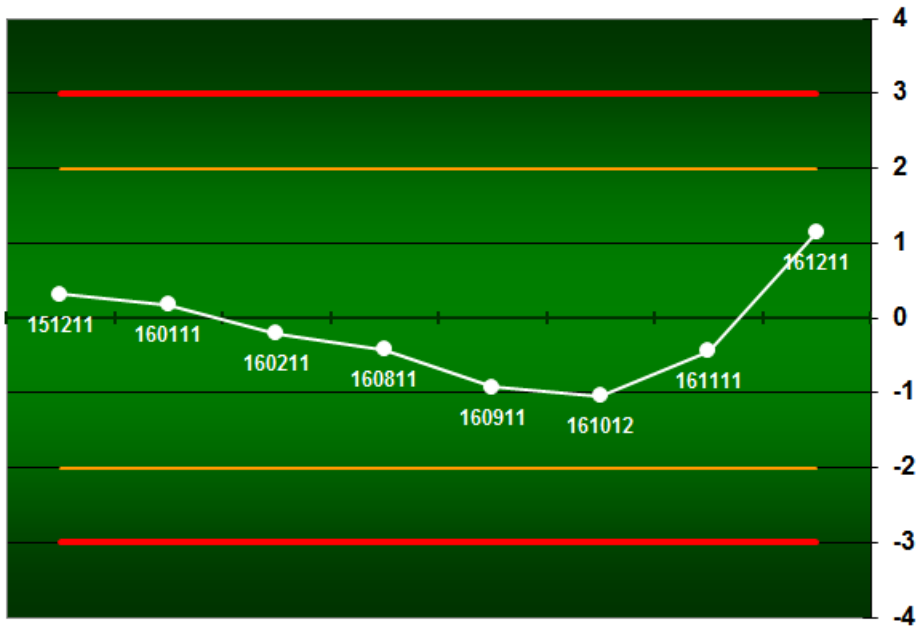
Magruder Check Sample Z Control Charts For Lab

Analyte Code 148 | Chart 11 of 27 | Method Code 148.07

Total Sulfur (%)



Total Sulfur, ICP, test portion as in 2006.03... (%)



Tap To Scroll Through Charts

003.10
010.60
020.10
041.10
041.50
041.51
050.00
050.52
101.33
121.33
148.07
151.33
165.30
181.33
190.00
191.33
202.33
221.33

Analyte Code and Name		Method Code and Name	
148	Total Sulfur (%)	148.07	Total Sulfur, ICP, test portion as in 2006.03... (%)

Number of Samples		8		Analyte Values		Your				Lab Data		Threshold	Method Values	
Sample Name & Code		Z	# Labs	Rob Mean	Rob SD	Method	Code	Z	# Labs	Value	Range	%RSD	Rob Mean	Rob SD
Grade 10-10-10	151211	0.48	42	12.00	1.083	148.07	151211	0.32	11	12.52	0.1083	1%	12.23	0.9113
Micro Mix	160111	0.53	7	0.2010	0.1211	148.07	160111	0.18	3	0.2702	0.0101	1%	0.2627	0.0415
Grade 24-25-4	160211	0.33	13	0.8671	0.0782	148.07	160211	-0.21	6	0.8930	0.0011	1%	0.9041	0.0496
Liquid Organic	160811	-0.24	12	0.5508	0.0854	148.07	160811	-0.42	6	0.5306	0.0454	3%	0.5685	0.0805
MAP	160911	-1.19	9	1.275	0.0668	148.07	160911	-0.93	4	1.188	0.0097	2%	1.250	0.0666
ZnSO4	161012	-0.87	46	16.22	0.9040	148.07	161012	-1.04	11	15.44	0.0900	5%	17.30	1.679
Grade 32-0-10	161111	-0.67	9	7.116	0.3816	148.07	161111	-0.44	5	6.839	0.0476	1%	7.024	0.4191
MAP plus S	161211	1.13	40	9.492	0.9896	148.07	161211	1.14	11	10.61	0.0306	7%	9.344	1.106

