Submitted by **EW**

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for **MARSDEN**



Laboratory Sample # BG63962

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18

ATING

A Day

Samples Will Be Stored Until

O1-Jun-2018

Field Identification

BOONE

BOONE

GRAPHIC SUMMARY OF TEST RESULTS

INCREASING PROBLEM SEVERITY

SATISFACTORY

RATING

ADARD ADA

REPORT OF	REPORT OF ANALYSIS								
YOUR SA Nume									
B1_13-C2-1									
Soil pH	6.9								
Buffer Index	7.2								
Soluble Salts	0.4								
mmhos/cm									
Sodium ppm	12.3								
% Organic Matter	3.3								
ANALYSIS OF	NUTRIENT								
ELEMENTS IS									
PER MILLIO	ON (ppm)								
Nitrate N									
Phosphorus									
Mehlich III	18								
Potassium	172								
Magnesium	365								
Calcium	3832								
Sulfate Sulfur	4								
Zinc	0.7								
Manganese	1.2								
Copper	0.6								
Iron	17.5								
Boron	0.4								

		FERTILIZE	R GUIDLII	NES IN: Lbs/	Acre					
1st	Option Intended	Crop	2	nd Option Intende	ed Crop		3rd Option Intended Crop			
	Yield Goal			Yield Goal				Yield Goal		
	Preceding Crop			Preceding Cr	op			Preceding Cro	р	
	ANT FOOD INE RANGES	CROP REMOVAL RATES		PLANT FOOD ELINE RANGES	CROP REMOVAL RATES			ANT FOOD LINE RANGES	CROP REMOVAL RATES	
N			N				N			
P ₂ O ₅			P ₂ O ₅				P ₂ O ₅			
K₂O			K ₂ O				K ₂ O			
MgO			MgO				MgO			
S			S				S			
Zn			Zn				Zn			
Mn			Mn				Mn			
Cu			Cu				Cu			
Fe			Fe				Fe			
В			В				В			
None			None				None			
		Lime Guideline	s are for 100% Eff	ective Calcium Carbon	ate (ECC) with a 6" Inc	orpor	ration Depth.			

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMAT										
Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	CEC for	
Hydrogen	Hydrogen	Potassium	Potassium	Magnesium	Magnesium	Calcium	Calcium	Sodium	Sodium	Your Soil	
10.3	0 - 5	1.7	65 - 75	11.9	2 - 7	75.8	15 - 20	0.2	0 - 5	25.2	

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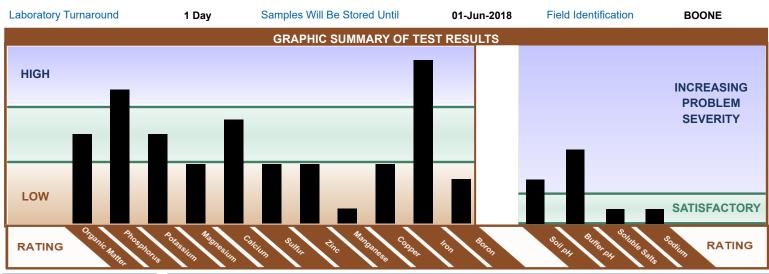
MARSDEN



Laboratory Sample # BG63963

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS
YOUR SA	
B1_18_	C4-1
Soil pH	6.6
Buffer Index	7.1
Soluble Salts	0.4
mmhos/cm	20.5
Sodium ppm % Organic	
Matter	3.2
ANALYSIS OF ELEMENTS IS	_
PER MILLIO	
Nitrate N	
Phosphorus Mehlich III	
ivieniich III	22
Potassium	178
Magnesium	310
Calcium	3213
Sulfate Sulfur	6
Zinc	0.8
Manganese	1.0
Copper	0.5
Iron	21.6
Boron	0.4

		FERTILIZE	R GUIDL	INES IN: Lbs.	/Acre					
1st	Option Intende	d Crop		2nd Option Intended Crop			3rd Option Intended Crop			
	Yield Goal			Yield Goa	I		Yield Goal			
	Preceding Cro	р		Preceding C	rop	Preceding Crop				
	ANT FOOD LINE RANGES	CROP REMOVAL RATES	GL	PLANT FOOD JIDELINE RANGES	CROP REMOVAL RATES		PLANT FOOD CROP REI			
N			N			N				
P ₂ O ₅			P ₂ O	5		P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgC)		MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В			В				
None			None			None				
		Lime Guidelines	s are for 100%	Effective Calcium Carbo	nate (ECC) with a 6" Inco	rporation Depth.	1	'		

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION)									
Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	CEC for
Hydrogen	Hydrogen	Potassium	Potassium	Magnesium	Magnesium	Calcium	Calcium	Sodium	Sodium	Your Soil
13.6	0 - 5	2.1	65 - 75	11.5	2 - 7	72.5	15 - 20	0.4	0 - 5	22.1

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17-May-2018

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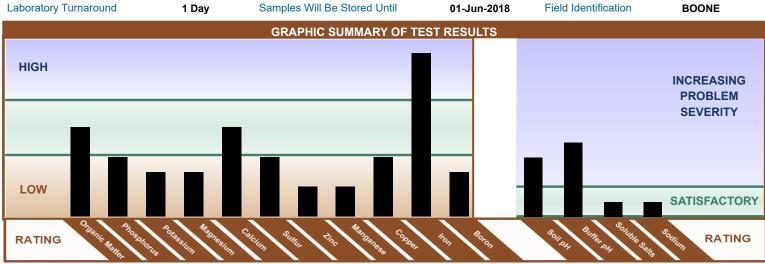


Laboratory Sample # BG63964

0517-18

Date Received Date Reported Information Sheet #

18-May-2018



REPORT OF	ANALYSIS
YOUR SA	
B2_24_	C2-1
Soil pH	6.5
Buffer Index	7.1
Soluble Salts	0.3
mmhos/cm	11.9
Sodium ppm % Organic	
Matter	3.1
ANALYSIS OF	
ELEMENTS IS PER MILLIO	
Nitrate N	
Phosphorus	
Mehlich III	14
Potassium	140
Magnesium	247
Calcium	2737
Sulfate Sulfur	5
Zinc	0.5
Manganese	1.9
Copper	0.5
Iron	21.1
Boron	0.3

		FERTILIZE	R GUIDLIN	IES IN: Lbs/	Acre					
1st	Option Intende	d Crop	2r	nd Option Intend	ed Crop	3rd	d Option Intende	ed Crop		
	Yield Goal			Yield Goal			Yield Goal			
Preceding Crop				Preceding Crop			Preceding Crop			
	ANT FOOD LINE RANGES	CROP REMOVAL RATES		LANT FOOD ELINE RANGES	CROP REMOVAL RATES		PLANT FOOD CROP REMO GUIDELINE RANGES RATES			
N			N			N				
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅				
K₂O			K ₂ O			K ₂ O				
MgO			MgO			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В	В		В				
None			None			None				
		Lime Guidelines	are for 100% Effe	ective Calcium Carbor	nate (ECC) with a 6" Inco	rporation Depth.				

