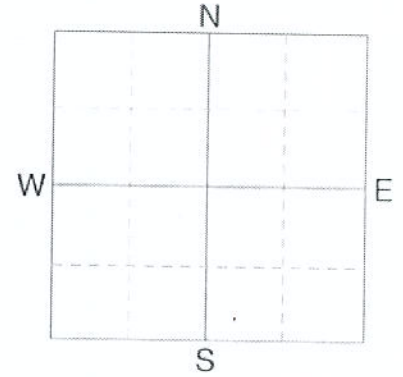




Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136584**
 SAMPLE ID **Deleeuw East**
 FIELD NAME **DeLeeuw East /**
 COUNTY
 TWP **8** RANGE **4W**
 SECTION **7** QTR **NE** ACRES **76**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2153895** BOX # **0**
 LAB # **NW193052**

Date Sampled **11/03/2017**

Date Received **11/07/2017**

Date Reported **11/13/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	*****				N		N		N				
Phosphorus	Olsen	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium		*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24"	*****				Cl		Cl		Cl				
Sulfur	0-6"	*****				S		S		S				
	6-24"	*****				B		B		B				
Boron		*****				Zn		Zn		Zn				
Zinc		*****				Fe		Fe		Fe				
Iron		*****				Mn		Mn		Mn				
Manganese		*****				Cu		Cu		Cu				
Copper		*****				Mg		Mg		Mg				
Magnesium		*****				Lime		Lime		Lime				
Calcium		*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium		*****				Buffer pH			% Ca	% Mg	% K	% Na	% H	
Org.Matter		*****							(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
Carbonate(CCE)		*****							67.7	24.1	6.2	1.9		
Sol. Salts	0-6"	*****												
	6-24"	*****												

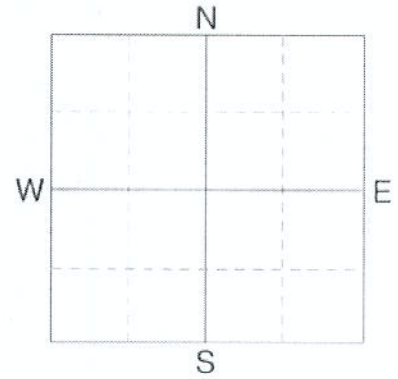
General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)



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

SOIL TEST REPORT

FIELD ID **136585** 2
 SAMPLE ID **Deleeuw West**
 FIELD NAME **DeLeeuw West**
 COUNTY
 TWP **8** RANGE **4W** 200
 SECTION **7** QTR **NW** ACRES **2.00**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB ROG ONO

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2153893** BOX # **0**
 LAB # **NW193050**

Date Sampled **11/03/2017**

Date Received **11/07/2017**

Date Reported **11/13/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	*****				N		N		N				
Phosphorus	Olsen 35 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	194 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24" 292 lb/ac	*****				Cl		Cl		Cl				
Sulfur	0-6"	*****				S		S		S				
	6-24" 150 lb/ac	*****				B		B		B				
Boron	1.3 ppm	*****				Zn		Zn		Zn				
Zinc	3.19 ppm	*****				Fe		Fe		Fe				
Iron	25.0 ppm	*****				Mn		Mn		Mn				
Manganese	2.2 ppm	*****				Cu		Cu		Cu				
Copper	1.27 ppm	*****				Mg		Mg		Mg				
Magnesium	450 ppm	*****				Lime		Lime		Lime				
Calcium	2061 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	47 ppm	*****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Org.Matter	2.2 %	*****				0-6" 8.2		14.8 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)	1.0 %	*****				6-24" 8.5				69.8	25.4	3.4	1.4	
Sol. Salts	0-6"	*****												
	6-24" 0.2 mmho/cm	*****												
	0.27 mmho/cm	*****												

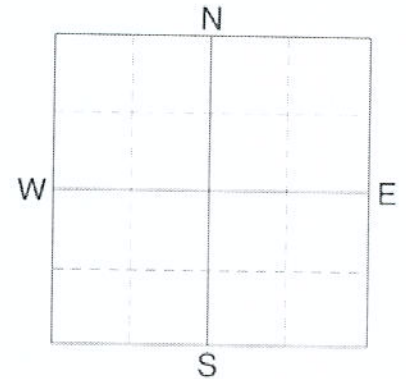
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136587**
 SAMPLE ID **Acrss RD RL**
 FIELD NAME **Across Rd SA&RL** 7
 COUNTY _____
 TWP **8** RANGE **5W** 385
 SECTION **33** QTR **N** ACRES **286**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: **MA3960**
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2125355** BOX # **0**
 LAB # **NW166890**

Date Sampled **10/24/2017** Date Received **10/27/2017** Date Reported **11/2/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL		
Nitrate	0-6" 6-24"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
	0-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen 47 ppm	*****				N		N		N		
Potassium	173 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅		
Chloride	0-24" 300 lb/ac	*****				K ₂ O		K ₂ O		K ₂ O		
Sulfur	0-6" 6-24" 70 lb/ac 84 lb/ac	*****				Cl		Cl		Cl		
Boron	1.4 ppm	*****				S		S		S		
Zinc	2.71 ppm	*****				B		B		B		
Iron	37.2 ppm	*****				Zn		Zn		Zn		
Manganese	3.7 ppm	*****				Fe		Fe		Fe		
Copper	0.77 ppm	*****				Mn		Mn		Mn		
Magnesium	659 ppm	*****				Cu		Cu		Cu		
Calcium	4003 ppm	*****				Mg		Mg		Mg		
Sodium	70 ppm	*****				Lime		Lime		Lime		
Org.Matter	3.6 %	*****				Soil pH		% Base Saturation (Typical Range)				
Carbonate(CCE)	4.9 %	*****				Buffer pH	Cation Exchange Capacity	% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.34 mmho/cm 6-24" 0.19 mmho/cm	*****				0-6" 8.4	26.3 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)

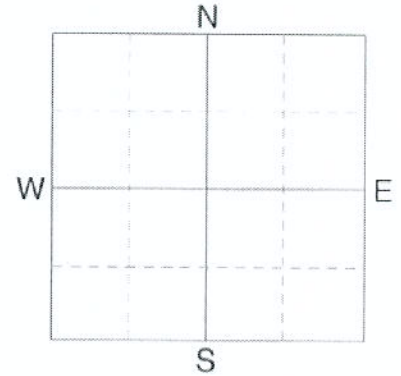
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **Across RD SA 8**
 SAMPLE ID **Across RD SA**
 FIELD NAME **Across RD SA**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **33** QTR **NE** ACRES **40**
 PREV. CROP