❖Collective Lab Performance

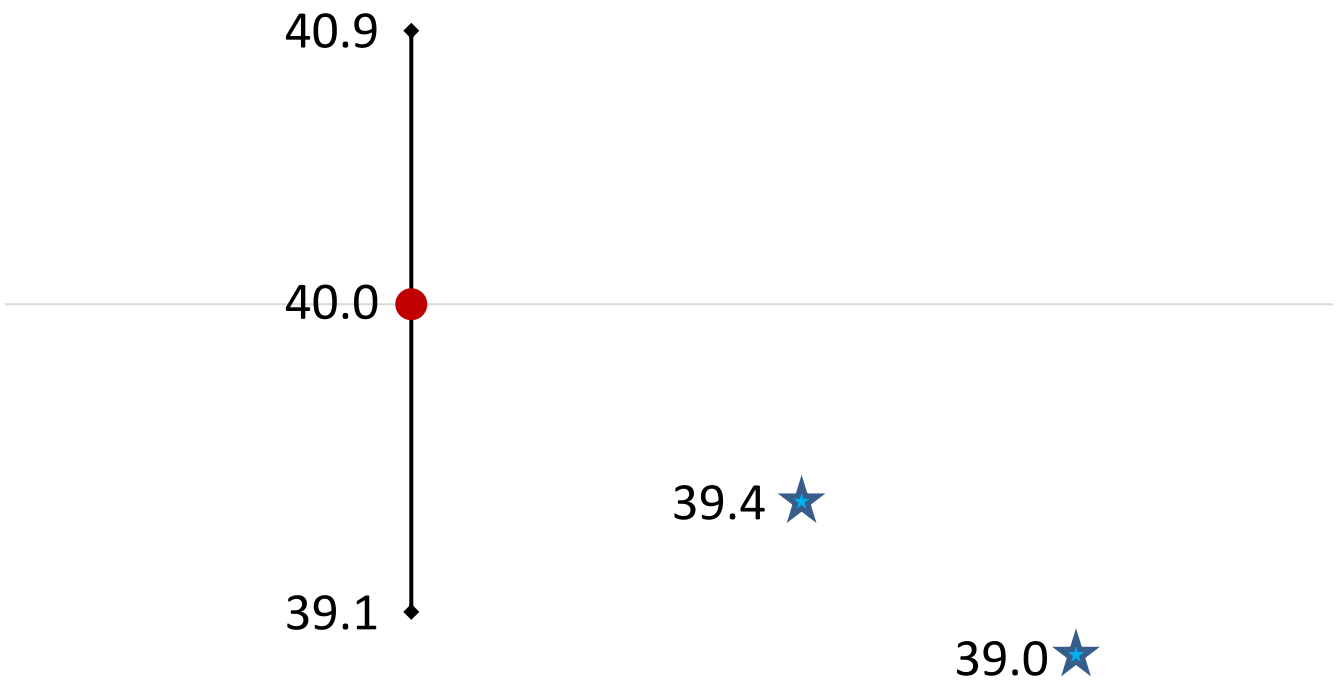
AAPFCO Investigational Allowances

(a) A commercial fertilizer shall be deemed deficient if the analysis of any nutrient is below the guarantee by an amount exceeding the values in the following schedule, or if the overall index value of the fertilizer is below 98%. Note: For these investigational allowances to be applicable, the recommended AOAC International procedures for obtaining samples, preparation and analysis must be used. These are described in Official Methods of Analysis of the Association of Official Analytical Chemists, 13th Edition, 1980, and in succeeding issues of the Journal of the Association of Official Analytical Chemists. In evaluating replicate data, Table 19, page 935, Journal of the Association of Official Analytical Chemists, Volume 49, No. 5, October, 1966, should be followed.

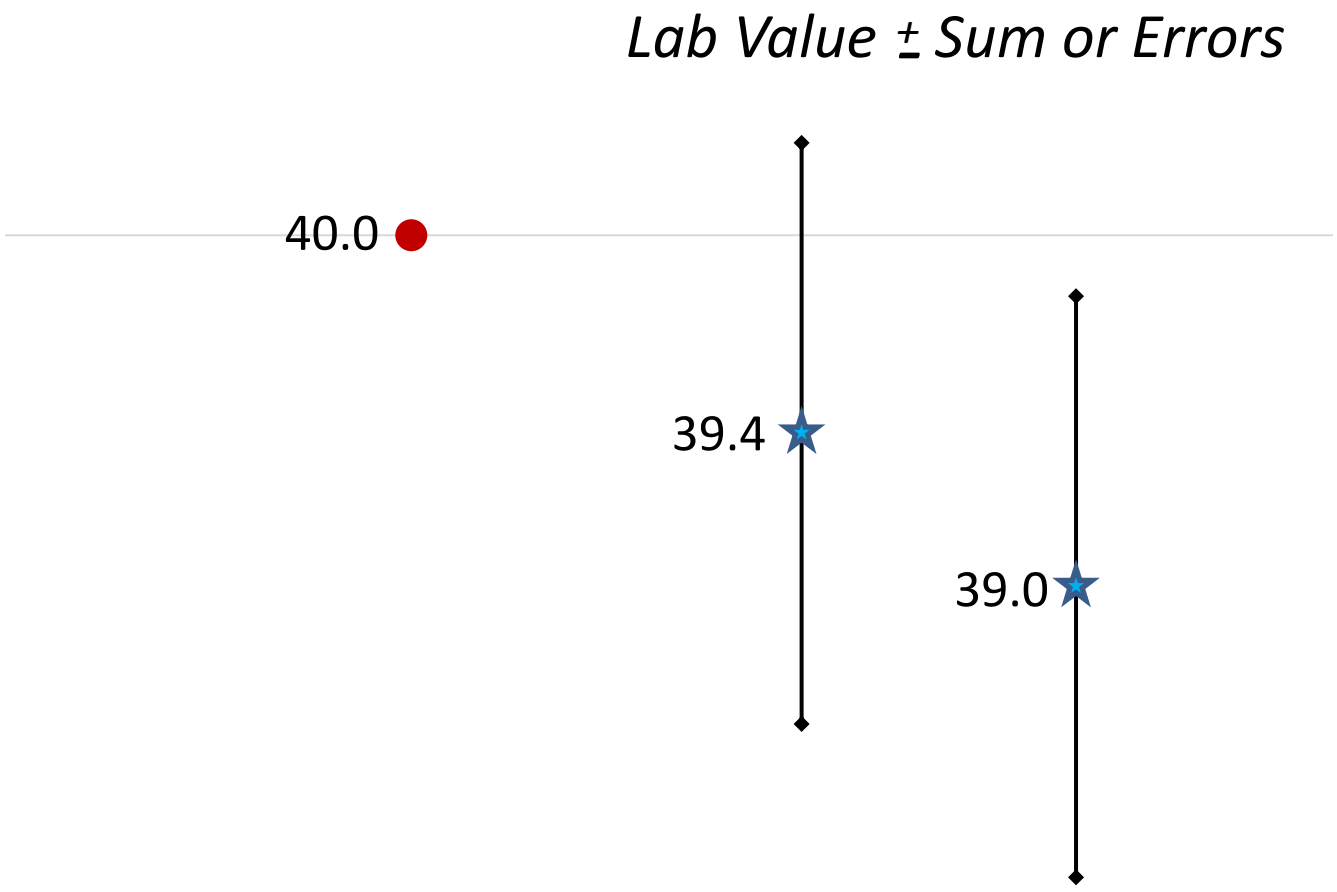
Search

Guarantee, percent	Nitrogen (N)	Avail. Phosphate (P_2O_5)	Sol. Potash (K_2O)
	Investigational Allowance, percent		
04 or less	0.49	0.67	0.41
5	0.51	0.67	0.43
6	0.52	0.67	0.47
7	0.54	0.68	0.53
8	0.55	0.68	0.60
9	0.57	0.68	0.65
10	0.58	0.69	0.70
12	0.61	0.69	0.79
14	0.63	0.70	0.87
16	0.67	0.70	0.94
18	0.70	0.71	1.01
20	0.73	0.72	1.08
22	0.75	0.72	1.15
24	0.78	0.73	1.21
26	0.81	0.73	1.27
28	0.83	0.74	1.33