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED									
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
18.2	0 - 5	1.8	65 - 75	10.3	2 - 7	69.4	15 - 20	0.3	0 - 5	19.7

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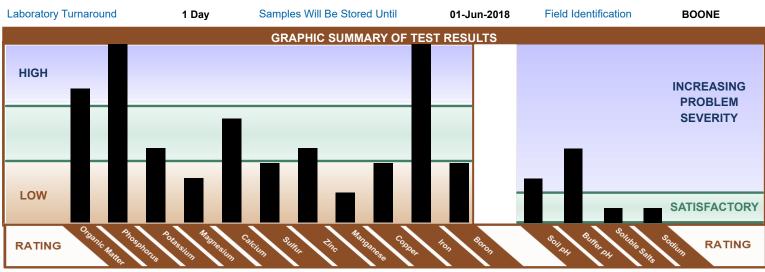
MARSDEN



Laboratory Sample # BG63965

Date Received Date Reported Information Sheet #

0517-18 17-May-2018 18-May-2018



REPORT OF	ANALYSIS
YOUR SA Nume	
B2_28-	C4-1
Soil pH	6.5
Buffer Index	7.1
Soluble Salts	0.4
mmhos/cm Sodium ppm	23.3
% Organic	
Matter	4.7
ANALYSIS OF ELEMENTS IS	
PER MILLIO	
Nitrate N	
Phosphorus	
Mehlich III 	35
Potassium	162
Magnesium	337
Calcium	3782
Sulfate Sulfur	6
Zinc	1.2
Manganese	2.4
Copper	0.7
Iron	25.1
Boron	0.5

		FERTILIZE	R GUIDL	INES IN: Lbs	s/Acre					
1st	Option Intende	d Crop		2nd Option Inten	ded Crop	31	d Option Intend	ed Crop		
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Crop			Preceding Crop			Preceding Crop			
	ANT FOOD LINE RANGES	CROP REMOVAL RATES	GL	PLANT FOOD JIDELINE RANGES	CROP REMOVAL RATES		PLANT FOOD CROP REM GUIDELINE RANGES RATES			
N			N			N				
P ₂ O ₅			P ₂ O	5		P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgC			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В	В		В				
None			None	•		None				
		Lime Guidelines	are for 100%	Effective Calcium Carb	onate (ECC) with a 6" Inco	orporation Depth.		'		

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED									
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
14.3	0 - 5	1.6	65 - 75	10.7	2 - 7	72.9	15 - 20	0.4	0 - 5	25.9

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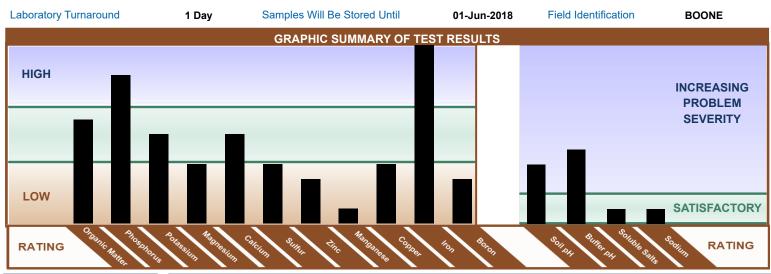
MARSDEN



Laboratory Sample # BG63966

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS								
YOUR SA									
B3_34_C2-1									
Soil pH	6.4								
Buffer Index	7.0								
Soluble Salts	0.4								
mmhos/cm	12.9								
Sodium ppm % Organic	1-10								
Matter	3.6								
ANALYSIS OF ELEMENTS IS	-								
PER MILLIO									
Nitrate N									
Phosphorus Mehlich III									
ivieniich III	28 								
Potassium	174								
Magnesium	396								
Calcium	3468								
Sulfate Sulfur	5								
Zinc	0.6								
Manganese	0.9								
Copper	0.9								
Iron	33.3								
Boron	0.4								

		FERTILIZE	R GUIDLIN	IES IN: Lbs/	Acre					
1st	Option Intende	d Crop	2r	2nd Option Intended Crop			3rd Option Intended Crop			
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Crop Preceding Crop					Preceding Cr	eding Crop			
	ANT FOOD LINE RANGES	CROP REMOVAL RATES		LANT FOOD ELINE RANGES	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES			
N			N			N				
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅				
K₂O			K ₂ O			K ₂ O				
MgO			MgO			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В			В				
None			None			None				
		Lime Guidelines	are for 100% Effe	ective Calcium Carbor	nate (ECC) with a 6" Inco	rporation Depth.				

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED										
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil	
16.3	0 - 5	1.8	65 - 75	13.0	2 - 7	68.8	15 - 20	0.2	0 - 5	25.1	

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Submitted by

Date Received

RATING

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MARSDEN

Date Reported



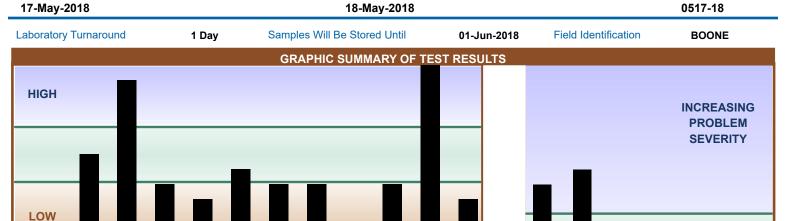
Laboratory Sample # BG63967

SATISFACTORY

RATING

Information Sheet #

Illioilliation oneet #



REPORT OF	REPORT OF ANALYSIS								
YOUR SA									
B3_37_C4-1									
Soil pH	6.4								
Buffer Index	7.0								
Soluble Salts	0.3								
mmhos/cm	40.0								
Sodium ppm % Organic	18.8								
Matter	3.2								
ANALYSIS OF									
ELEMENTS IS PER MILLIO									
Nitrate N	ли (ррпп)								
	-								
Phosphorus Mehlich III	29								
Potassium	153								
Magnesium	254								
Calcium	2594								
Sulfate Sulfur	6								
Zinc	0.7								
Manganese	1.4								
Copper	0.4								
Iron	26.2								
Boron	0.3								

		FERTILIZE	R GUIDLIN	ES IN: Lbs/	Acre			
1st	Option Intende	d Crop	2no	d Option Intend	ed Crop	3rc	l Option Intende	ed Crop
	Yield Goal			Yield Goal			Yield Goal	
	Preceding Cro	р		Preceding Cr	ор		Preceding Cr	ор
						_		
	ANT FOOD INE RANGES	CROP REMOVAL RATES		ANT FOOD LINE RANGES	CROP REMOVAL RATES		LANT FOOD ELINE RANGES	CROP REMOVAL RATES
N			N			N		
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅		
K ₂ O			K ₂ O			K ₂ O		
MgO			MgO			MgO		
S			S			S		
Zn			Zn			Zn		
Mn			Mn			Mn		
Cu			Cu			Cu		
Fe			Fe			Fe		
В			В			В		
None			None			None		
		Lime Guidelines	are for 100% Effec	ctive Calcium Carbor	nate (ECC) with a 6" Incor	poration Depth.		