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2112120** BOX # **0**
 LAB # **NW150968**

Date Sampled **10/20/2017**

Date Received **10/21/2017**

Date Reported **10/27/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	*****				N		N		N				
Phosphorus	Olsen 31 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	187 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24" 624 lb/ac	*****				Cl		Cl		Cl				
Sulfur	0-6"	*****				S		S		S				
	6-24"	*****				B		B		B				
Boron	2.2 ppm	*****				Zn		Zn		Zn				
Zinc	2.20 ppm	*****				Fe		Fe		Fe				
Iron	19.9 ppm	*****				Mn		Mn		Mn				
Manganese	4.3 ppm	*****				Cu		Cu		Cu				
Copper	0.86 ppm	*****				Mg		Mg		Mg				
Magnesium	890 ppm	*****				Lime		Lime		Lime				
Calcium	4294 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	102 ppm	*****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Org.Matter	3.9 %	*****						29.8 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)	4.4 %	*****								72.0	24.9	1.6	1.5	
Sol. Salts	0-6"	*****												
	6-24"	*****												

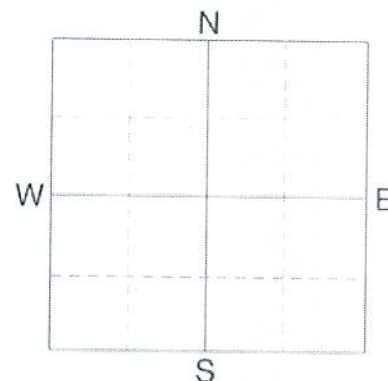
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136588 10**
 SAMPLE ID **Acrrs RD Shds Cult**
 FIELD NAME **Across Rd Sheds Cult**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **33** QTR **SW** ACRES **120/80**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG ONO**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2125352** BOX # **0**
 LAB # **NW166892**

Date Sampled **10/24/2017** Date Received **10/27/2017** Date Reported **11/2/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL			
Nitrate	0-6" 23 lb/ac	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	6-24" 24 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
	0-24" 47 lb/ac					N		N		N			
Phosphorus	Olsen 41 ppm	*****					P ₂ O ₅		P ₂ O ₅				
Potassium	249 ppm	*****											
Chloride	0-24" 156 lb/ac	*****											
	0-6" 60 lb/ac	*****											
Sulfur	6-24" 78 lb/ac	*****											
	Boron	1.1 ppm	*****										
Zinc	2.18 ppm	*****											
Iron	67.8 ppm	*****											
Manganese	3.4 ppm	*****											
Copper	1.24 ppm	*****											
Magnesium	462 ppm	*****											
Calcium	2513 ppm	*****											
Sodium	53 ppm	*****											
Org. Matter	4.1 %	*****											
Carbonate(CCE)	1.3 %	*****											
Sol. Salts	0-6" 0.3 mmho/cm	*****				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	6-24" 0.15 mmho/cm	***				0-6" 8.2		17.3 meq	% Ca	% Mg	% K	% Na	% H
						6-24" 8.2			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
									72.7	22.3	3.7	1.3	

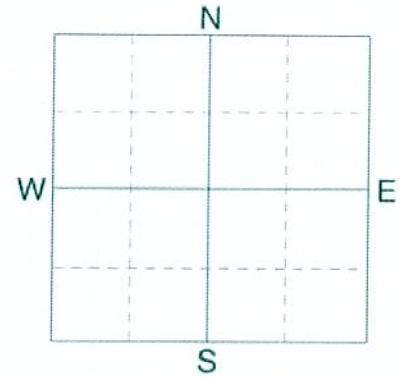
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **FLOWER SHOP**
 SAMPLE ID
 FIELD NAME **//**
 COUNTY **6W**
 TWP **8** RANGE
 SECTION **18** QTR ACRES **9**
 PREV. CROP **Corn-Grain** **51**



SUBMITTED FOR:
HALARDA FARMS

SUBMITTED BY: **FI6625**
FIELD 2 FIELD AGRONOMY IN
JASON VOOGT
BOX 1931
CARMAN, MB **ROG 030**

REF # **18951845** BOX # **0**
 LAB # **NW214129**

Date Sampled **12/05/2017** Date Received **12/06/2017** Date Reported **12/12/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice						
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL						
		*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
		LB/ACRE		APPLICATION		LB/ACRE		APPLICATION		LB/ACRE		APPLICATION				
Nitrate	0-6"	22 lb/ac					N		N		N					
	6-24"	21 lb/ac					P ₂ O ₅		P ₂ O ₅		P ₂ O ₅					
	0-24"	43 lb/ac					K ₂ O		K ₂ O		K ₂ O					
Phosphorus	Olsen	21 ppm					Cl		Cl		Cl					
Potassium		147 ppm					S		S		S					
Chloride	0-24"	1768 lb/ac					B		B		B					
	0-6"	120 +lb/ac					Zn		Zn		Zn					
Sulfur	6-24"	342 lb/ac					Fe		Fe		Fe					
		2.7 ppm					Mn		Mn		Mn					
Boron		2.74 ppm					Cu		Cu		Cu					
Zinc		2.74 ppm					Mg		Mg		Mg					
Iron		24.0 ppm					Lime		Lime		Lime					
Manganese		7.6 ppm					Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Copper		1.5 ppm					0-6"	8.5			34.5 meq	% Ca	% Mg	% K	% Na	% H
Magnesium		1412 ppm					6-24"	8.4				(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Calcium		4309 ppm										62.5	34.1	1.1	2.3	
Sodium		185 ppm														
Org.Matter		3.8 %														
Carbonate(CCE)		12.4 %														
Sol. Salts	0-6"	1.56 mmho/cm														
	6-24"	1.25 mmho/cm														

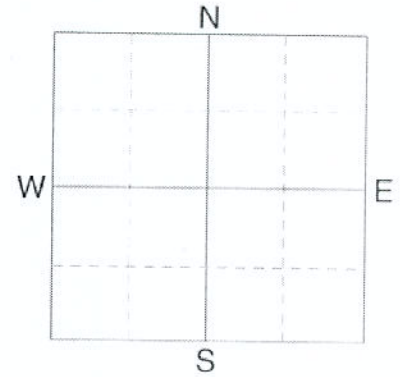
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136590A** 12
 SAMPLE ID **M Leyen N of Tracks**
 FIELD NAME **M Leyen N of Tracks**
 COUNTY
 TWP **8** RANGE **7W** **52**
 SECTION **13** QTR **NE** ACRES **3.90**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **1954605** BOX # **0**
 LAB # **NW47768**