Guarantee ± Investigational Allowance



Guarantee



S^2_{samp}

S^2_{prep}

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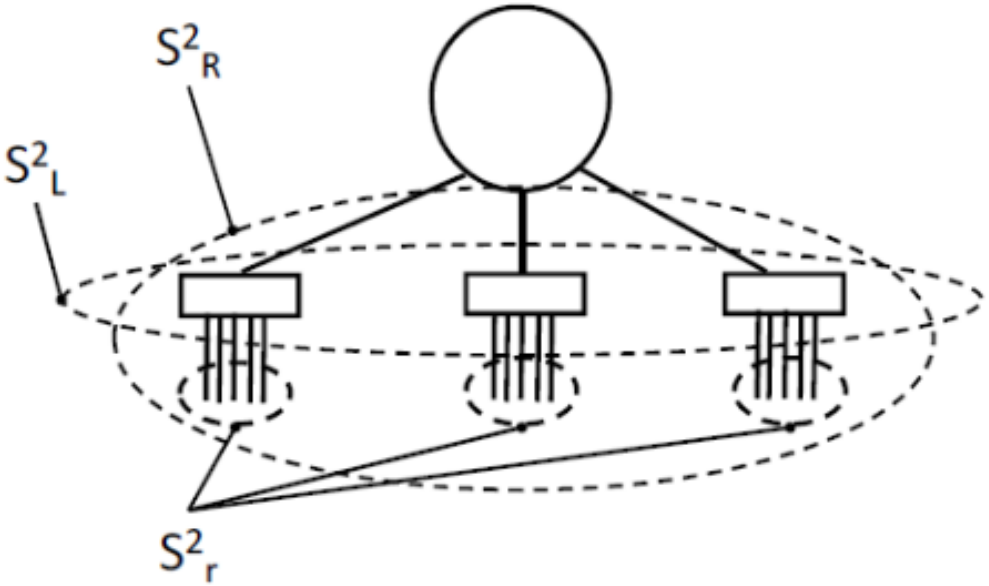
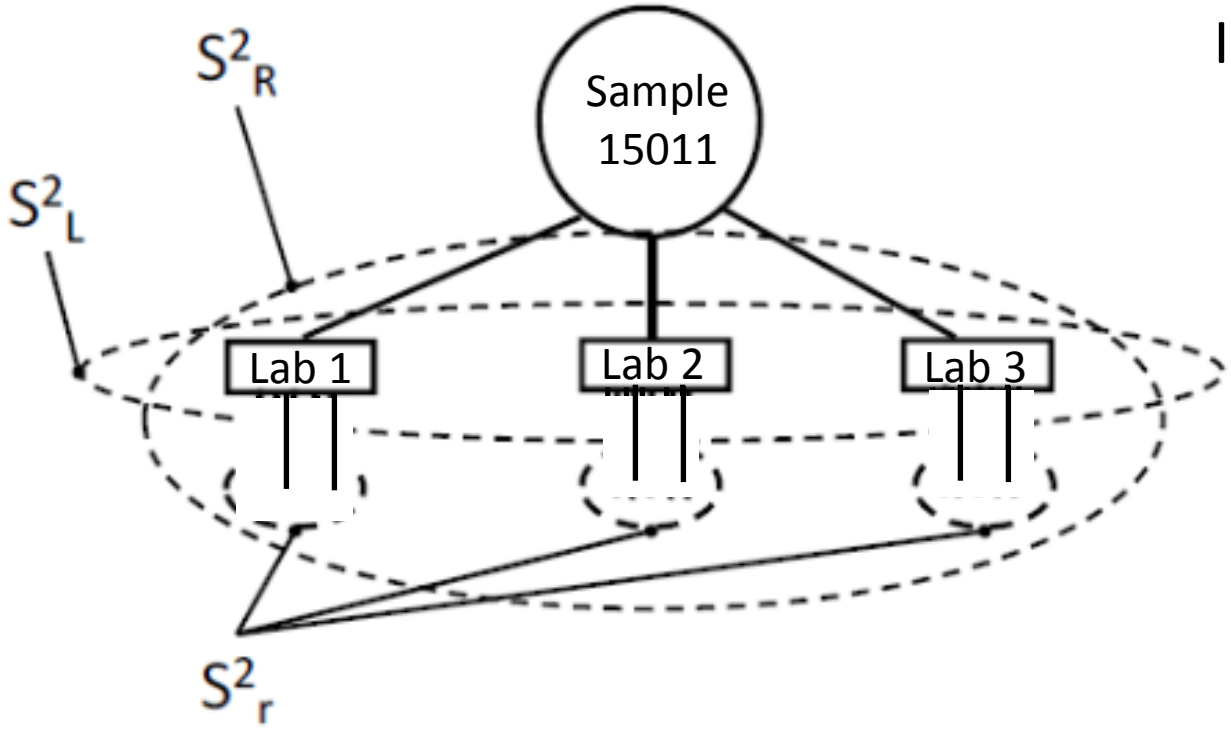


Inter- and Intra-Lab Variance for Analyte



Inter- and Intra-Lab Variance for Analyte

Check Sample Program – Data Reporting

Samples | Reports | User Admin | Information | Log Out

User: [redacted] Lab #: [redacted]