	ACTUAL A	E	STIMATED							
Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	CEC for
Hydrogen	Hydrogen	Potassium	Potassium	Magnesium	Magnesium	Calcium	Calcium	Sodium	Sodium	Your Soil
20.9	0 - 5	2.0	65 - 75	10.6	2 - 7	66.1	15 - 20	0.4	0 - 5	19.6

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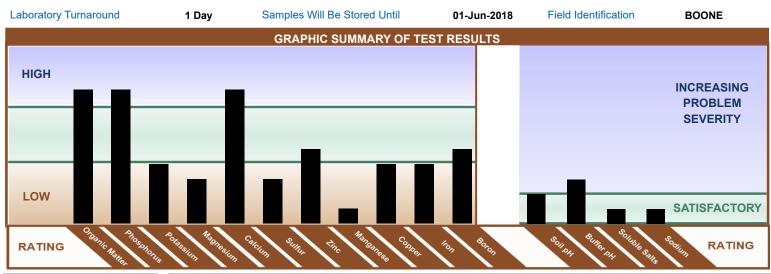
MARSDEN



Laboratory Sample # BG63968

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF ANALYSIS										
YOUR SAMPLE NUMBER										
B4_44_	B4_44_C2-1									
Soil pH	7.3									
Buffer Index	7.3									
Soluble Salts	0.6									
mmhos/cm Sodium ppm	13.2									
% Organic Matter	4.8									
ANALYSIS OF	NUTRIENT									
ELEMENTS IS	S IN PARTS									
PER MILLIO	ON (ppm)									
Nitrate N										
Phosphorus Mehlich III	23									
Potassium	142									
Magnesium	396									
Calcium	5716									
Sulfate Sulfur	4									
Zinc	1.3									
Manganese	1.1									
Copper	1.0									
Iron	9.6									
Boron	0.7									

		FERTILIZE	R GUIDL	INES IN: Lbs.	/Acre					
1st	Option Intende	d Crop		2nd Option Intended Crop			l Option Intende	ed Crop		
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Cro	р		Preceding C	rop	Preceding Crop				
	ANT FOOD LINE RANGES	CROP REMOVAL RATES	GL	PLANT FOOD JIDELINE RANGES	CROP REMOVAL RATES	PLANT FOOD GUIDELINE RANGES		CROP REMOVAL RATES		
N			N			N				
P ₂ O ₅			P ₂ O	5		P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgC)		MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В			В				
None			None			None				
		Lime Guidelines	s are for 100%	Effective Calcium Carbo	nate (ECC) with a 6" Inco	rporation Depth.	1	'		

	ACTUAL A	AND SUGGE	ES	TIMATED						
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
0.0	0 - 5	1.1	65 - 75	10.1	2 - 7	88.6	15 - 20	0.2	0 - 5	32.2

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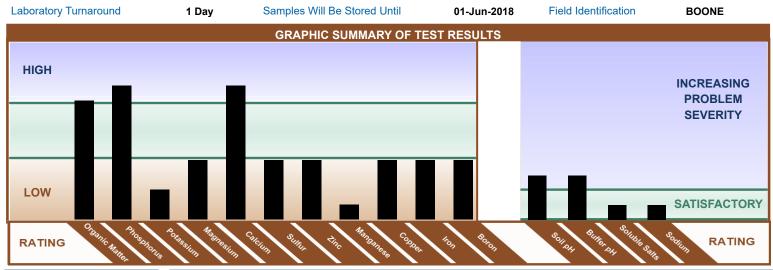
MARSDEN



Laboratory Sample # BG63969

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF ANALYSIS								
YOUR SA								
B4_46_	C4-1							
Soil pH	7.4							
Buffer Index	7.4							
Soluble Salts	0.5							
mmhos/cm	15.7							
Sodium ppm % Organic	1011							
Matter	4.0							
ANALYSIS OF ELEMENTS IS	-							
PER MILLIO								
Nitrate N								
Phosphorus Mehlich III								
	22 							
Potassium	96							
Magnesium	309							
Calcium	3604							
Sulfate Sulfur	5							
Zinc	0.8							
Manganese	1.2							
Copper	0.9							
Iron	8.8							
Boron	0.6							

		FERTILIZE	R GUIDL	INES IN: Lbs.	/Acre					
1st	Option Intende	d Crop		2nd Option Intended Crop			l Option Intende	ed Crop		
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Cro	р		Preceding C	rop	Preceding Crop				
	ANT FOOD LINE RANGES	CROP REMOVAL RATES	GL	PLANT FOOD JIDELINE RANGES	CROP REMOVAL RATES	PLANT FOOD GUIDELINE RANGES		CROP REMOVAL RATES		
N			N			N				
P ₂ O ₅			P ₂ O	5		P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgC)		MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В			В				
None			None			None				
		Lime Guidelines	s are for 100%	Effective Calcium Carbo	nate (ECC) with a 6" Inco	rporation Depth.	1	'		

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED										
Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	CEC for	
Hydrogen	Hydrogen	Potassium	Potassium	Magnesium	Magnesium	Calcium	Calcium	Sodium	Sodium	Your Soil	
0.0	0 - 5	1.2	65 - 75	12.2	2 - 7	86.2	15 - 20	0.3	0 - 5	20.9	

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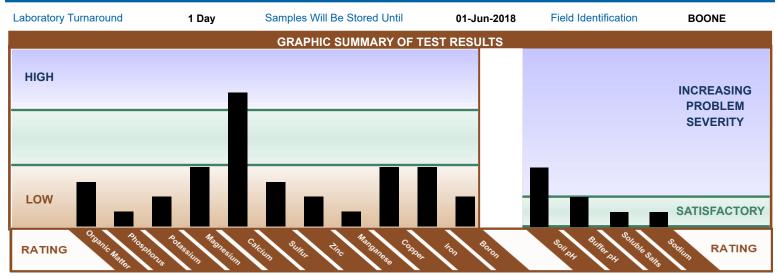
MARSDEN



Laboratory Sample # BG63971

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS									
	YOUR SAMPLE NUMBER									
B1_13_C2-2										
Soil pH	7.5									
Buffer Index	7.4									
Soluble Salts	0.4									
mmhos/cm	13.9									
Sodium ppm % Organic										
Matter	1.9									
ANALYSIS OF										
ELEMENTS IS PER MILLIO										
Nitrate N										
Phosphorus	_									
Mehlich III 	3									
Potassium	73									
Magnesium	401									
Calcium	3870									
Sulfate Sulfur	4									
Zinc	0.2									
Manganese	0.7									
Copper	0.6									
Iron	10.0									
Boron	0.3									

	FERTILIZER GUIDLINES IN: Lbs/Acre												
1st	Option Intended	d Crop	2r	nd Option Intend	ed Crop	3rd	d Option Intende	ed Crop					
	Yield Goal			Yield Goal			Yield Goal						
Preceding Crop				Preceding Cr	ор		Preceding Cr	ор					
	ANT FOOD INE RANGES	CROP REMOVAL RATES		LANT FOOD ELINE RANGES	CROP REMOVAL RATES		LANT FOOD ELINE RANGES	CROP REMOVAL RATES					
N			N			N							
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅							
K ₂ O			K ₂ O			K ₂ O							
MgO			MgO			MgO							
S			S			S							
Zn			Zn			Zn							
Mn			Mn			Mn							
Cu			Cu			Cu							
Fe			Fe			Fe							
В			В			В							
None			None			None							
		Lime Guidelines	are for 100% Effe	ective Calcium Carbor	ate (ECC) with a 6" Inco	rporation Depth.							