Date Sampled **08/23/2017**

Date Received **08/25/2017**

Date Reported **10/27/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice						
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL						
Nitrate	0-6"					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
	6-24"					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
	0-24"					N		N		N						
Phosphorus	Olsen					P ₂ O ₅		P ₂ O ₅		P ₂ O ₅						
Potassium						K ₂ O		K ₂ O		K ₂ O						
Chloride	0-24"					Cl		Cl		Cl						
Sulfur	0-6"					S		S		S						
	6-24"					B		B		B						
Boron						Zn		Zn		Zn						
Zinc						Fe		Fe		Fe						
Iron						Mn		Mn		Mn						
Manganese						Cu		Cu		Cu						
Copper						Mg		Mg		Mg						
Magnesium						Lime		Lime		Lime						
Calcium						Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium					% Ca							% Mg	% K	% Na	% H	
Org.Matter						0-6"	7.1	11.6 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)			
Carbonate(CCE)					6-24"	7.8	75.3							20.7	2.9	1.1
Sol. Salts	0-6"															
	6-24"															

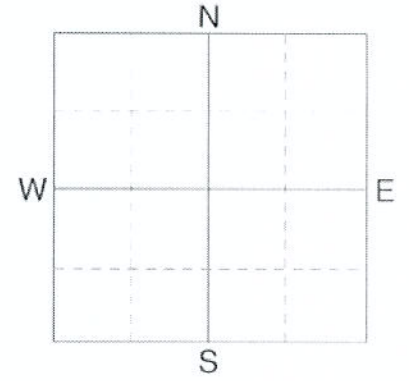
General Comments: Soil Texture: Sand: 84.0 % Silt: 12.0 % Clay: 4.0 %. USDA Textural class: Loamy Sand .



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136590B** *13*
 SAMPLE ID **M Leyen S Tracks**
 FIELD NAME **M Leyen S of Tracks**
 COUNTY
 TWP **8** RANGE **7W** *48*
 SECTION **13** QTR **NE** ACRES ~~13.6~~
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB R0G 0N0

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2167484** BOX # **0**
 LAB # **NW206971**

Date Sampled **11/18/2017** Date Received **11/22/2017** Date Reported **11/28/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	*****				N		N		N				
Phosphorus	Olsen	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium		*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24"	*****				Cl		Cl		Cl				
Sulfur	0-6"	*****				S		S		S				
	6-24"	*****				B		B		B				
Boron		*****				Zn		Zn		Zn				
Zinc		*****				Fe		Fe		Fe				
Iron		*****				Mn		Mn		Mn				
Manganese		*****				Cu		Cu		Cu				
Copper		*****				Mg		Mg		Mg				
Magnesium		*****				Lime		Lime		Lime				
Calcium		*****				Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium		*****								% Ca	% Mg	% K	% Na	% H
Org.Matter		*****				0-6" 7.9		23.8 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)		*****				6-24" 7.9				81.9	16.0	1.5	0.6	
Sol. Salts	0-6"	*****												
	6-24"	*****												

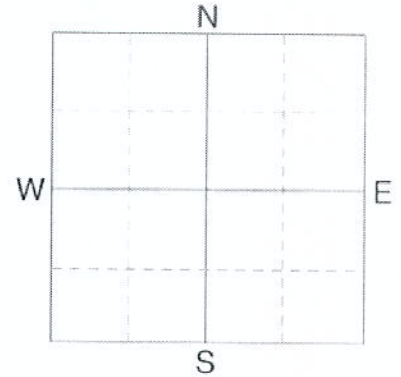
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136591** *14*
 SAMPLE ID **M Leyen Big**
 FIELD NAME **M Leyen Big**
 COUNTY
 TWP **8** RANGE **6W**
 SECTION **18** QTR **W** ACRES **140**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170073** BOX # **0**
 LAB # **NW209848**

Date Sampled **11/21/2017** Date Received **11/28/2017** Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL			
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
	0-24"	*****				N		N		N			
Phosphorus	Olsen 18 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Potassium	147 ppm	*****				K ₂ O		K ₂ O		K ₂ O			
Chloride	0-24" 236 lb/ac	*****				Cl		Cl		Cl			
Sulfur	0-6" 66 lb/ac 6-24" 90 lb/ac	*****				S		S		S			
Boron	1.5 ppm	*****				B		B		B			
Zinc	2.23 ppm	*****				Zn		Zn		Zn			
Iron	36.0 ppm	*****				Fe		Fe		Fe			
Manganese	3.8 ppm	*****				Mn		Mn		Mn			
Copper	1.47 ppm	*****				Cu		Cu		Cu			
Magnesium	697 ppm	*****				Mg		Mg		Mg			
Calcium	4939 ppm	*****				Lime		Lime		Lime			
Sodium	71 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Org.Matter	3.7 %	*****				Buffer pH			% Ca	% Mg	% K	% Na	% H
Carbonate(CCE)	4.6 %	*****						31.2 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Sol. Salts	0-6" 0.34 mmho/cm 6-24" 0.21 mmho/cm	*****							79.2	18.6	1.2	1.0	

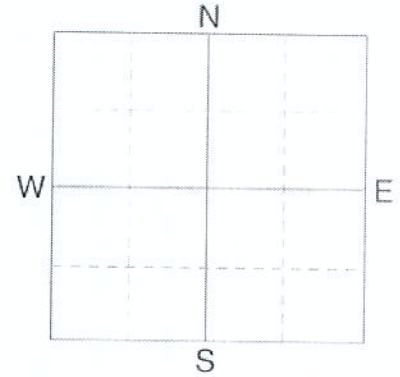
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136592**
 SAMPLE ID **Marcel's #15**
 FIELD NAME **Marcel's**
 COUNTY
 TWP **8** RANGE **6W**
 SECTION **31** QTR **SW** ACRES **110**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **1956968** BOX # **0**
 LAB # **NW61344**