2016 Regular Check Sample Program
161211 - MAP plus S

Reports

Analyte All Tests Report
Method All Tests Report
Analyte Statistical Summary
Individual Method Performance Summary

Report Cards

Method Report Cards

Analyte Report Cards

STRIVING FOR EXCELLENCE IN ANALYSIS

Analyte Proficiency From All Labs
Sample # 161211
MAP plus S

Statistical Summary

 # Analytes: 33
 # Labs Reporting: 87
Issue Date : 01/31/2017

Analyte Code	Analyte	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	IA %RSD	Average Range (R-bar)	Horwitz %RSD
001	Ammoniacal Nitrogen (%)	27	25	11.91	0.3637	11.88		0.3162	0.0790	2.66%		0.0610	2.76%
009	Ammoniacal Plus Nitrate Nitrogen (%)	4	4	11.91	0.2684	11.91		0.2684	0.1678	2.25%		0.1275	2.75%
010	Total Nitrogen (12%)	75	72	11.90	1.356	12.06	0.6106	0.2047	0.0302	1.70%	2.53%	0.0901	2.75%
020	Total Phosphorus as P2O5 (%)	51	50	42.15	1.917	42.07		1.075	0.1901	2.56%		0.4020	2.28%
030	Citrate Insoluble Phosphorus as P2O5 (%)	2	2	0.2153	0.1206								
040	Indirect Available Phosphorus as P2O5 (40%)	3	3	42.21	0.3237	42.21	0.9332	0.3237	0.2336	0.77%	1.11%	0.1013	2.28%
041	Direct Available Phosphorus as P2O5 (40%)	44	43	41.36	0.9336	41.40	0.9210	0.9492	0.1809	2.29%	1.11%	0.2804	2.28%
042	Water Soluble Orthophosphate as P2O5 (%)	1		38.29									
048	Water Soluble Phosphorus as P2O5 (%)	12	12	36.60	5.854	37.80		0.8670	0.3129	2.29%		0.3543	2.32%
050	Soluble Potassium as K2O (%)	13	9	0.1671	0.1356	0.1280		0.0272	0.0113	21.25%		0.0097	5.45%
060	Water (Free) (%)	5	5	0.5687	0.1956	0.5687		0.1956	0.1093	34.39%		0.0417	4.35%
101	Acid Soluble Calcium (%)	15	14	0.2190	0.0504	0.2201		0.0532	0.0178	24.16%		0.0050	5.02%
121	Acid Soluble Magnesium (%)	15	15	0.5109	0.0746	0.5073		0.0594	0.0192	11.71%		0.0151	4.43%
143	Elemental Sulfur (%)	7	7	6.288	2.456	6.288		2.785	1.316	44.29%		0.1043	3.03%
145	Sulfate Sulfur, HCl soluble (%)	7	6	5.448	0.9045	5.215		0.4235	0.2161	8.12%		0.0650	3.12%
146	Total Sulfur in Liquid (%)	1		9.550									
148	Total Sulfur (10%)	42	40	8.923	2.015	9.492	0.6746	0.9896	0.1956	10.43%	3.55%	0.1474	2.85%
149	Sulfur - HNO3 soluble (%)	5	5	7.441	2.215	7.441		2.215	1.238	29.77%		0.1562	2.96%
151	Acid Soluble Arsenic (ppm)	14	14	10.69	1.681	10.73		1.830	0.6113	17.06%		0.6624	11.19%
165	Acid Soluble Boron (%)	9	8	0.0097	0.0070	0.0095		0.0074	0.0033	78.31%		0.0005	8.06%
181	Acid Soluble Cadmium (ppm)	19	17	2.468	0.3831	2.439		0.3391	0.1028	13.90%		0.0565	13.99%
191	Acid Soluble Chromium (ppm)	18	17	67.25	9.984	68.68		7.380	2.237	10.74%		1.807	8.46%
202	Acid Soluble Cobalt (ppm)	14	12	2.332	0.8458	2.357		0.6741	0.2432	28.60%		0.1295	14.06%
221	Acid Soluble Copper (%)	12	6	0.8519	2.084	0.0022		0.0029	0.0015	134.32%		0.0051	10.05%
241	Acid Soluble Iron (%)	17	17	0.7936	0.2149	0.8362		0.0696	0.0211	8.32%		0.0233	4.11%
251	Acid Soluble Lead (ppm)	11	8	1.697	1.019	1.627		0.9905	0.4377	60.86%		0.1306	14.87%
261	Acid Soluble Manganese (%)	16	15	0.0301	0.0026	0.0299		0.0011	0.0004	3.71%		0.0004	6.78%
281	Acid Soluble Mercury (ppm)	4	4	10.53	20.92	10.53		20.92	13.07	198.58%		0.0472	11.22%
289	Acid Soluble Molybdenum (ppm)	18	17	10.98	1.691	11.02		1.830	0.5548	16.60%		0.4608	11.15%
291	Acid Soluble Nickel (ppm)	20	19	10.59	1.102	10.75		0.7227	0.2073	6.72%		0.3550	11.19%
301	Acid Soluble Selenium (ppm)	7	5	1.064	1.686	1.064		1.686	0.9424	158.39%		0.1772	15.85%

STRIVING FOR EXCELLENCE IN ANALYSIS

nalyte Proficiency From All Labs
ample # 161211
IAP plus S

Statistical Summary

 # Analytes: 33
 # Labs Reporting: 87
Issue Date : 01/31/2017

Analyte Code	Analyte	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	IA %RSD	Average Range (R-bar)	Horwitz %RSD
010	Total Nitrogen (12%)	75	72	11.90	1.356	12.06	0.6106	0.2047	0.0302	1.70%	2.53%	0.0901	2.75%
041	Direct Available Phosphorus as P2O5 (40%)	44	43	41.36	0.9336	41.40	0.9210	0.9492	0.1809	2.29%	1.11%	0.2804	2.28%
148	Total Sulfur (10%)	42	40	8.923	2.015	9.492	0.6746	0.9896	0.1956	10.43%	3.55%	0.1474	2.85%