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED										
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil	
0.0	0 - 5	0.8	65 - 75	14.4	2 - 7	84.5	15 - 20	0.3	0 - 5	22.9	

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EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

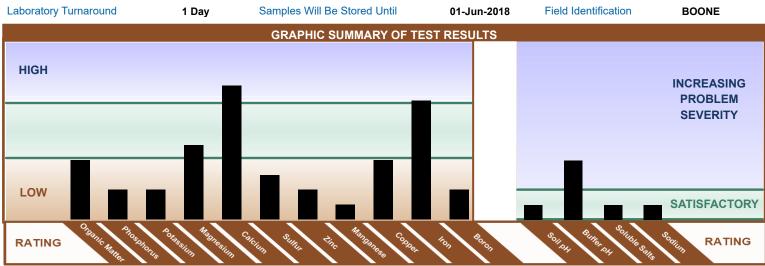
MARSDEN



Laboratory Sample # BG63972

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS								
YOUR SAMPLE NUMBER									
B1_18_C4-2									
Soil pH	7.2								
Buffer Index	7.3								
Soluble Salts	0.4								
mmhos/cm Sodium ppm	15.7								
% Organic	2.2								
Matter									
ANALYSIS OF ELEMENTS IS									
PER MILLIO									
Nitrate N									
Phosphorus Mehlich III	_								
ivieniich III	6 								
Potassium	71								
Magnesium	375								
Calcium	3274								
Sulfate Sulfur	4								
Zinc	0.3								
Manganese	0.5								
Copper	0.6								
Iron	15.4								
Boron	0.3								

		FERTILIZE	R GUIDLIN	ES IN: Lbs/	Acre					
1st	Option Intende	d Crop	2n	d Option Intend	ed Crop	3r	3rd Option Intended Crop			
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Cro	pp		Preceding Cr	ор		Preceding Cr	ор		
	ANT FOOD LINE RANGES	CROP REMOVAL RATES		ANT FOOD LINE RANGES	CROP REMOVAL RATES		PLANT FOOD ELINE RANGES	CROP REMOVAL RATES		
N			N			N				
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgO			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В			В				
None			None			None				
	l	Lime Guidelines	are for 100% Effe	ctive Calcium Carbor	nate (ECC) with a 6" Inco	rporation Depth.				

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED										
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil	
0.1	0 - 5	0.9	65 - 75	15.7	2 - 7	83.0	15 - 20	0.3	0 - 5	19.7	

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VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

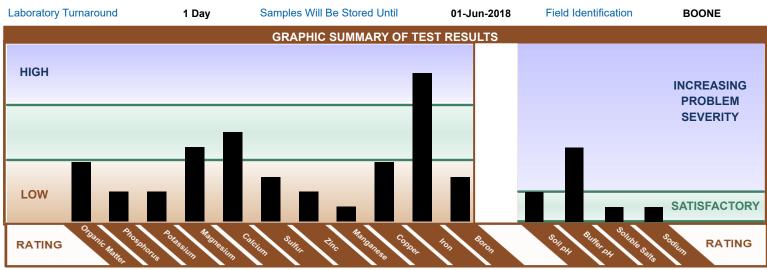
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Laboratory Sample # BG63973

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS								
YOUR SAMPLE NUMBER									
B2_24_C2-2									
Soil pH	6.8								
Buffer Index	7.2								
Soluble Salts	0.3								
mmhos/cm Sodium ppm	14.6								
% Organic	•								
Matter	2.4								
ANALYSIS OF ELEMENTS IS									
PER MILLIO									
Nitrate N									
Phosphorus									
Mehlich III	6								
Potassium	91								
Magnesium	382								
Calcium	2816								
Sulfate Sulfur	4								
Zinc	0.3								
Manganese	1.2								
Copper	0.6								
Iron	18.9								
Boron	0.3								

		FERTILIZE	R	GUIDLINE	ES IN: Lbs/	Acre					
1st	Option Intended	d Crop		2nd Option Intended Crop				3rd	Option Intende	ed Crop	
	Yield Goal				V6.11.01			Yield Goal			
	Held Goal				Yield Goal				Yield Goal		
	Preceding Crop				Preceding Cr	ор			Preceding Cr	ор	
	ANT FOOD LINE RANGES	CROP REMOVAL RATES			ANT FOOD INE RANGES	CROP REMOVAL RATES			ANT FOOD LINE RANGES	CROP REMOVAL RATES	
N				N				N			
P ₂ O ₅				$P_{2}O_{5}$				P ₂ O ₅			
K ₂ O				K ₂ O				K ₂ O			
MgO				MgO				MgO			
S				S				S			
Zn				Zn				Zn			
Mn				Mn				Mn			
Cu				Cu				Cu			
Fe				Fe				Fe			
В				В				В			
None				None				None			
		Lime Guideline	s are	e for 100% Effec	tive Calcium Carbon	ate (ECC) with a 6" Inco	orpo	oration Depth.			

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED									
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
13.9	0 - 5	1.1	65 - 75	15.5	2 - 7	69.2	15 - 20	0.3	0 - 5	20.3

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VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

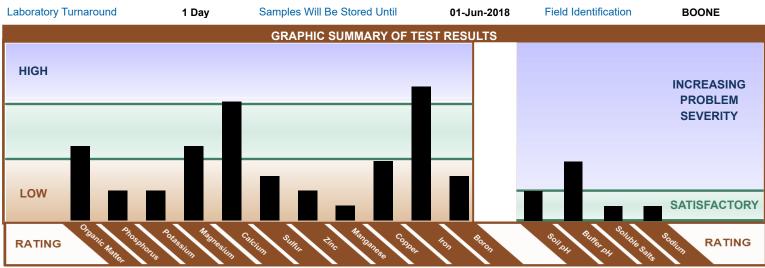
MARSDEN



Laboratory Sample # BG63974

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS									
YOUR SAMPLE NUMBER										
B2_28_C4-2										
Soil pH	7.0									
Buffer Index	7.3									
Soluble Salts	0.4									
mmhos/cm Sodium ppm	19.1									
% Organic										
Matter	2.7									
ANALYSIS OF ELEMENTS IS										
PER MILLIO										
Nitrate N										
Phosphorus Mehlich III	7									
Potassium	96									
Magnesium	472									
Calcium	3827									
Sulfate Sulfur	3									
Zinc	0.4									
Manganese	0.5									
Copper	0.6									
Iron	16.7									
Boron	0.4									

		FERTILIZE	R GUIDL	INES IN: Lbs.	/Acre				
1st	Option Intende	d Crop		2nd Option Intend	ded Crop	3rc	l Option Intende	ed Crop	
	Yield Goal			Yield Goa	I	Yield Goal			
	Preceding Cro	р		Preceding C	rop		Preceding Cr	ор	
	ANT FOOD LINE RANGES	CROP REMOVAL RATES	GL	PLANT FOOD JIDELINE RANGES	CROP REMOVAL RATES		LANT FOOD ELINE RANGES	CROP REMOVAL RATES	
N			N			N			
P ₂ O ₅			P ₂ O	5		P ₂ O ₅			
K ₂ O			K ₂ O			K ₂ O			
MgO			MgC)		MgO			
S			S			S			
Zn			Zn			Zn			
Mn			Mn			Mn			
Cu			Cu			Cu			
Fe			Fe			Fe			
В			В			В			
None			None			None			
		Lime Guidelines	s are for 100%	Effective Calcium Carbo	nate (ECC) with a 6" Inco	rporation Depth.	1	'	

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED									
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual %	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
		FULASSIUITI		.,	Magnesium				Soululli	
7.5	0 - 5	1.0	65 - 75	15.4	2 - 7	75.8	15 - 20	0.3	0 - 5	25.2

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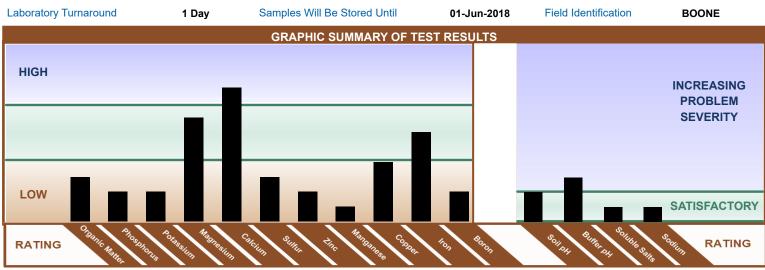
MARSDEN