Date Sampled **08/24/2017**

Date Received **09/09/2017**

Date Reported **10/25/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	0-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Olsen Phosphorus	23 ppm	*****				N		N		N				
Potassium	133 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Chloride	96 lb/ac	*****				K ₂ O		K ₂ O		K ₂ O				
Sulfur	86 lb/ac 216 lb/ac	*****				Cl		Cl		Cl				
Boron	0.9 ppm	*****				S		S		S				
Zinc	2.54 ppm	*****				B		B		B				
Iron	78.0 ppm	*****				Zn		Zn		Zn				
Manganese	3.3 ppm	*****				Fe		Fe		Fe				
Copper	1.04 ppm	*****				Mn		Mn		Mn				
Magnesium	339 ppm	*****				Cu		Cu		Cu				
Calcium	2685 ppm	*****				Mg		Mg		Mg				
Sodium	44 ppm	*****				Lime		Lime		Lime				
Org.Matter	2.9 %	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	0.6 %	****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0.39 mmho/cm 0.31 mmho/cm	*****				0-6" 7.4		16.8 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
		*****				6-24" 8.0				80.0	16.8	2.0	1.1	

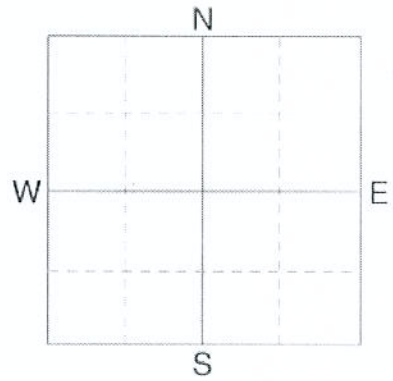
General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136593**
 SAMPLE ID **Robidoux 16**
 FIELD NAME **Robidoux**
 COUNTY
 TWP **8** RANGE **6W**
 SECTION **19** QTR **W** ACRES **174**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **1954608** BOX # **0**
 LAB # **NW47767**

Date Sampled **08/23/2017** Date Received **08/25/2017** Date Reported **10/27/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Low	Low	Med	High								
Nitrate	0-6"	12 lb/ac				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	6-24"	27 lb/ac	*****			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	0-24"	39 lb/ac				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
						N		N		N			
Phosphorus	Olsen	14 ppm	*****				P ₂ O ₅		P ₂ O ₅				
Potassium		167 ppm	*****				K ₂ O		K ₂ O				
Chloride	0-24"	228 lb/ac	*****				Cl		Cl				
Sulfur	0-6"	106 lb/ac	*****				S		S				
	6-24"	360 +lb/ac	*****				B		B				
Boron		1.2 ppm	*****				Zn		Zn				
Zinc		1.80 ppm	*****				Fe		Fe				
Iron		17.6 ppm	*****				Mn		Mn				
Manganese		1.9 ppm	*****				Cu		Cu				
Copper		0.85 ppm	*****				Mg		Mg				
Magnesium		373 ppm	*****				Lime		Lime				
Calcium		3738 ppm	*****										
Sodium		42 ppm	*****										
Org.Matter		3.2 %	*****										
Carbonate(CCE)		1.4 %	*****										
Sol. Salts	0-6"	0.53 mmho/cm	*****			Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)			
	6-24"	0.51 mmho/cm	*****			0-6" 7.9		22.4 meq	% Ca	% Mg	% K	% Na	% H
						6-24" 8.2			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
									83.4	13.9	1.9	0.8	

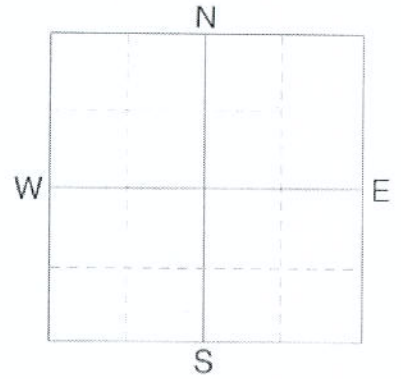
General Comments: Soil Texture: Sand: 80.0 % Silt: 14.0 % Clay: 6.0 %. USDA Textural class: Loamy Sand .



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

SOIL TEST REPORT

FIELD ID **Esau Pasture**
 SAMPLE ID **Esau Pasture** 18
 FIELD NAME **Esau Pasture**
 COUNTY
 TWP **8** RANGE **5**
 SECTION **30** QTR **NE** ACRES **120**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2167485** BOX # **0**
 LAB # **NW206968**

Date Sampled **11/18/2017**

Date Received **11/22/2017**

Date Reported **11/28/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL			
Nitrate	0-6"	20 lb/ac				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	6-24"	36 lb/ac	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
	0-24"	56 lb/ac				N		N		N			
Phosphorus	Olsen	15 ppm	*****			P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Potassium		33 ppm	*****			K ₂ O		K ₂ O		K ₂ O			
Chloride	0-24"	20 lb/ac	*****			Cl		Cl		Cl			
	0-6"	66 lb/ac	*****			S		S		S			
Sulfur	6-24"	66 lb/ac	*****			B		B		B			
		0.7 ppm	*****			Zn		Zn		Zn			
Zinc		0.84 ppm	*****			Fe		Fe		Fe			
Iron		32.9 ppm	*****			Mn		Mn		Mn			
Manganese		2.4 ppm	*****			Cu		Cu		Cu			
Copper		0.29 ppm	*****			Mg		Mg		Mg			
Magnesium		410 ppm	*****			Lime		Lime		Lime			
Calcium		4169 ppm	*****			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
Sodium		27 ppm	****						% Ca	% Mg	% K	% Na	% H
Org.Matter		3.1 %	*****			0-6"	8.1	24.5 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)		4.2 %	*****			6-24"	8.2		85.2	14.0	0.3	0.5	
Sol. Salts	0-6"	0.37 mmho/cm	*****										
	6-24"	0.18 mmho/cm	****										

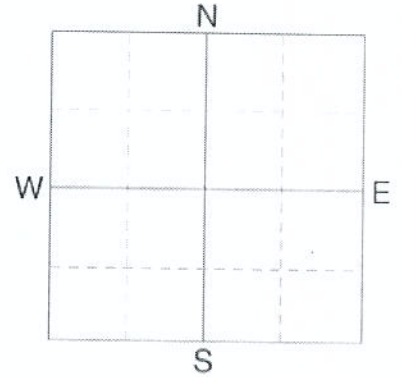
General Comments: Texture is not estimated on high pH soils.



