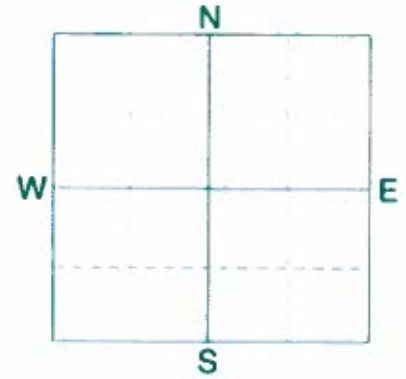




Soil Analysis by Agvise Laboratories  
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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **MJO-R 21-1**  
 SAMPLE ID **R/O/Y SAND**  
 FIELD NAME **KRAEMER 21**  
 COUNTY **BARNES**  
 TWP **RARITAN** RANGE  
 SECTION **21** QTR **NW** ACRES **156.7**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:

SUBMITTED BY: **OL0549**

REF # **3415906** BOX # **3845**  
 LAB # **NW121317**

Date Sampled

Date Received **09/28/2021**

Date Reported **09/29/2021**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLW	Low	Med	High							
Nitrate	0-6"	12 lb/acre				Corn-Grain		Corn-Grain		Wheat-Spring		
	6-24"	12 lb/acre				YIELD GOAL		YIELD GOAL		YIELD GOAL		
			*****			180 BU		200 BU		75 BU		
	0-24"	24 lb/acre				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
Olsen Phosphorus	11 ppm	*****			Control		Control		Control			
Potassium	251 ppm	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
					N	145	N	160	N	140		
Chloride	0-24"	16 lb/acre	*****		P <sub>2</sub> O <sub>5</sub>	55 Broadcast	P <sub>2</sub> O <sub>5</sub>	60 Broadcast	P <sub>2</sub> O <sub>5</sub>	50 Broadcast		
	0-6"	10 lb/acre	*****		K <sub>2</sub> O	0	K <sub>2</sub> O	0	K <sub>2</sub> O	0		
	6-24"	114 lb/acre	*****		Cl	Not Available	Cl	Not Available	Cl	24 Broadcast		
Sulfur					S	10 Broadcast	S	10 Broadcast	S	15 Broadcast		
Boron		0.6 ppm	*****		B	0	B	0	B	0		
Zinc		1.07 ppm	*****		Zn	2 Broadcast	Zn	2 Broadcast	Zn	0		
Iron		9.7 ppm	*****		Fe	0	Fe	0	Fe	0		
Manganese		2.3 ppm	*****		Mn	0	Mn	0	Mn	0		
Copper		0.48 ppm	*****		Cu	0	Cu	0	Cu	3 Broadcast		
Magnesium		433 ppm	*****		Mg	0	Mg	0	Mg	0		
Calcium		4270 ppm	*****		Lime		Lime		Lime			
Sodium		11 ppm	**									
Org.Matter		3.4 %	*****		Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
Carbonate(CCE)		4.8 %	*****					% Ca	% Mg	% K	% Na	% H
	0-6"	0.26 mmho/cm	*****		0-6" 8.0		25.6 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Soil Salts	6-24"	0.33 mmho/cm	*****		6-24" 8.3			83.2	14.1	2.5	0.2	0.0

General Comments: Soil texture is not estimated on high pH soils.

Crop 1: Limited data on crop response to chloride. Previous crop nitrogen credit: 30 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 67 K2O = 41

Crop 2: Limited data on crop response to chloride. Previous crop nitrogen credit: 30 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 74 K2O = 46

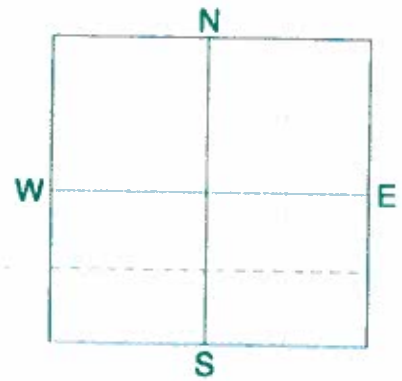
Crop 3: 52 lb potassium chloride (0-0-60-50Cl) = 24 lb chloride. Previous crop nitrogen credit: 20.1 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 47 K2O = 28



### SOIL TEST REPORT

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FIELD ID **MJO-R 21-1**  
 SAMPLE ID **LT GREENS**  
 FIELD NAME **KRAEMER 21**  
 COUNTY **BARNES**  
 TWP **RARITAN** RANGE  
 SECTION **21** QTR **NW** ACR. **156.7**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:

SUBMITTED BY: **C .0549**

REF # **3415907** BOX # **4000**  
 LAB # **NW121318**

Date Sampled

Date Received **09/28/2021**

Date Reported **09/29/2021**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Flow Low Med High	Corn-Grain		Corn-Grain		Wheat-Spring			
Nitrate	0-6" 6-24"	11 lb/acre 9 lb/acre	YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24"	20 lb/acre	180 BU		200 BU		75 BU			
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Control		Control		Control			
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen	7 ppm	N	150	N	165	N	140		
Potassium		199 ppm	P <sub>2</sub> O <sub>5</sub>	80 Broadcast	P <sub>2</sub> O <sub>5</sub>	90 Broadcast	P <sub>2</sub> O <sub>5</sub>	65 Broadcast		
Chloride	0-24"	60 lb/acre	K <sub>2</sub> O	20 Broadcast	K <sub>2</sub> O	20 Broadcast	K <sub>2</sub> O	10 Broadcast		
Sulfur	0-6" 6-24"	120 +lb/acre 360 +lb/acre	Cl	Not Available	Cl	Not Available	Cl	0		
Boron		0.8 ppm	S	0	S	0	S	0		
Zinc		0.53 ppm	B	0	B	0	B	0		
Iron		18.9 ppm	Zn	5 Broadcast	Zn	5 Broadcast	Zn	0		
Manganese		3.5 ppm	Fe	0	Fe	0	Fe	0		
Copper		0.68 ppm	Mn	0	Mn	0	Mn	0		
Magnesium		760 ppm	Cu	0	Cu	0	Cu	2 Broadcast (Trial)		
Calcium		4664 ppm	Mg	0	Mg	0	Mg	0		
Sodium		54 ppm	Lime		Lime		Lime			
Org. Matter		3.8 %								
Carbonate(CCE)		4.1 %								
Sol. Salts	0-6" 6-24"	1.16 mmho/cm 0.96 mmho/cm	Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
						% Ca	% Mg	% K	% Na	% H
			0-6" 7.6		30.4 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
			6-24" 8.1			76.7	20.8	1.7	0.8	0.0

General Comments: Fine-textured (CEC: 31+ meq)

Crop 1: Limited data on crop response to chloride. Previous crop nitrogen credit: 30 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 67 K2O = 41

Crop 2: Limited data on crop response to chloride. Previous crop nitrogen credit: 30 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 74 K2O = 46

Crop 3: Previous crop nitrogen credit: 20.1 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 47 K2O = 28



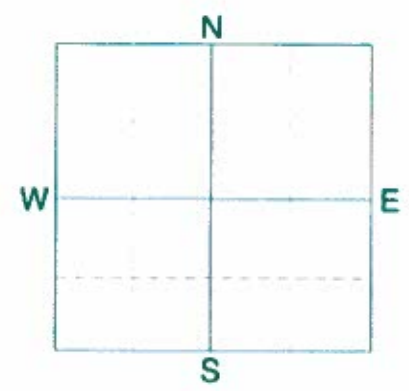
13 2021



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### SOIL TEST REPORT

FIELD ID **MJO-R 21-1**  
 SAMPLE ID **DK GRNS**  
 FIELD NAME **KRAEMER 21**  
 COUNTY **BARNES**  
 TWP **RARITAN** RANGE  
 SECTION **21** QTR **NW** ACRES **156.7**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:

SUBMITTED BY: **OL0549**

REF # **3415908** BOX # **4000**  
 LAB # **NW121319**

Date Sampled \_\_\_\_\_ Date Received **09/28/2021** Date Reported **09/29/2021**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice				
		LOW	Low	Med	High											
Nitrate	0-6"	*****				Corn-Grain			Corn-Grain			Wheat-Spring				
	6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL				
	14 lb/acre	*****				180 BU			200 BU			75 BU				
	15 lb/acre	*****				SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES				
	29 lb/acre	*****				Central			Central			Central				
		*****				LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION			
Olsen Phosphorus	18 ppm	*****				N	140		N	155		N	135			
Potassium	162 ppm	*****				P <sub>2</sub> O <sub>5</sub>	20	Broadcast	P <sub>2</sub> O <sub>5</sub>	20	Broadcast	P <sub>2</sub> O <sub>5</sub>	25	Broadcast		
Chloride	0-24"	*****				K <sub>2</sub> O	45	Broadcast	K <sub>2</sub> O	50	Broadcast	K <sub>2</sub> O	10	Broadcast		
	0-6"	*****				Cl		Not Available	Cl		Not Available	Cl	0			
	120 +lb/acre	*****				S	0		S	0		S	0			
	360 +lb/acre	*****				B	0		B	0		B	0			
Sulfur	0.7 ppm	*****				Zn	4	Broadcast	Zn	4	Broadcast	Zn	0			
Boron	0.89 ppm	*****				Fe	0		Fe	0		Fe	0			
Zinc	35.2 ppm	*****				Mn	0		Mn	0		Mn	0			
Iron	6.5 ppm	*****				Cu	0		Cu	0		Cu	2	Broadcast (Trial)		
Manganese	0.63 ppm	*****				Mg	0		Mg	0		Mg	0			
Copper	800 ppm	*****				Lime			Lime			Lime				
Magnesium	3885 ppm	*****				Soil pH	Buffer pH		Cation Exchange Capacity			% Base Saturation (Typical Range)				
Calcium	42 ppm	*****				0-6"	7.6		26.7 meq			% Ca	% Mg	% K	% Na	% H
Sodium	3.7 %	*****				6-24"	7.8		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)			
Org.Matter	1.5 %	*****							72.8	25.0	1.6	0.7	0.0			
Carbonate(CCE)	0.68 mmho/cm	*****														
	0.72 mmho/cm	*****														
Sol. Salts		*****														