Laboratory Sample # BG63975

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS
YOUR SA	
B3_34_	C2-2
Soil pH	6.9
Buffer Index	7.4
Soluble Salts mmhos/cm	0.4
Sodium ppm	13.3
% Organic	1.9
Matter	
ANALYSIS OF ELEMENTS IS	
PER MILLIO	
Nitrate N	
Phosphorus	
Mehlich III 	6
Potassium	98
Magnesium	500
Calcium	3430
Sulfate Sulfur	3
Zinc	0.2
Manganese	0.6
Copper	0.9
Iron	12.0
Boron	0.3

		FERTILIZE	R GUIDL	INES IN: Lbs	s/Acre				
1st	Option Intende	d Crop		2nd Option Inten	ded Crop	31	d Option Intend	ed Crop	
	Yield Goal			Yield Go	al				
	Preceding Crop			Preceding Crop			Preceding Crop		
	ANT FOOD LINE RANGES	CROP REMOVAL RATES	GL	PLANT FOOD JIDELINE RANGES	CROP REMOVAL RATES		PLANT FOOD CROP RE GUIDELINE RANGES RAT		
N			N			N			
P ₂ O ₅			P ₂ O	5		P ₂ O ₅			
K ₂ O			K ₂ O			K ₂ O			
MgO			MgC			MgO			
S			S			S			
Zn			Zn			Zn			
Mn			Mn			Mn			
Cu			Cu			Cu			
Fe			Fe			Fe			
В			В	В		В			
None			None	•		None			
		Lime Guidelines	are for 100%	Effective Calcium Carb	onate (ECC) with a 6" Inco	orporation Depth.		'	

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED									
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
4.0	0 - 5	1.1	65 - 75	18.3	2 - 7	76.3	15 - 20	0.3	0 - 5	22.4

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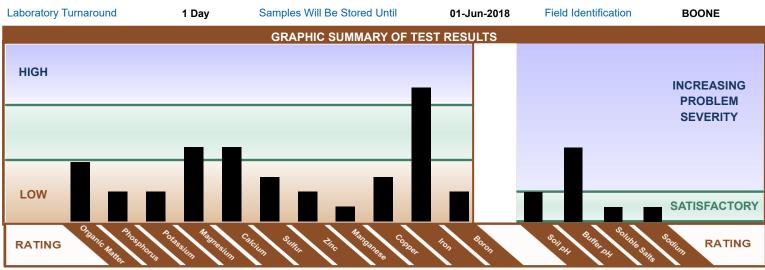
MARSDEN



Laboratory Sample # BG63976

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS
YOUR SA NUME	
B3_37_	C4-2
Soil pH	6.8
Buffer Index	7.2
Soluble Salts	0.2
mmhos/cm	17.1
Sodium ppm % Organic	
Matter	2.3
ANALYSIS OF	
ELEMENTS IS	
PER MILLIO	אכ (ppm)
Nitrate N	
Phosphorus Mehlich III	5
Potassium	59
Magnesium	345
Calcium	2309
Sulfate Sulfur	4
Zinc	0.2
Manganese	0.6
Copper	0.4
Iron	17.4
Boron	0.3

		FERTILIZE	R GUIDLIN	ES IN: Lbs/	Acre					
1st	Option Intende	d Crop	2n	d Option Intend	ed Crop	3r	3rd Option Intended Crop			
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Crop			Preceding Crop			Preceding Crop			
	ANT FOOD LINE RANGES	CROP REMOVAL RATES		ANT FOOD LINE RANGES	CROP REMOVAL RATES		PLANT FOOD CROP R GUIDELINE RANGES RA			
N			N			N				
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgO			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В	В		В				
None			None	None						
	l	Lime Guidelines	are for 100% Effe	ctive Calcium Carbor	nate (ECC) with a 6" Inco	rporation Depth.				

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED									
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
15.6	0 - 5	0.9	65 - 75	16.4	2 - 7	66.6	15 - 20	0.4	0 - 5	17.3

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Date Received

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

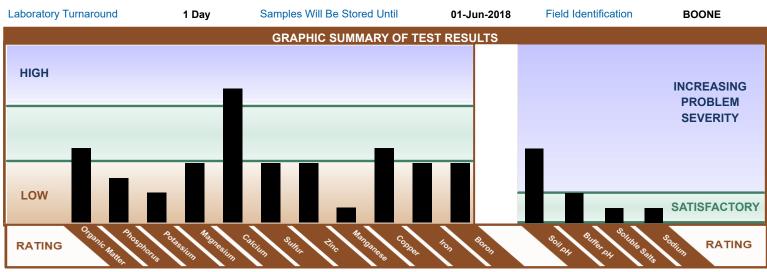
MARSDEN



Laboratory Sample # BG63977

Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS
YOUR SA	
B4_44_	C2-2
Soil pH	7.9
Buffer Index	7.5
Soluble Salts	0.5
mmhos/cm Sodium ppm	18.2
% Organic	
Matter	2.6
ANALYSIS OF ELEMENTS IS	
PER MILLIO	
Nitrate N	
Phosphorus Mehlich III	
ivieniich III	10
Potassium	110
Magnesium	452
Calcium	5727
Sulfate Sulfur	5
Zinc	0.8
Manganese	1.0
Copper	1.0
Iron	8.6
Boron	0.5

		FERTILIZE	R GUIDLIN	IES IN: Lbs/	Acre					
1st	Option Intende	d Crop	2r	2nd Option Intended Crop			d Option Intende	ed Crop		
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Crop			Preceding Crop			Preceding Crop			
	ANT FOOD LINE RANGES	CROP REMOVAL RATES		LANT FOOD ELINE RANGES	CROP REMOVAL RATES		PLANT FOOD CROP REM GUIDELINE RANGES RATES			
N			N			N				
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅				
K₂O			K ₂ O			K ₂ O				
MgO			MgO			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В	В		В				
None			None			None				
		Lime Guidelines	are for 100% Effe	ective Calcium Carbor	nate (ECC) with a 6" Inco	rporation Depth.				

	ACTUAL A	AND SUGGE	ATION)	ES	TIMATED					
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
0.0	0 - 5	0.9	65 - 75	11.4	2 - 7	87.5	15 - 20	0.2	0 - 5	32.7

Submitted by

EW50010106

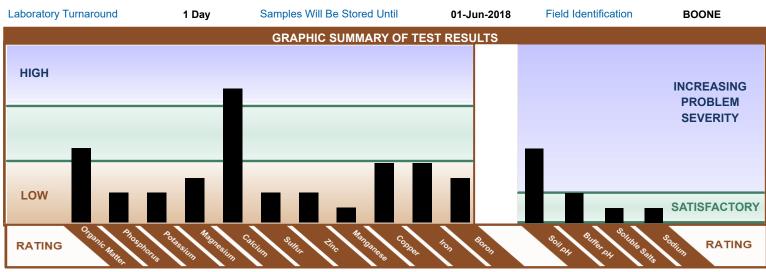
VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for **MARSDEN**



Laboratory Sample # BG63978

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	REPORT OF ANALYSIS								
YOUR SA									
B4_46_									
Soil pH	7.8								
Buffer Index	7.4								
Soluble Salts	0.5								
mmhos/cm Sodium ppm	12.8								
% Organic	2.8								
Matter									
ANALYSIS OF ELEMENTS IS	-								
PER MILLIO	ON (ppm)								
Nitrate N									
Phosphorus Mehlich III	_								
	5 								
Potassium	91								
Magnesium	404								
Calcium	5836								
Sulfate Sulfur	3								
Zinc	0.5								
Manganese	0.8								
Copper	0.8								
Iron	6.7								
Boron	0.4								

		FERTILIZE	R GUIDLIN	ES IN: Lbs/	Acre					
1st	Option Intende	d Crop	2n	d Option Intend	ed Crop	3r	3rd Option Intended Crop			
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Crop			Preceding Crop			Preceding Crop			
	ANT FOOD LINE RANGES	CROP REMOVAL RATES		ANT FOOD LINE RANGES	CROP REMOVAL RATES		PLANT FOOD CROP R GUIDELINE RANGES RA			
N			N			N				
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgO			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В	В		В				
None			None	None						
	l	Lime Guidelines	are for 100% Effe	ctive Calcium Carbor	nate (ECC) with a 6" Inco	rporation Depth.				