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

SOIL TEST REPORT

FIELD ID **136595** *22*
 SAMPLE ID **Friesen E**
 FIELD NAME **Friesen East**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **13** QTR **W** ACRES **210**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2167483** BOX # **0**
 LAB # **NW206970**

Date Sampled **11/18/2017** Date Received **11/22/2017** Date Reported **11/28/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6" 23 lb/ac	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24" 33 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24" 56 lb/ac					N		N		N				
Phosphorus	Olsen 17 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	89 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24" 100 lb/ac	*****				Cl		Cl		Cl				
Sulfur	0-6" 42 lb/ac	*****				S		S		S				
	6-24" 72 lb/ac					B		B		B				
Boron	0.5 ppm	*****				Zn		Zn		Zn				
Zinc	1.28 ppm	*****				Fe		Fe		Fe				
Iron	23.6 ppm	*****				Mn		Mn		Mn				
Manganese	2.0 ppm	*****				Cu		Cu		Cu				
Copper	0.49 ppm	*****				Mg		Mg		Mg				
Magnesium	243 ppm	*****				Lime		Lime		Lime				
Calcium	2058 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	22 ppm	***				Buffer pH				% Ca	% Mg	% K	% Na	% H
Org.Matter	1.8 %	*****				0-6" 7.9		12.6 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)	0.9 %	*****				6-24" 8.2				81.4	16.0	1.8	0.8	
Sol. Salts	0-6" 0.25 mmho/cm	*****												
	6-24" 0.17 mmho/cm													

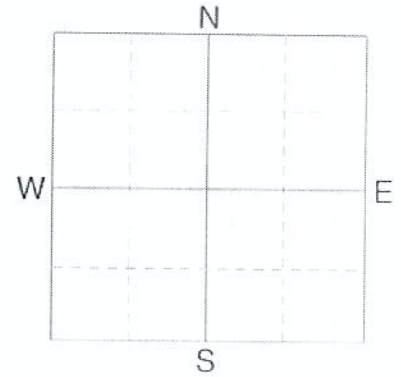
General Comments: Texture is not estimated on high pH soils.



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

SOIL TEST REPORT

FIELD ID **136596**
 SAMPLE ID **Friesen W** *NORTH Half*
 FIELD NAME **Friesen West** **(24)**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **14** QTR. ACRES **2.80**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2167491** BOX # **0**
 LAB # **NW206967**

Date Sampled **11/18/2017**

Date Received **11/22/2017**

Date Reported **11/28/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	*****				N		N		N				
Olsen Phosphorus	16 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	105 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	644 lb/ac	*****				Cl		Cl		Cl				
Sulfur	0-6"	*****				S		S		S				
	6-24"	*****				B		B		B				
Boron	1.5 ppm	*****				Zn		Zn		Zn				
Zinc	1.68 ppm	*****				Fe		Fe		Fe				
Iron	20.5 ppm	*****				Mn		Mn		Mn				
Manganese	2.2 ppm	*****				Cu		Cu		Cu				
Copper	1.31 ppm	*****				Mg		Mg		Mg				
Magnesium	843 ppm	*****				Lime		Lime		Lime				
Calcium	3282 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	93 ppm	*****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Org.Matter	2.6 %	*****						24.1 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)	2.0 %	*****								68.1	29.1	1.1	1.7	
Sol. Salts	0-6"	*****												
	6-24"	*****												

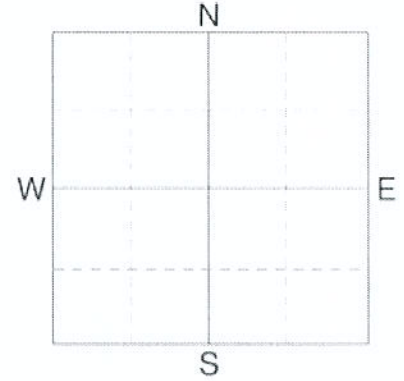
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136598** (30)
 SAMPLE ID **Marcel's Hwy 22**
 FIELD NAME **Marcel's Hwy**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **27** QTR **SE** ACRES **35**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2119296** BOX # **0**
 LAB # **NW166942**

Date Sampled **10/23/2017**

Date Received **10/27/2017**

Date Reported **11/2/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		V.Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-6" 40 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	6-24" 33 lb/ac	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Nitrate	0-24" 73 lb/ac					N		N		N			
Phosphorus	Olsen 36 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Potassium	163 ppm	*****				K ₂ O		K ₂ O		K ₂ O			
Chloride	0-24" 688 lb/ac	*****				Cl		Cl		Cl			
Sulfur	0-6" 60 lb/ac	*****				S		S		S			
	6-24" 102 lb/ac	*****				B		B		B			
Boron	1.2 ppm	*****				Zn		Zn		Zn			
Zinc	1.78 ppm	*****				Fe		Fe		Fe			
Iron	43.2 ppm	*****				Mn		Mn		Mn			
Manganese	2.4 ppm	*****				Cu		Cu		Cu			
Copper	0.54 ppm	*****				Mg		Mg		Mg			
Magnesium	504 ppm	*****				Lime		Lime		Lime			
Calcium	3421 ppm	*****											
Sodium	60 ppm	*****											
Org.Matter	2.4 %	*****											
Carbonate(CCE)	2.5 %	*****											
	0-6" 0.4 mmho/cm	*****				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	6-24" 0.22 mmho/cm	*****				0-6" 8.0		22.0 meq	% Ca	% Mg	% K	% Na	% H
Sol. Salts		*****				6-24" 8.3			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
									77.8	19.1	1.9	1.2	

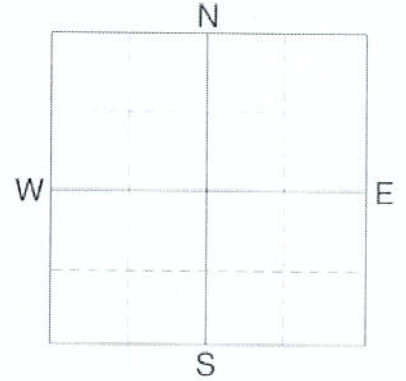
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136599**
 SAMPLE ID **Twiss 32**
 FIELD NAME **Twiss**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **29** QTR **NE** ACRES **56**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB ROG 0N0

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2119298** BOX # **0**
 LAB # **NW166943**