Check Sample Program – Data Reporting

Samples | Reports | User Admin | Information | Log Out

User: [redacted] Lab #: [redacted]

2016 Regular Check Sample Program
161211 - MAP plus S

Reports

Analyte All Tests Report
Method All Tests Report
Analyte Statistical Summary
Individual Method Performance Summary

Report Cards

Method Report Cards

Analyte Report Cards

010	Total Nitrogen (12%)	0402	1.004*	0.0020	12.06	0.2047	0.0901	72	-54.01	010.60	0
010	Total Nitrogen (12%)	0526	10.20*	0.0000	12.06	0.2047	0.0901	72	-9.09	010.99	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
010	Total Nitrogen (12%)	0521	10.83*	0.0000	12.06	0.2047	0.0901	72	-6.03	010.60	0
010	Total Nitrogen (12%)	0309	11.61	0.0400	12.06	0.2047	0.0901	72	-2.20	010.11	0
010	Total Nitrogen (12%)	0034	11.64	0.0000	12.06	0.2047	0.0901	72	-2.05	010.60	0
010	Total Nitrogen (12%)	0500	11.67	0.0500	12.06	0.2047	0.0901	72	-1.93	010.11	0
010	Total Nitrogen (12%)	0527	11.67	0.1200	12.06	0.2047	0.0901	72	-1.90	010.60	0
010	Total Nitrogen (12%)	0291	11.73	0.0000	12.06	0.2047	0.0901	72	-1.61	010.60	0
010	Total Nitrogen (12%)	0368	11.77	0.1560	12.06	0.2047	0.0901	72	-1.41	010.60	0
010	Total Nitrogen (12%)	0007	11.80	0.2000	12.06	0.2047	0.0901	72	-1.27	010.60	0
010	Total Nitrogen (12%)	0354	11.82	0.0890	12.06	0.2047	0.0901	72	-1.16	010.60	0
010	Total Nitrogen (12%)	0041	11.84	0.0100	12.06	0.2047	0.0901	72	-1.10	010.60	0
010	Total Nitrogen (12%)	0356	11.84	0.2000	12.06	0.2047	0.0901	72	-1.07	010.60	0
010	Total Nitrogen (12%)	0472	11.89	0.0100	12.06	0.2047	0.0901	72	-0.85	010.60	0
010	Total Nitrogen (12%)	0487	11.90	0.0000	12.06	0.2047	0.0901	72	-0.78	010.99	0
010	Total Nitrogen (12%)	0095	11.91	0.0700	12.06	0.2047	0.0901	72	-0.76	010.60	0
010	Total Nitrogen (12%)	0519	11.91	0.0200	12.06	0.2047	0.0901	72	-0.73	010.99	0
010	Total Nitrogen (12%)	0489	11.93	0.0600	12.06	0.2047	0.0901	72	-0.63	010.60	0
010	Total Nitrogen (12%)	0027	11.95	0.3000	12.06	0.2047	0.0901	72	-0.54	010.60	0
010	Total Nitrogen (12%)	0451	11.96	0.1600	12.06	0.2047	0.0901	72	-0.49	010.60	0
010	Total Nitrogen (12%)	0406	11.98	0.4100	12.06	0.2047	0.0901	72	-0.41	010.60	0
010	Total Nitrogen (12%)	0420	11.98	0.1700	12.06	0.2047	0.0901	72	-0.41	010.99	0
010	Total Nitrogen (12%)	0211	11.99	0.0500	12.06	0.2047	0.0901	72	-0.37	010.11	0
010	Total Nitrogen (12%)	0043	11.99	0.0100	12.06	0.2047	0.0901	72	-0.37	010.60	0
010	Total Nitrogen (12%)	0042	12.00	0.0000	12.06	0.2047	0.0901	72	-0.29	010.60	0
010	Total Nitrogen (12%)	0523	12.00	0.0000	12.06	0.2047	0.0901	72	-0.29	010.60	0
010	Total Nitrogen (12%)	0485	12.01	0.1960	12.06	0.2047	0.0901	72	-0.26	010.60	0
010	Total Nitrogen (12%)	0486	12.01	0.2200	12.06	0.2047	0.0901	72	-0.24	010.60	0
010	Total Nitrogen (12%)	0220	12.02	0.0600	12.06	0.2047	0.0901	72	-0.19	010.17	0
010	Total Nitrogen (12%)	0421	12.03	0.0500	12.06	0.2047	0.0901	72	-0.17	010.60	0
010	Total Nitrogen (12%)	0073	12.03	0.2000	12.06	0.2047	0.0901	72	-0.15	010.60	0
010	Total Nitrogen (12%)	0023	12.04	0.0050	12.06	0.2047	0.0901	72	-0.09	010.60	0
010	Total Nitrogen (12%)	0230	12.05	0.1000	12.06	0.2047	0.0901	72	-0.05	010.60	0
010	Total Nitrogen (12%)	0037	12.05	0.1010	12.06	0.2047	0.0901	72	-0.03	010.60	0
010	Total Nitrogen (12%)	0090	12.07	0.1400	12.06	0.2047	0.0901	72	0.05	010.11	0
010	Total Nitrogen (12%)	0525	12.08	0.3580	12.06	0.2047	0.0901	72	0.07	010.60	0
010	Total Nitrogen (12%)	0360	12.10	0.0500	12.06	0.2047	0.0901	72	0.17	010.60	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
041	Direct Available Phosphorus as P2O5 (40%)	0472	38.51*	0.1600	41.40	0.9492	0.2804	43	-3.04	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0522	39.85*	0.5000	41.40	0.9492	0.2804	43	-1.63	041.21	0
041	Direct Available Phosphorus as P2O5 (40%)	0007	39.85*	1.300	41.40	0.9492	0.2804	43	-1.63	041.50	0
041	Direct Available Phosphorus as P2O5 (40%)	0354	40.01*	0.2050	41.40	0.9492	0.2804	43	-1.46	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0518	40.07*	0.0600	41.40	0.9492	0.2804	43	-1.40	041.99	0