	ACTUAL A	AND SUGGE	ATION)	ES	STIMATED					
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
0.0	0 - 5	0.7	65 - 75	10.2	2 - 7	88.9	15 - 20	0.2	0 - 5	32.7

Submitted by

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

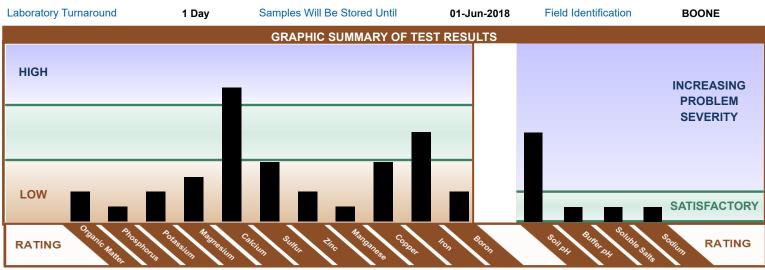
MARSDEN



Laboratory Sample # BG63979

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS										
YOUR SA											
B1_13_	B1_13_C2-3										
Soil pH	8.0										
Buffer Index	7.6										
Soluble Salts mmhos/cm	0.4										
Sodium ppm	14.8										
% Organic Matter	1.1										
ANALYSIS OF	NUTRIENT										
ELEMENTS IS											
PER MILLIO	ON (ppm)										
Nitrate N											
Phosphorus Mehlich III	3										
Potassium	83										
Magnesium	412										
Calcium	6427										
Sulfate Sulfur	7										
Zinc	0.5										
Manganese	1.2										
Copper	0.6										
Iron	11.6										
Boron	0.2										

		FERTILIZE	R GUIDLIN	ES IN: Lbs/	Acre					
1st	Option Intende	d Crop	2n	2nd Option Intended Crop			3rd Option Intended Crop			
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Crop			Preceding Crop			Preceding Cr	ор		
	ANT FOOD LINE RANGES	CROP REMOVAL RATES		ANT FOOD LINE RANGES	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES			
N			N			N				
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgO			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В			В				
None			None			None				
	l	Lime Guidelines	are for 100% Effe	ctive Calcium Carbor	nate (ECC) with a 6" Inco	rporation Depth.				

	ACTUAL A	AND SUGGE	ATION)	ES	TIMATED					
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
0.0	0 - 5	0.6	65 - 75	9.5	2 - 7	89.7	15 - 20	0.2	0 - 5	35.7

Submitted by

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

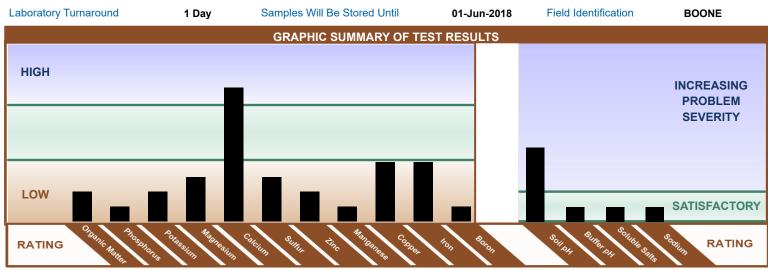
MARSDEN



Laboratory Sample # BG63980

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS									
YOUR SAMPLE NUMBER										
B1_18_	C4-3									
Soil pH	7.7									
Buffer Index	7.5									
Soluble Salts mmhos/cm	0.4									
Sodium ppm	14.1									
% Organic Matter	1.4									
ANALYSIS OF										
PER MILLIO										
Nitrate N										
Phosphorus Mehlich III	3									
Potassium	60									
Magnesium	337									
Calcium	4355									
Sulfate Sulfur	4									
Zinc	0.3									
Manganese	0.6									
Copper	0.5									
Iron	9.1									
Boron	0.2									

		FERTILIZE	R GUIDL	INES IN: Lbs	s/Acre					
1st	Option Intende	d Crop		2nd Option Inten	ded Crop	31	d Option Intend	ed Crop		
	Yield Goal			Yield Goal			Yield Goal			
	Preceding Crop			Preceding Crop			Preceding Co	тор		
	ANT FOOD LINE RANGES	CROP REMOVAL RATES	GL	PLANT FOOD JIDELINE RANGES	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES			
N			N			N				
P ₂ O ₅			P ₂ O	5		P ₂ O ₅				
K ₂ O			K ₂ O			K ₂ O				
MgO			MgC			MgO				
S			S			S				
Zn			Zn			Zn				
Mn			Mn			Mn				
Cu			Cu			Cu				
Fe			Fe			Fe				
В			В			В				
None			None	•		None				
		Lime Guidelines	are for 100%	Effective Calcium Carb	onate (ECC) with a 6" Inco	orporation Depth.		'		

	ACTUAL A	AND SUGGE	ATION)	ES	TIMATED					
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
0.0	0 - 5	0.6	65 - 75	11.2	2 - 7	87.9	15 - 20	0.2	0 - 5	24.7

Submitted by

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

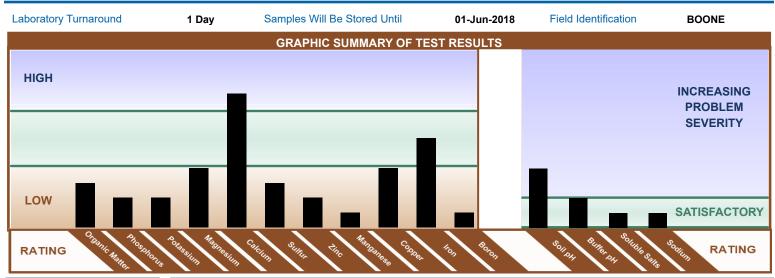
MARSDEN



Laboratory Sample # BG63981

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	REPORT OF ANALYSIS								
YOUR SA									
B2_24_C2-3									
Soil pH	7.6								
Buffer Index	7.4								
Soluble Salts	0.5								
mmhos/cm	16.0								
Sodium ppm % Organic									
Matter	1.7								
ANALYSIS OF									
ELEMENTS IS PER MILLIO									
Nitrate N									
Phosphorus Mehlich III	_								
Meniich III	5 								
Potassium	103								
Magnesium	458								
Calcium	5292								
Sulfate Sulfur	4								
Zinc	0.3								
Manganese	1.2								
Copper	0.6								
Iron	12.0								
Boron	0.2								

		FERTILIZE	R GUIDL	INES IN: Lbs	/Acre			
1st	Option Intended	d Crop		2nd Option Intend	led Crop	3r	d Option Intende	ed Crop
	Yield Goal			Yield Goa	l		Yield Goal	
	Dua sa dina Cas			Dana dia a C			Dragading Cr	
	Preceding Cro	op		Preceding C	rop		Preceding Cr	ор
	ANT FOOD	CROP REMOVAL RATES	GU	PLANT FOOD	CROP REMOVAL RATES		PLANT FOOD ELINE RANGES	CROP REMOVAL RATES
N			N			N		
P ₂ O ₅			P ₂ O	5		P ₂ O ₅		
K₂O			K ₂ O			K ₂ O		
MgO			MgO			MgO		
S			S			S		
Zn			Zn			Zn		
Mn			Mn			Mn		
Cu			Cu			Cu		
Fe			Fe			Fe		
В			В			В		
None			None	•		None		
		Lime Guidelines	are for 100%	Effective Calcium Carbo	nate (ECC) with a 6" Inco	orporation Depth.		