Date Sampled **10/23/2017**

Date Received **10/27/2017**

Date Reported **11/2/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		/Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	0-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Olsen Phosphorus	15 ppm	*****				N		N		N				
Potassium	68 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Chloride	0-24"	*****				K ₂ O		K ₂ O		K ₂ O				
Sulfur	0-6"	*****				Cl		Cl		Cl				
	6-24"	*****				S		S		S				
Boron	2.1 ppm	*****				B		B		B				
Zinc	1.61 ppm	*****				Zn		Zn		Zn				
Iron	62.3 ppm	*****				Fe		Fe		Fe				
Manganese	3.1 ppm	*****				Mn		Mn		Mn				
Copper	0.46 ppm	*****				Cu		Cu		Cu				
Magnesium	887 ppm	*****				Mg		Mg		Mg				
Calcium	4336 ppm	*****				Lime		Lime		Lime				
Sodium	146 ppm	*****												
Org.Matter	5.5 %	*****												
Carbonate(CCE)	4.4 %	*****												
Sol. Salts	0-6"	*****				Soil pH	Buffer pH	% Base Saturation (Typical Range)		% Ca	% Mg	% K	% Na	% H
	6-24"	*****				0-6" 8.3		29.9 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
						6-24" 8.5			72.6	24.7	0.6	2.1		

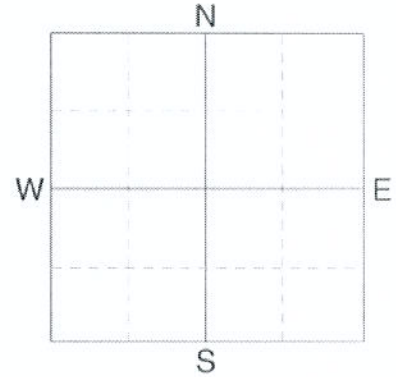
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136600**
 SAMPLE ID **Middleton** 33
 FIELD NAME **Middleton**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **18** QTR **NE** ACRES **80**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2167481** BOX # **0**
 LAB # **NW206973**

Date Sampled **11/18/2017** Date Received **11/22/2017** Date Reported **11/28/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	*****				N		N		N				
Olsen Phosphorus	44 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	92 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24"	*****				Cl		Cl		Cl				
	0-6"	*****				S		S		S				
Sulfur	6-24"	*****				B		B		B				
		32 lb/ac	*****				Zn		Zn		Zn			
Boron	0.5 ppm	*****				Fe		Fe		Fe				
Zinc	0.79 ppm	*****				Mn		Mn		Mn				
Iron	185.7 ppm	*****				Cu		Cu		Cu				
Manganese	14.5 ppm	*****				Mg		Mg		Mg				
Copper	0.15 ppm	***				Lime		Lime		Lime				
Magnesium	75 ppm	*****				Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Calcium	704 ppm	*****				0-6"	5.2	6.4	10.0 meq	% Ca	% Mg	% K	% Na	% H
Sodium	12 ppm	**				6-24"	6.6			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Org.Matter	1.9 %	*****								35.2	6.3	2.4	0.5	55.6
Carbonate(CCE)	0.6 %	****												
Sol. Salts	0-6"	**												
	6-24"	**												

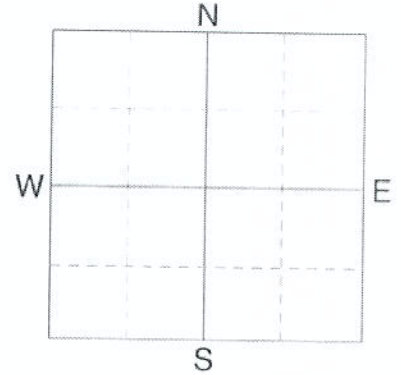
General Comments: (Reduce Lime by 1/2 for W.MN, W.IOWA and the DAKOTAS).
 Sand (CEC range = 0 to 10) (Coarse)



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136601**
 SAMPLE ID **Ralph** 36
 FIELD NAME **Ralph**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **29** QTR **SE** ACRES **41**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170301** BOX # **0**
 LAB # **NW209835**

Date Sampled **11/23/2017** Date Received **11/28/2017** Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	*****				N		N		N				
Phosphorus	Olsen	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium		*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24"	*****				Cl		Cl		Cl				
Sulfur	0-6"	*****				S		S		S				
	6-24"	*****				B		B		B				
Boron		*****				Zn		Zn		Zn				
Zinc		*****				Fe		Fe		Fe				
Iron		*****				Mn		Mn		Mn				
Manganese		*****				Cu		Cu		Cu				
Copper		*****				Mg		Mg		Mg				
Magnesium		*****				Lime		Lime		Lime				
Calcium		*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium		*****				0-6"	8.3	29.3 meq	% Ca	% Mg	% K	% Na	% H	
Org.Matter		*****				6-24"	8.6		(6.5-7.5)	(1.5-2.0)	(1-7)	(0-5)	(0-5)	
Carbonate(CCE)		*****							73.9	24.0	0.7	1.4		
Sol. Salts	0-6"	*****												
	6-24"	*****												

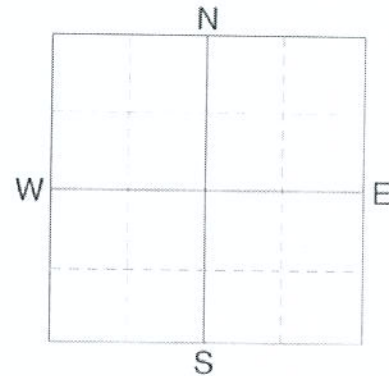
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136603** (39)
 SAMPLE ID **Labossierre**
 FIELD NAME **Labossierre**
 COUNTY
 TWP **8** RANGE **6W**
 SECTION **35** QTR **N** ACRES **55**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2167487** BOX # **0**
 LAB # **NW206969**