041	Direct Available Phosphorus as P2O5 (40%)	0519	40.13*	0.0900	41.40	0.9492	0.2804	43	-1.34	041.99	0
041	Direct Available Phosphorus as P2O5 (40%)	0526	40.46*	0.0000	41.40	0.9492	0.2804	43	-0.99	041.99	0
041	Direct Available Phosphorus as P2O5 (40%)	0513	40.50	0.2800	41.40	0.9492	0.2804	43	-0.95	041.11	0
041	Direct Available Phosphorus as P2O5 (40%)	0029	40.56	0.3000	41.40	0.9492	0.2804	43	-0.88	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0360	40.64	0.2600	41.40	0.9492	0.2804	43	-0.80	041.51	0
041	Direct Available Phosphorus as P2O5 (40%)	0291	40.68	0.0100	41.40	0.9492	0.2804	43	-0.76	041.50	0
041	Direct Available Phosphorus as P2O5 (40%)	0368	40.82	0.5000	41.40	0.9492	0.2804	43	-0.61	041.50	0
041	Direct Available Phosphorus as P2O5 (40%)	0073	40.95	0.5500	41.40	0.9492	0.2804	43	-0.48	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0117	41.06	0.0400	41.40	0.9492	0.2804	43	-0.36	041.50	0
041	Direct Available Phosphorus as P2O5 (40%)	0486	41.08	0.2500	41.40	0.9492	0.2804	43	-0.34	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0037	41.10	0.0970	41.40	0.9492	0.2804	43	-0.32	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0452	41.14	0.0800	41.40	0.9492	0.2804	43	-0.27	041.50	0
041	Direct Available Phosphorus as P2O5 (40%)	0494	41.31	0.0600	41.40	0.9492	0.2804	43	-0.09	041.51	0
041	Direct Available Phosphorus as P2O5 (40%)	0325	41.35	1.300	41.40	0.9492	0.2804	43	-0.05	041.50	0
041	Direct Available Phosphorus as P2O5 (40%)	0377	41.40	0.0300	41.40	0.9492	0.2804	43	0.00	041.51	0
041	Direct Available Phosphorus as P2O5 (40%)	0231	41.41	0.0500	41.40	0.9492	0.2804	43	0.01	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0177	41.55	0.3733	41.40	0.9492	0.2804	43	0.16	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0230	41.55	0.3000	41.40	0.9492	0.2804	43	0.16	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0055	41.60	0.4000	41.40	0.9492	0.2804	43	0.21	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0023	41.62	0.7800	41.40	0.9492	0.2804	43	0.23	041.51	0
041	Direct Available Phosphorus as P2O5 (40%)	0185	41.67	0.3700	41.40	0.9492	0.2804	43	0.28	041.11	0
041	Direct Available Phosphorus as P2O5 (40%)	0041	41.72	0.3000	41.40	0.9492	0.2804	43	0.34	041.10	0
041	Direct Available Phosphorus as P2O5 (40%)	0177	41.74	0.0902	41.40	0.9492	0.2804	43	0.36	041.10	0
041	Direct Available Phosphorus as P2O5 (40%)	0072	41.86	0.2440	41.40	0.9492	0.2804	43	0.49	041.10	0
041	Direct Available Phosphorus as P2O5 (40%)	0220	41.88	0.0100	41.40	0.9492	0.2804	43	0.50	041.11	0
041	Direct Available Phosphorus as P2O5 (40%)	0105	41.93	0.3900	41.40	0.9492	0.2804	43	0.56	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0043	41.94	0.0500	41.40	0.9492	0.2804	43	0.57	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0136	41.97	0.1100	41.40	0.9492	0.2804	43	0.60	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0072	41.97	0.0800	41.40	0.9492	0.2804	43	0.60	041.50	0
041	Direct Available Phosphorus as P2O5 (40%)	0105	42.11	0.2100	41.40	0.9492	0.2804	43	0.75	041.99	0
041	Direct Available Phosphorus as P2O5 (40%)	0055	42.18	0.1400	41.40	0.9492	0.2804	43	0.82	041.10	0
041	Direct Available Phosphorus as P2O5 (40%)	0040	42.40	0.0000	41.40	0.9492	0.2804	43	1.06	041.10	0
041	Direct Available Phosphorus as P2O5 (40%)	0034	42.46	0.1100	41.40	0.9492	0.2804	43	1.12	041.60	0
041	Direct Available Phosphorus as P2O5 (40%)	0506	42.60	0.8000	41.40	0.9492	0.2804	43	1.27	041.99	0
041	Direct Available Phosphorus as P2O5 (40%)	0105	42.66	0.4700	41.40	0.9492	0.2804	43	1.32	041.10	0
041	Direct Available Phosphorus as P2O5 (40%)	0494	42.66	0.4400	41.40	0.9492	0.2804	43	1.33	041.10	0
041	Direct Available Phosphorus as P2O5 (40%)	0485	42.68	0.2470	41.40	0.9492	0.2804	43	1.35	041.11	0
041	Direct Available Phosphorus as P2O5 (40%)	0105	42.89	0.0200	41.40	0.9492	0.2804	43	1.57	041.11	0