**General Comments:** Medium-textured (CEC: 11-30 meq)  
**Crop 1:** Limited data on crop response to chloride. Previous crop nitrogen credit: 30 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 67 K2O = 41  
**Crop 2:** Limited data on crop response to chloride. Previous crop nitrogen credit: 30 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 74 K2O = 46  
**Crop 3:** Previous crop nitrogen credit: 20.1 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 47 K2O = 28

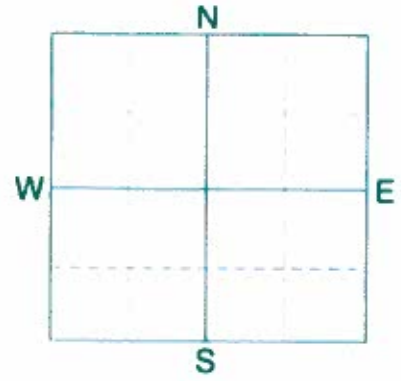
15 2022



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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **MJO-R 21-1**  
 SAMPLE ID **MJO-R 21-1**  
 FIELD NAME **KRAEMER 21**  
 COUNTY **BARNES**  
 TWP **RARITAN** RANGE  
 SECTION **21** QTR **NW** ACRES **156.7**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:

SUBMITTED BY: **OL0549**

REF # **3798375** BOX # **20067**  
 LAB # **NW157755**

Date Sampled

Date Received **10/13/2022**

Date Reported **10/17/2022**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		Low	Med	High										
Nitrate	0-6"	*****				Wheat-Spring	Corn-Grain			Sunflower				
	6-24"	*****				YIELD GOAL	YIELD GOAL			YIELD GOAL				
	0-24"	*****				80 BU	200 BU			3000 LBS				
		*****				SUGGESTED GUIDELINES	SUGGESTED GUIDELINES			SUGGESTED GUIDELINES				
		*****				Control	Control			Control				
		*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
		*****				N 160		N 170		N 110				
Phosphorus	Olsen 9 ppm	*****				P <sub>2</sub> O <sub>5</sub> 60	Broadcast	P <sub>2</sub> O <sub>5</sub> 75	Broadcast	P <sub>2</sub> O <sub>5</sub> 45	Broadcast			
Potassium	198 ppm	*****				K <sub>2</sub> O 10	Broadcast	K <sub>2</sub> O 20	Broadcast	K <sub>2</sub> O 0				
Chloride	0-6"	*****				Cl 40	Broadcast	Cl	Not Available	Cl		Not Available		
	6-24"	*****				S 5	Broadcast	S 0		S 0				
Sulfur	0-6"	*****				B 0		B 0		B 1	Broadcast			
	6-24"	*****				Zn 0		Zn 5	Broadcast	Zn 1	Broadcast			
Boron	0.6 ppm	*****				Fe 0		Fe 0		Fe 0				
Zinc	0.55 ppm	*****				Mn 0		Mn 0		Mn 0				
Iron	25.2 ppm	*****				Cu 2	Broadcast (Trial)	Cu 0		Cu 1	Broadcast (Trial)			
Manganese	3.6 ppm	*****				Mg 0		Mg 0		Mg 0				
Copper	0.6 ppm	*****				Lime		Lime		Lime				
Magnesium	511 ppm	*****												
Calcium	4220 ppm	*****												
Sodium	15 ppm	*****												
Org.Matter	3.1 %	*****												
Carbonate(CCE)	3.5 %	*****												
Sol. Salts	0-6"	*****												
	6-24"	*****												

General Comments: Soil texture is not estimated on high pH soils.  
 Haney Soil Test Report will be mailed.

- Crop 1: 88 lb potassium chloride (0-0-60-50Cl) = 40 lb chloride. Previous crop nitrogen credit: 20.1 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30
- Crop 2: Limited data on crop response to chloride. Previous crop nitrogen credit: 30 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 74 K2O = 46
- Crop 3: Limited data on crop response to chloride. Previous crop nitrogen credit: 30 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 27 K2O = 33