Date Sampled **11/18/2017**

Date Received **11/22/2017**

Date Reported **11/28/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6" 18 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	6-24" 39 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	0-24" 57 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen 11 ppm					N		N		N				
Potassium	71 ppm					P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Chloride	0-24" 192 lb/ac					K ₂ O		K ₂ O		K ₂ O				
Sulfur	0-6" 56 lb/ac					Cl		Cl		Cl				
	6-24" 126 lb/ac					S		S		S				
Boron	0.5 ppm					B		B		B				
Zinc	0.79 ppm					Zn		Zn		Zn				
Iron	58.0 ppm					Fe		Fe		Fe				
Manganese	1.8 ppm					Mn		Mn		Mn				
Copper	0.23 ppm					Cu		Cu		Cu				
Magnesium	337 ppm					Mg		Mg		Mg				
Calcium	2610 ppm					Lime		Lime		Lime				
Sodium	20 ppm					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Org.Matter	2.7 %					Buffer pH				% Ca	% Mg	% K	% Na	% H
Carbonate(CCE)	1.2 %							16.1 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Sol. Salts	0-6" 0.27 mmho/cm					0-6" 7.9				80.9	17.4	1.1	0.5	
	6-24" 0.25 mmho/cm					6-24" 7.7								

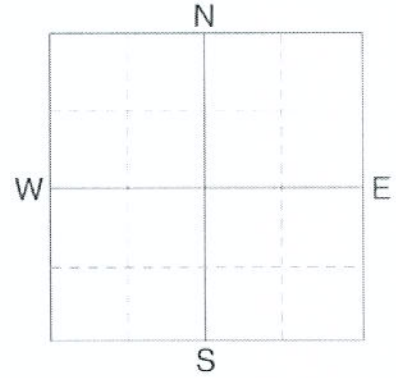
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136604**
 SAMPLE ID **Vsteen Home** 40
 FIELD NAME **Vandersteen Home**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **34** QTR **SW** ACRES **120**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170438** BOX # **0**
 LAB # **NW209838**

Date Sampled **11/24/2017**

Date Received **11/28/2017**

Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	***				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	***				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	0-24"	***				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Olsen Phosphorus	25 ppm	*****				N		N		N				
Potassium	111 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Chloride	232 lb/ac	*****				K ₂ O		K ₂ O		K ₂ O				
Sulfur	0-6"	*****				Cl		Cl		Cl				
	6-24"	*****				S		S		S				
Boron	0.8 ppm	*****				B		B		B				
Zinc	2.60 ppm	*****				Zn		Zn		Zn				
Iron	71.4 ppm	*****				Fe		Fe		Fe				
Manganese	3.1 ppm	*****				Mn		Mn		Mn				
Copper	0.91 ppm	*****				Cu		Cu		Cu				
Magnesium	530 ppm	*****				Mg		Mg		Mg				
Calcium	3659 ppm	*****				Lime		Lime		Lime				
Sodium	55 ppm	*****												
Org.Matter	2.1 %	*****												
Carbonate(CCE)	2.1 %	*****												
Sol. Salts	0-6"	*****				Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	6-24"	****				0-6" 7.8		23.2 meq	% Ca	% Mg	% K	% Na	% H	
						6-24" 8.1			(6.5-7.5) 78.7	(1.5-2.0) 19.0	(1-7) 1.2	(0-5) 1.0	(0-5)	

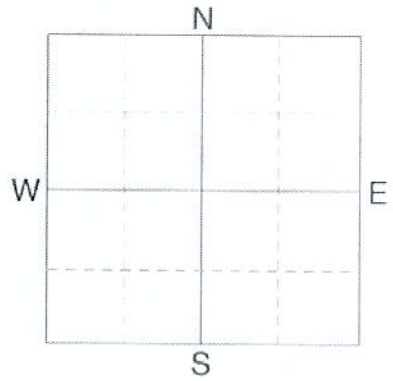
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136605**
 SAMPLE ID **VSteen North** 41
 FIELD NAME **Vandersteen North**
 COUNTY
 TWP **9** RANGE **5W**
 SECTION **4** QTR **SE** ACRES **95**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2153875** BOX # **0**
 LAB # **NW193055**

Date Sampled **11/03/2017** Date Received **11/07/2017** Date Reported **11/13/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	*****				N		N		N				
Phosphorus	Olsen	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium		*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24"	*****				Cl		Cl		Cl				
Sulfur	0-6"	*****				S		S		S				
	6-24"	*****				B		B		B				
Boron		*****				Zn		Zn		Zn				
Zinc		*****				Fe		Fe		Fe				
Iron		*****				Mn		Mn		Mn				
Manganese		*****				Cu		Cu		Cu				
Copper		*****				Mg		Mg		Mg				
Magnesium		*****				Lime		Lime		Lime				
Calcium		*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium		*****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Org.Matter		*****												
Carbonate(CCE)		*****												
Sol. Salts	0-6"	*****				0-6" 8.3		24.8 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
	6-24"	*****				6-24" 8.3				73.0	24.1	1.6	1.3	

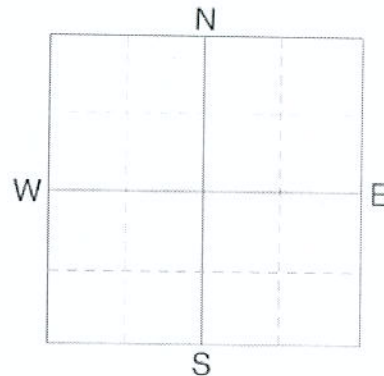
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136606**
 SAMPLE ID **Hildebrand**
 FIELD NAME **Hildebrand 45**
 COUNTY
 TWP **9** RANGE **5W**
 SECTION **4** QTR **SW** ACRE. **50**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2153889** BOX # **0**
 LAB # **NW193051**

Date Sampled **11/03/2017**

Date Received **11/07/2017**

Date Reported **11/13/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6" 9 lb/ac	****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24" 9 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24" 18 lb/ac					N		N		N				
Phosphorus	Olsen 18 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	99 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24" 136 lb/ac	*****				Cl		Cl		Cl				
	0-6" 40 lb/ac	*****				S		S		S				
Sulfur	6-24" 60 lb/ac	*****				B		B		B				
	0.5 ppm	*****				Zn		Zn		Zn				
Zinc	0.91 ppm	*****				Fe		Fe		Fe				
Iron	59.2 ppm	*****				Mn		Mn		Mn				
Manganese	2.0 ppm	*****				Cu		Cu		Cu				
Copper	0.31 ppm	*****				Mg		Mg		Mg				
Magnesium	299 ppm	*****				Lime		Lime		Lime				
Calcium	2221 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	47 ppm	*****				Buffer pH			% Ca	% Mg	% K	% Na	% H	
Org.Matter	2.2 %	*****				0-6" 7.9		14.1 meq	(6.5-7.5)	(1.5-2.0)	(1-7)	(0-5)	(0-5)	
Carbonate(CCE)	1.1 %	*****				6-24" 7.9			79.0	17.7	1.8	1.5		
Sol. Salts	0-6" 0.21 mmho/cm	****												
	6-24" 0.15 mmho/cm	***												