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED										
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil	
0.0	0 - 5	0.9	65 - 75	12.3	2 - 7	86.5	15 - 20	0.2	0 - 5	30.5	

Submitted by

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

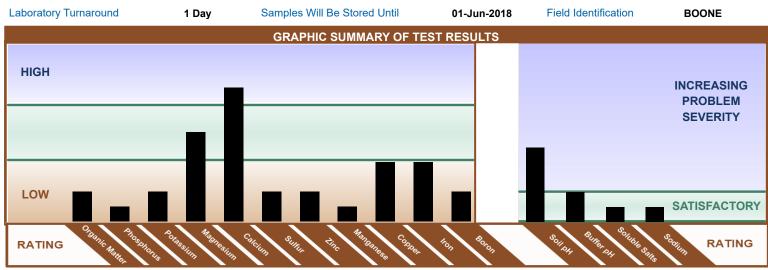
MARSDEN



Laboratory Sample # BG63982

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS									
YOUR SA										
B2_28_C4-3										
Soil pH	7.8									
Buffer Index	7.5									
Soluble Salts	0.4									
mmhos/cm Sodium ppm	18.9									
% Organic	1.3									
Matter ANALYSIS OF										
ELEMENTS IS	-									
PER MILLIO	ON (ppm)									
Nitrate N										
Phosphorus Mehlich III	3									
Potassium	77									
Magnesium	499									
Calcium	4081									
Sulfate Sulfur	2									
Zinc	0.3									
Manganese	0.9									
Copper	0.6									
Iron	8.4									
Boron	0.3									

		FERTILIZE	R GUIDL	INES IN: Lbs	/Acre			
1st	Option Intended	d Crop		2nd Option Intend	led Crop	3r	d Option Intende	ed Crop
	Yield Goal			Yield Goa	l		Yield Goal	
	Dua sa dina Cas			Dana dia a C			Dragading Cr	
	Preceding Cro	op		Preceding C	rop		Preceding Cr	ор
	ANT FOOD	CROP REMOVAL RATES	GU	PLANT FOOD	CROP REMOVAL RATES		PLANT FOOD ELINE RANGES	CROP REMOVAL RATES
N			N			N		
P ₂ O ₅			P ₂ O	5		P ₂ O ₅		
K₂O			K ₂ O			K ₂ O		
MgO			MgO			MgO		
S			S			S		
Zn			Zn			Zn		
Mn			Mn			Mn		
Cu			Cu			Cu		
Fe			Fe			Fe		
В			В			В		
None			None	•		None		
		Lime Guidelines	are for 100%	Effective Calcium Carbo	nate (ECC) with a 6" Inco	orporation Depth.		

	ACTUAL A	AND SUGGE	ATION)	ES	TIMATED					
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
0.0	0 - 5	0.8	65 - 75	16.6	2 - 7	82.3	15 - 20	0.3	0 - 5	24.8

Submitted by

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

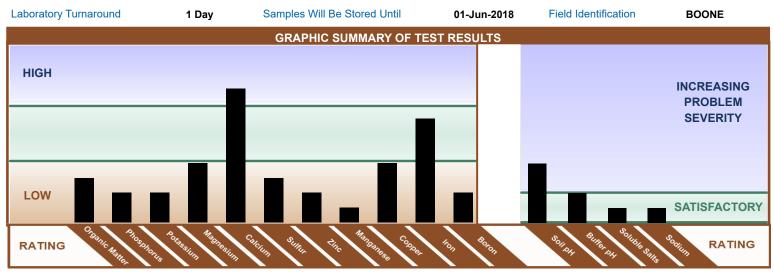
MARSDEN



Laboratory Sample # BG63983

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS
YOUR SA	
B3_34_	C2-3
Soil pH	7.5
Buffer Index	7.5
Soluble Salts	0.5
mmhos/cm Sodium ppm	13.9
% Organic	1.5
Matter ANALYSIS OF	
ELEMENTS IS	-
PER MILLIO	ON (ppm)
Nitrate N	
Phosphorus Mehlich III	5
Potassium	106
Magnesium	473
Calcium	4508
Sulfate Sulfur	4
Zinc	0.5
Manganese	1.2
Copper	1.0
Iron	14.5
Boron	0.2

		FERTILIZE	R GUIDLIN	ES IN: Lbs/	Acre			
1st	Option Intende	d Crop	2n	d Option Intend	ed Crop	3r	d Option Intende	ed Crop
	Yield Goal			Yield Goal			Yield Goal	
	Preceding Cro	pp		Preceding Cr	ор		Preceding Cr	ор
	ANT FOOD LINE RANGES	CROP REMOVAL RATES		ANT FOOD LINE RANGES	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES	
N			N			N		
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅		
K ₂ O			K ₂ O			K ₂ O		
MgO			MgO			MgO		
S			S			S		
Zn			Zn			Zn		
Mn			Mn			Mn		
Cu			Cu			Cu		
Fe			Fe			Fe		
В			В			В		
None			None			None		
	l	Lime Guidelines	are for 100% Effe	ctive Calcium Carbor	nate (ECC) with a 6" Inco	rporation Depth.		

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED									
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil
0.0	0 - 5	1.0	65 - 75	14.6	2 - 7	84.2	15 - 20	0.2	0 - 5	26.7

Submitted by

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

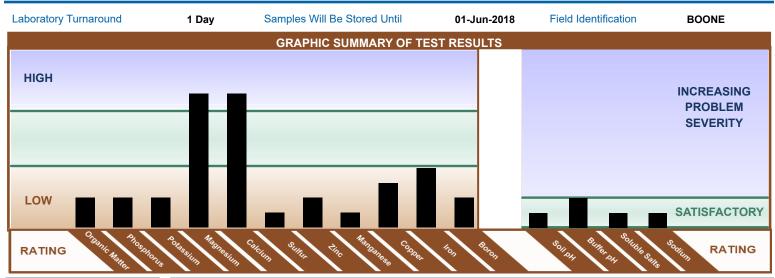
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Laboratory Sample # BG63984

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	REPORT OF ANALYSIS								
YOUR SA									
B3_37_									
Soil pH	7.2								
Buffer Index	7.4								
Soluble Salts	0.3								
mmhos/cm Sodium ppm	18.6								
% Organic									
Matter	1.4								
ANALYSIS OF ELEMENTS IS									
PER MILLIO									
Nitrate N									
Phosphorus Mehlich III	_								
	4								
Potassium	57								
Magnesium	347								
Calcium	2100								
Sulfate Sulfur	2								
Zinc	0.3								
Manganese	0.5								
Copper	0.4								
Iron	6.7								
Boron	0.3								

		FERTILIZE	R GUIDL	INES IN: Lbs	/Acre			
1st	Option Intended	d Crop		2nd Option Intend	led Crop	3r	d Option Intende	ed Crop
	Yield Goal			Yield Goa	l		Yield Goal	
	Preceding Crop			Dana dia a C			Dragading Cr	
	Preceding Crop			Preceding C	rop		Preceding Cr	ор
	ANT FOOD	CROP REMOVAL RATES	GU	PLANT FOOD	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES	
N			N			N		
P ₂ O ₅			P ₂ O	5		P ₂ O ₅		
K₂O			K ₂ O			K ₂ O		
MgO			MgO			MgO		
S			S			S		
Zn			Zn			Zn		
Mn			Mn			Mn		
Cu			Cu			Cu		
Fe			Fe			Fe		
В			В			В		
None			None	•		None		
		Lime Guidelines	are for 100%	Effective Calcium Carbo	nate (ECC) with a 6" Inco	orporation Depth.		