148	Total Sulfur (10%)	0354	4.178*	0.0050	9.492	0.9896	0.1474	40	-5.37	148.99	0
148	Total Sulfur (10%)	0394	4.500*	0.0800	9.492	0.9896	0.1474	40	-5.04	148.04	0
148	Total Sulfur (10%)	0444	4.670*	0.1000	9.492	0.9896	0.1474	40	-4.87	148.07	0
148	Total Sulfur (10%)	0096	4.722*	0.1430	9.492	0.9896	0.1474	40	-4.82	148.99	0
148	Total Sulfur (10%)	0444	4.845*	0.0100	9.492	0.9896	0.1474	40	-4.70	148.01	0
148	Total Sulfur (10%)	0324	5.110*	0.0000	9.492	0.9896	0.1474	40	-4.43	148.01	0
148	Total Sulfur (10%)	0230	5.450*	0.5600	9.492	0.9896	0.1474	40	-4.08	148.01	0
148	Total Sulfur (10%)	0422	7.805*	0.0900	9.492	0.9896	0.1474	40	-1.70	148.07	0
148	Total Sulfur (10%)	0055	8.705*	0.0500	9.492	0.9896	0.1474	40	-0.80	148.01	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data		Method Values			# Tests	Magruder CS Z Score	Your Method	Flag
			Value	Range	Rob Mean	Rob SD	R-bar				
148	Total Sulfur (10%)	0527	8.955	0.2500	9.492	0.9896	0.1474	40	-0.54	148.07	0
148	Total Sulfur (10%)	0117	9.191	0.1820	9.492	0.9896	0.1474	40	-0.30	148.07	0
148	Total Sulfur (10%)	0073	9.325	0.3700	9.492	0.9896	0.1474	40	-0.17	148.01	0
148	Total Sulfur (10%)	0292	9.335	0.0500	9.492	0.9896	0.1474	40	-0.16	148.07	0
148	Total Sulfur (10%)	0518	9.345	0.0100	9.492	0.9896	0.1474	40	-0.15	148.99	0
148	Total Sulfur (10%)	0072	9.385	0.1100	9.492	0.9896	0.1474	40	-0.11	148.99	0
148	Total Sulfur (10%)	0157	9.530	0.1600	9.492	0.9896	0.1474	40	0.04	148.01	0
148	Total Sulfur (10%)	0028	9.540	0.4000	9.492	0.9896	0.1474	40	0.05	148.01	0
148	Total Sulfur (10%)	0231	9.615	0.0100	9.492	0.9896	0.1474	40	0.12	148.01	0
148	Total Sulfur (10%)	0105	9.700	0.1000	9.492	0.9896	0.1474	40	0.21	148.01	0
148	Total Sulfur (10%)	0037	9.747	0.4950	9.492	0.9896	0.1474	40	0.26	148.01	0
148	Total Sulfur (10%)	0025	9.790	0.0200	9.492	0.9896	0.1474	40	0.30	148.00	0
148	Total Sulfur (10%)	0421	9.855	0.0500	9.492	0.9896	0.1474	40	0.37	148.07	0
148	Total Sulfur (10%)	0023	9.889	0.0590	9.492	0.9896	0.1474	40	0.40	148.07	0
148	Total Sulfur (10%)	0029	9.900	0.0400	9.492	0.9896	0.1474	40	0.41	148.01	0
148	Total Sulfur (10%)	0523	9.950	0.3000	9.492	0.9896	0.1474	40	0.46	148.99	0
148	Total Sulfur (10%)	0177	9.952	0.1131	9.492	0.9896	0.1474	40	0.47	148.07	0
148	Total Sulfur (10%)	0360	9.965	0.0300	9.492	0.9896	0.1474	40	0.48	148.00	0
148	Total Sulfur (10%)	0029	9.980	0.1200	9.492	0.9896	0.1474	40	0.49	148.00	0
148	Total Sulfur (10%)	0043	9.990	0.0600	9.492	0.9896	0.1474	40	0.50	148.00	0
148	Total Sulfur (10%)	0485	10.04	0.0900	9.492	0.9896	0.1474	40	0.55	148.01	0
148	Total Sulfur (10%)	0482	10.10	0.4100	9.492	0.9896	0.1474	40	0.61	148.99	0
148	Total Sulfur (10%)	0291	10.11	0.0100	9.492	0.9896	0.1474	40	0.62	148.99	0
148	Total Sulfur (10%)	0136	10.11	0.0400	9.492	0.9896	0.1474	40	0.62	148.00	0
148	Total Sulfur (10%)	0520	10.13	0.0000	9.492	0.9896	0.1474	40	0.64	148.99	0
148	Total Sulfur (10%)	0506	10.40	0.4000	9.492	0.9896	0.1474	40	0.92	148.99	0
148	Total Sulfur (10%)	0157	10.45	0.3000	9.492	0.9896	0.1474	40	0.97	148.00	0
148	Total Sulfur (10%)	0220	10.49	0.2000	9.492	0.9896	0.1474	40	1.01	148.99	0
148	Total Sulfur (10%)	0486	10.58	0.0500	9.492	0.9896	0.1474	40	1.09	148.07	0
148	Total Sulfur (10%)	0494	10.61	0.0306	9.492	0.9896	0.1474	40	1.13	148.07	0

Analyte Proficiency From All Labs
Sample # 161012
ZnSO4

Statistical Summary

 # Analytes: 28
 # Labs Reporting: 69
Issue Date : 12/31/2016

Analyte Code	Analyte	# Tests Submitted	# Tests in Robust Calculations	Raw Mean	Raw SD	Assigned Value Robust Mean	IA at Analyte Value	Robust sd	Robust Uncertainty (U)	Robust % RSD	IA %RSD	Average Range (R-bar)	Horwitz %RSD
148	Total Sulfur (17%)	48	46	16.28	0.9714	16.22	1.0000	0.9040	0.1666	5.57%	3.08%	0.3710	2.63%
321.00	Acid Soluble Zinc (35%)	63	61	33.18	3.315	33.27	1.0000	2.230	0.3569	6.70%	1.50%	0.4615	2.36%
325.00	Water Soluble Zinc (%)	14	13	31.49	1.695	31.41		1.744	0.6048	5.55%		0.3734	2.38%

