

**FRONTLINE GENETICS  
CHERYL AND ROBERT CORZATT  
221 W NORTH ST  
STRONGHURST IL 61480**

**REPORT OF ANALYSIS**

For: (30204) FRONTLINE GENETICS  
Horning Lime 1  
Aberdeen Lime 1

Analysis	Level Found		Reporting		Analyst- Date	Verified- Date
	As Received	Units	Limit	Method		
Sample ID: 1	Lab Number: <b>2745403</b>	Date Sampled: <b>2017-11-10</b>				
Moisture	4.9	%	0.1	SM 2540 G-(1997)	bjs0-2017/11/15	asl4-2017/11/20
Calcium (total)	23.3	%	0.01	MWL ME PROC 26	cjm4-2017/11/16	asl4-2017/11/20
Magnesium (total)	4.59	%	0.01	MWL ME PROC 26	cjm4-2017/11/16	asl4-2017/11/20
Total neutralizing value (CaCO3 eq)	77.6	%	0.1	AOAC 955.01	eas2-2017/11/16	asl4-2017/11/20
ECCE	76.2	%	0.1	Calculation	Auto-2017/11/20	Auto-2017/11/20
% passing 4 sieve	100	%	0.1	ASTM E 276-13 (mod)	rko9-2017/11/20	mjs5-2017/11/20
% passing 8 sieve	100	%	0.1	ASTM E 276-13 (mod)	rko9-2017/11/20	mjs5-2017/11/20
% passing 60 sieve	97.0	%	0.1	ASTM E 276-13 (mod)	rko9-2017/11/20	mjs5-2017/11/20
Arsenic (total)	n.d.	mg/kg	10.0	EPA 6010	ras7-2017/11/17	bab2-2017/11/20
Chromium (total)	3.97	mg/kg	1.00	EPA 6010	ras7-2017/11/17	bab2-2017/11/20
Cadmium (total)	n.d.	mg/kg	0.50	EPA 6010	ras7-2017/11/17	bab2-2017/11/20
Lead (total)	n.d.	mg/kg	5.0	EPA 6010	ras7-2017/11/17	bab2-2017/11/20
Selenium (total)	n.d.	mg/kg	10.0	EPA 6010	ras7-2017/11/17	bab2-2017/11/20
Nickel (total)	6.6	mg/kg	1.0	EPA 6010	ras7-2017/11/17	bab2-2017/11/20
Sample ID: 2	Lab Number: <b>2745404</b>	Date Sampled: <b>2017-11-10</b>				
Moisture	11.3	%	0.1	SM 2540 G-(1997)	bjs0-2017/11/15	asl4-2017/11/20
Calcium (total)	24.8	%	0.01	MWL ME PROC 26	cjm4-2017/11/16	asl4-2017/11/20
Magnesium (total)	5.12	%	0.01	MWL ME PROC 26	cjm4-2017/11/16	asl4-2017/11/20
Total neutralizing value (CaCO3 eq)	81.4	%	0.1	AOAC 955.01	eas2-2017/11/16	asl4-2017/11/20

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

**Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.**

**FRONTLINE GENETICS  
CHERYL AND ROBERT CORZATT  
221 W NORTH ST  
STRONGHURST IL 61480**

**REPORT OF ANALYSIS**

For: (30204) FRONTLINE GENETICS  
Horning Lime 1  
Aberdeen Lime 1

Analysis	Level Found	Units	Reporting	Method	Analyst- Date	Verified- Date
	As Received		Limit			
<b>Sample ID: 2</b>	Lab Number: <b>2745404</b> (con't)					
ECCE	80.2	%	0.1	Calculation	Auto-2017/11/20	Auto-2017/11/20
% passing 4 sieve	100	%	0.1	ASTM E 276-13 (mod)	rko9-2017/11/20	mjs5-2017/11/20
% passing 8 sieve	100	%	0.1	ASTM E 276-13 (mod)	rko9-2017/11/20	mjs5-2017/11/20
% passing 60 sieve	97.5	%	0.1	ASTM E 276-13 (mod)	rko9-2017/11/20	mjs5-2017/11/20

All results are reported on an AS RECEIVED basis., n.d. = not detected , ppm = parts per million, ppm = mg/kg

cc: Account(s) 26794 PREMIER CROP SYSTEMS

For questions please contact:



Craig Ebel  
Feed Coordinator  
cebel@midwestlabs.com (402)590-2962

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.

**FRONTLINE GENETICS  
CHERYL AND ROBERT CORZATT  
221 W NORTH ST  
STRONGHURST IL 61480**

**REPORT OF ANALYSIS**  
For: (30204) FRONTLINE GENETICS  
Horning Lime 1  
Aberdeen Lime 1

### **Detailed Method Description(s)**

#### **SM 2540 G**

Analysis follows MWL WC 060 which is based on SM 2540 G. A sample is weighed placed in a vacuum drying oven to drive off the moisture and re-weighed. The sample is then placed in a muffle furnace at 550°C, cooled, and re-weighed. The residue remaining is the ash and the mass lost is the volatile matter.

#### **ME 042**

Analysis follows MWL ME 042 which is based on EPA 6010b, Inductively Coupled Plasma (ICP).

A light emission technique where prepared samples are injected into a high energy plasma that forces the elements in the injected sample to emit light energies which are proportional to the level of minerals and metals present. The light is then detected and correlated to the levels of minerals and metals in the original sample.

#### **ICP Analysis Fertilizers AOAC 985.01 (mod)**

Analysis follows MWL ME 026 which is based on AOAC 985.01. Samples have been prepared using MWL WC 056 which is based on AOAC 957.02 using mineral acids and heat. Sample analysis involves moving the sample extract into the ICP where it is nebulized and introduced into the high temperature plasma which energizes the electrons of the dissolved minerals/metals. As the energized electrons of the minerals/metals return to ground state, energy is released as light. The emitted wavelength(s) and light intensities are used to identify and quantitate the minerals/metals in the sample

#### **AOAC 955.01**

Analysis follows MWL WC 039 which is based on AOAC 955.01. A sample is treated with an excess of acid and then back-titrated with a known base to a phenolphthalein end point

#### **Calculation**

Analytical results are entered into applicable formulas to provide a calculated result which is reported.

#### **Wet Sieve**

Sample analysis follows MWL WC 070 which is based on ASTM E 276. A known mass of a solid is obtained and a pre-determined set of sieves obtained. The sample is placed on the upper most (largest screen size) and the sample washed with water to wash the materials through the sieves. The material retained on the individual sieves is removed and weighed and the percent of the total passing through the sieve is calculated and reported.

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

**Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.**

REPORT NUMBER

**17-324-4166**

REPORT DATE  
**Nov 20, 2017**

RECEIVED DATE  
**Nov 14, 2017**

SEND TO  
**30204**



13611 B Street • Omaha, Nebraska 68144-3693 • (402) 334-7770  
www.midwestlabs.com

**PAGE 4/4**

ISSUE DATE  
**Nov 20, 2017**

**FRONTLINE GENETICS  
CHERYL AND ROBERT CORZATT  
221 W NORTH ST  
STRONGHURST IL 61480**

**REPORT OF ANALYSIS**

For: (30204) FRONTLINE GENETICS  
Horning Lime 1  
Aberdeen Lime 1

**Fertilizer Prep AOAC 957.02**

Samples are prepared using a combination of nitric acid and heat. The heating takes place in a block digester

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

**Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.**