	ACTUAL A	AND SUGGE	ATION)	E	STIMATED					
Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	Actual %	Suggested	CEC for
Hydrogen	Hydrogen	Potassium	Potassium	Magnesium	Magnesium	Calcium	Calcium	Sodium	Sodium	Your Soil
0.1	0 - 5	1.1	65 - 75	21.0	2 - 7	77.2	15 - 20	0.6	0 - 5	13.6

Submitted by

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051 Submitted for

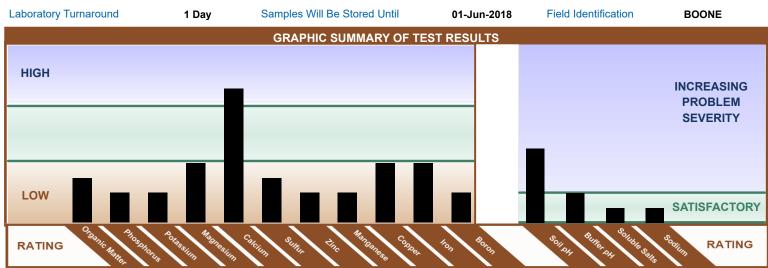
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Laboratory Sample # BG63985

Date Received Date Reported Information Sheet #

17-May-2018 18-May-2018 0517-18



REPORT OF	ANALYSIS
YOUR SA	
B4_44_	
Soil pH	7.8
Buffer Index	7.5
Soluble Salts	0.5
mmhos/cm Sodium ppm	15.1
% Organic	1.9
Matter ANALYSIS OF	NUTRIENT
ELEMENTS IS	
PER MILLIO	м (ррпі)
Nitrate N	
Phosphorus Mehlich III	8
Potassium	99
Magnesium	441
Calcium	5125
Sulfate Sulfur	4
Zinc	0.5
Manganese	1.5
Copper	0.8
Iron	9.4
Boron	0.3

		FERTILIZE	R	GUIDLINE	ES IN: Lbs/	Acre					
1st	Option Intended	d Crop		2nd	d Option Intende	ed Crop		3rd	Option Intende	ed Crop	
	Val. O. d.				V6.11.01			V:-14 O1			
	Yield Goal				Yield Goal				Yield Goal		
	Preceding Crop				Preceding Cr	ор			Preceding Cr	ор	
	ANT FOOD LINE RANGES	CROP REMOVAL RATES			ANT FOOD INE RANGES	CROP REMOVAL RATES			ANT FOOD LINE RANGES	CROP REMOVAL RATES	
N				N				N			
P ₂ O ₅				$P_{2}O_{5}$				P ₂ O ₅			
K ₂ O				K ₂ O				K ₂ O			
MgO				MgO				MgO			
S				S				S			
Zn				Zn				Zn			
Mn				Mn				Mn			
Cu				Cu				Cu			
Fe				Fe				Fe			
В				В				В			
None				None				None			
		Lime Guideline	s are	e for 100% Effec	tive Calcium Carbon	ate (ECC) with a 6" Inco	orpo	oration Depth.			

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED										
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil	
0.0	0 - 5	0.9	65 - 75	12.3	2 - 7	86.6	15 - 20	0.2	0 - 5	29.5	

Submitted by

17-May-2018

EW50010106

VIRGINIA NICHOLS 2501 AGRONOMY HALL 716 FARMHOUSE LN AMES, IA 50011-1051

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MARSDEN

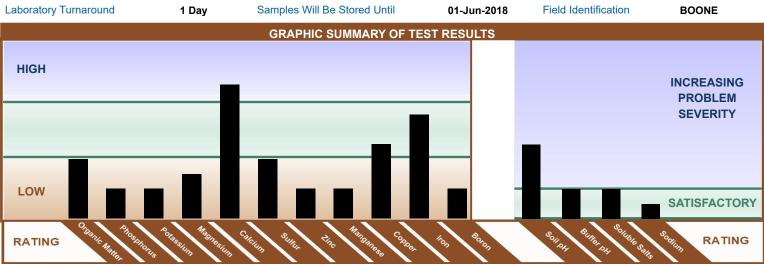


Laboratory Sample # BG63986

0517-18

Date Received Date Reported Information Sheet #

18-May-2018



REPORT OF	ANALYSIS										
YOUR SA Nume											
	B4_46_C4-3										
Soil pH	7.8										
Buffer Index	7.5										
Soluble Salts	0.6										
mmhos/cm											
Sodium ppm	15.7										
% Organic Matter	2.1										
ANALYSIS OF	NUTRIENT										
ELEMENTS IS											
PER MILLIO	ON (ppm)										
Nitrate N											
Phosphorus	_										
Mehlich III	7										
Potassium	79										
Magnesium	379										
Calcium	5172										
Sulfate Sulfur	6										
Zinc	0.5										
Manganese	2.1										
Copper	1.1										
Iron	13.1										
Boron	0.3										

	FERTILIZER GUIDLINES IN: Lbs/Acre											
1st	Option Intended	d Crop	2n	d Option Intend	ed Crop	3rd	d Option Intende	ed Crop				
	Yield Goal			Yield Goal			Yield Goal					
	Preceding Cro	р		Preceding Cr	op	Preceding Crop						
	ANT FOOD	CROP REMOVAL RATES		LANT FOOD	CROP REMOVAL RATES		PLANT FOOD GUIDELINE RANGES					
N			N			N						
P ₂ O ₅			P ₂ O ₅			P ₂ O ₅						
K ₂ O			K ₂ O			K ₂ O						
MgO			MgO			MgO						
S			S			S						
Zn			Zn			Zn						
Mn			Mn			Mn						
Cu			Cu			Cu						
Fe			Fe			Fe						
В			В			В						
None			None			None						
		Lime Guidelines	are for 100% Effe	ective Calcium Carbon	nate (ECC) with a 6" Inco	orporation Depth.						

	ACTUAL AND SUGGESTED PERCENT OF TOTAL CEC (BASE SATURATION) ESTIMATED										
Actual % Hydrogen	Suggested Hydrogen	Actual % Potassium	Suggested Potassium	Actual % Magnesium	Suggested Magnesium	Actual % Calcium	Suggested Calcium	Actual % Sodium	Suggested Sodium	CEC for Your Soil	
0.0	0 - 5	0.7	65 - 75	10.7	2 - 7	88.4	15 - 20	0.2	0 - 5	29.2	

Soil Analysis

Date Received: 17-May-2018

Date Processed:

18-May-2018

Information Sheet #

0517-18



Submitted for MARSDEN Field Identification BOONE

	Tests

Sample Number	B1_13-C2	B1_18_C	B2_24_C	B2_28-C4	B3_34_C	B3_37_C	B4_44_C	B4_46_C	B1_13_C	B1_18_C
	-1	4-1	2-1	-1	2-1	4-1	2-1	4-1	2-2	4-2
Conductivity mmho/cm	0.43	0.41	0.30	0.43	0.38	0.28	0.58	0.51	0.38	0.35