Analyte Group	Analyte (Units)	Lab Code	Lab Data Value	Lab Data Range	Method Values Rob Mean	Method Values Rob SD	Method Values R-bar	# Tests	Magruder CS Z Score	Your Method	Flag
321	Acid Soluble Zinc (35%)	0292	15.50*	0.1300	33.27	2.230	0.4615	61	-7.97	321.30	0
321	Acid Soluble Zinc (35%)	0042	29.17*	2.010	33.27	2.230	0.4615	61	-1.84	321.99	0
321	Acid Soluble Zinc (35%)	0428	29.30*	0.2000	33.27	2.230	0.4615	61	-1.78	321.00	0
321	Acid Soluble Zinc (35%)	0482	30.00*	0.8000	33.27	2.230	0.4615	61	-1.47	321.30	0
321	Acid Soluble Zinc (35%)	0481	30.42*	0.2300	33.27	2.230	0.4615	61	-1.28	321.00	0
321	Acid Soluble Zinc (35%)	0117	30.47*	0.1100	33.27	2.230	0.4615	61	-1.26	321.33	0
321	Acid Soluble Zinc (35%)	0515	30.54*	1.344	33.27	2.230	0.4615	61	-1.23	321.33	0
321	Acid Soluble Zinc (35%)	0526	30.65*	0.5000	33.27	2.230	0.4615	61	-1.18	321.00	0
321	Acid Soluble Zinc (35%)	0405	30.80*	0.0000	33.27	2.230	0.4615	61	-1.11	321.99	0
321	Acid Soluble Zinc (35%)	0029	31.06*	1.480	33.27	2.230	0.4615	61	-0.99	321.00	0
321	Acid Soluble Zinc (35%)	0324	31.35*	0.5000	33.27	2.230	0.4615	61	-0.86	321.30	0
321	Acid Soluble Zinc (35%)	0200	31.38*	1.110	33.27	2.230	0.4615	61	-0.85	321.99	0
321	Acid Soluble Zinc (35%)	0025	31.47*	0.0500	33.27	2.230	0.4615	61	-0.81	321.33	0
321	Acid Soluble Zinc (35%)	0233	31.49*	0.5900	33.27	2.230	0.4615	61	-0.80	321.30	0
321	Acid Soluble Zinc (35%)	0105	31.69*	0.3100	33.27	2.230	0.4615	61	-0.71	321.03	0
321	Acid Soluble Zinc (35%)	0307	31.69*	0.2600	33.27	2.230	0.4615	61	-0.71	321.30	0
321	Acid Soluble Zinc (35%)	0231	31.79*	0.1600	33.27	2.230	0.4615	61	-0.67	321.30	0
321	Acid Soluble Zinc (35%)	0513	32.03*	0.0500	33.27	2.230	0.4615	61	-0.56	321.00	0
321	Acid Soluble Zinc (35%)	0043	32.06*	0.0800	33.27	2.230	0.4615	61	-0.54	321.00	0
321	Acid Soluble Zinc (35%)	0105	32.12*	0.1000	33.27	2.230	0.4615	61	-0.52	321.00	0
321	Acid Soluble Zinc (35%)	0040	32.13*	0.0600	33.27	2.230	0.4615	61	-0.51	321.00	0
321	Acid Soluble Zinc (35%)	0371	32.35	1.100	33.27	2.230	0.4615	61	-0.41	321.30	0
321	Acid Soluble Zinc (35%)	0433	32.39	0.4600	33.27	2.230	0.4615	61	-0.40	321.30	0

Analyte Group	Analyte (Units)	Lab Code	Lab Data Value	Lab Data Range	Method Values Rob Mean	Method Values Rob SD	Method Values R-bar	# Tests	Magruder CS Z Score	Your Method	Flag
321	Acid Soluble Zinc (35%)	0096	32.41	0.8200	33.27	2.230	0.4615	61	-0.39	321.30	0
321	Acid Soluble Zinc (35%)	0494	32.42	0.0500	33.27	2.230	0.4615	61	-0.38	321.33	0
321	Acid Soluble Zinc (35%)	0177	32.49	0.1127	33.27	2.230	0.4615	61	-0.35	321.33	0
321	Acid Soluble Zinc (35%)	0157	32.60	1.000	33.27	2.230	0.4615	61	-0.30	321.30	0
321	Acid Soluble Zinc (35%)	0420	32.61	1.200	33.27	2.230	0.4615	61	-0.30	321.30	0
321	Acid Soluble Zinc (35%)	0073	32.74	0.0500	33.27	2.230	0.4615	61	-0.24	321.30	0
321	Acid Soluble Zinc (35%)	0377	32.91	0.1500	33.27	2.230	0.4615	61	-0.17	321.30	0
321	Acid Soluble Zinc (35%)	0095	33.43	0.0000	33.27	2.230	0.4615	61	0.07	321.30	0
321	Acid Soluble Zinc (35%)	0368	33.44	0.2277	33.27	2.230	0.4615	61	0.07	321.30	0
321	Acid Soluble Zinc (35%)	0444	33.68	0.1300	33.27	2.230	0.4615	61	0.18	321.30	0
321	Acid Soluble Zinc (35%)	0523	33.73	0.3800	33.27	2.230	0.4615	61	0.20	321.99	0
321	Acid Soluble Zinc (35%)	0034	33.86	0.0500	33.27	2.230	0.4615	61	0.26	321.33	0
321	Acid Soluble Zinc (35%)	0230	34.00	0.0000	33.27	2.230	0.4615	61	0.33	321.30	0
321	Acid Soluble Zinc (35%)	0422	34.01	0.0000	33.27	2.230	0.4615	61	0.33	321.30	0
321	Acid Soluble Zinc (35%)	0354	34.26	0.0260	33.27	2.230	0.4615	61	0.44	321.30	0
321	Acid Soluble Zinc (35%)	0394	34.30	2.000	33.27	2.230	0.4615	61	0.46	321.32	0