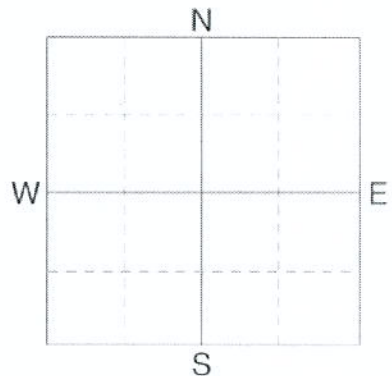
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **141984**
 SAMPLE ID **Enns**
 FIELD NAME **Enns** *47*
 COUNTY
 TWP **9** RANGE **5W**
 SECTION **4** QTR **E** ACRES **9.0**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2153877** BOX # **0**
 LAB # **NW193056**

Date Sampled **11/03/2017** Date Received **11/07/2017** Date Reported **11/13/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice							
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL							
Nitrate	0-6" 12 lb/ac	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES							
	6-24" 9 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION						
	0-24" 21 lb/ac					N		N		N							
Phosphorus	Olsen 8 ppm	*****					P ₂ O ₅		P ₂ O ₅								
Potassium	127 ppm	*****					K ₂ O		K ₂ O								
Chloride	0-24" 184 lb/ac	*****					Cl		Cl								
Sulfur	0-6" 50 lb/ac	*****				S		S		S							
	6-24" 108 lb/ac					B		B		B							
Boron	1.6 ppm	*****					Zn		Zn								
Zinc	1.16 ppm	*****					Fe		Fe								
Iron	79.8 ppm	*****					Mn		Mn								
Manganese	5.1 ppm	*****					Cu		Cu								
Copper	0.37 ppm	*****					Mg		Mg								
Magnesium	761 ppm	*****					Lime		Lime								
Calcium	4309 ppm	*****					Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	93 ppm	*****					0-6" 8.2				28.6 meq	% Ca	% Mg	% K	% Na	% H	
Org.Matter	4.1 %	*****					6-24" 8.2					(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
Carbonate(CCE)	3.2 %	*****										75.3	22.2	1.1	1.4		
Sol. Salts	0-6" 0.36 mmho/cm	*****															
	6-24" 0.26 mmho/cm	*****															

General Comments: Texture is not estimated on high pH soils.

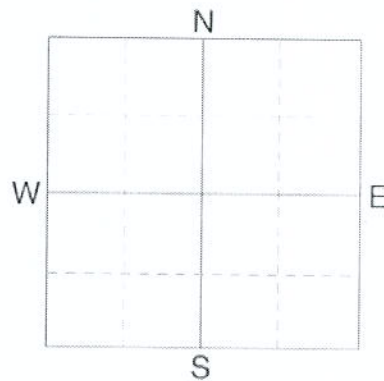


Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136607**
 SAMPLE ID **Pdrsn Tracks**
 FIELD NAME **Pederson Tracks**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **21** QTR **SE** ACRES **138**
 PREV. CROP **Corn-Silage**

50



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170302** BOX # **0**
 LAB # **NW209855**

Date Sampled **11/23/2017** Date Received **11/28/2017** Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen	*****				N		N		N				
	21 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	90 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24"	*****				Cl		Cl		Cl				
	360 lb/ac	*****				S		S		S				
Sulfur	0-6"	*****				B		B		B				
	6-24"	*****				Zn		Zn		Zn				
Boron	1.0 ppm	*****				Fe		Fe		Fe				
Zinc	4.63 ppm	*****				Mn		Mn		Mn				
Iron	47.5 ppm	*****				Cu		Cu		Cu				
Manganese	2.7 ppm	*****				Mg		Mg		Mg				
Copper	1.18 ppm	*****				Lime		Lime		Lime				
Magnesium	517 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Calcium	2948 ppm	*****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Sodium	65 ppm	*****						19.6 meq		(6.5-7.5)	(1.5-2.0)	(1-7)	(0-5)	(0-5)
Org.Matter	2.6 %	*****								75.4	22.0	1.2	1.4	
Carbonate(CCE)	2.0 %	*****												
Sol. Salts	0-6"	*****												
	6-24"	*****												

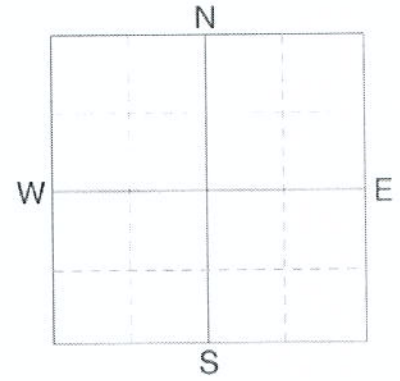
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136609**
 SAMPLE ID **Pdrsn Yard S** 53
 FIELD NAME **Pederson Yard South**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **16** QTR **SE** ACRES **80**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG ONO**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2153886** BOX # **0**
 LAB # **NW193049**

Date Sampled **11/03/2017** Date Received **11/07/2017** Date Reported **11/13/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6" 24 lb/ac	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24" 30 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24" 54 lb/ac					N		N		N				
Phosphorus	Olsen 26 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	106 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24" 188 lb/ac	*****				Cl		Cl		Cl				
	0-6" 34 lb/ac	*****				S		S		S				
Sulfur	6-24" 54 lb/ac	*****				B		B		B				
	Boron	0.9 ppm	*****			Zn		Zn		Zn				
Zinc	3.01 ppm	*****				Fe		Fe		Fe				
Iron	39.2 ppm	*****				Mn		Mn		Mn				
Manganese	2.1 ppm	*****				Cu		Cu		Cu				
Copper	0.68 ppm	*****				Mg		Mg		Mg				
Magnesium	477 ppm	*****				Lime		Lime		Lime				
Calcium	3239 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	36 ppm	*****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Org.Matter	2.9 %	*****				0-6" 8.0		20.6 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)	2.0 %	*****				6-24" 8.3				78.6	19.3	1.3	0.8	
Sol. Salts	0-6" 0.21 mmho/cm	*****												
	6-24" 0.19 mmho/cm	*****												

General Comments: Texture is not estimated on high pH soils.

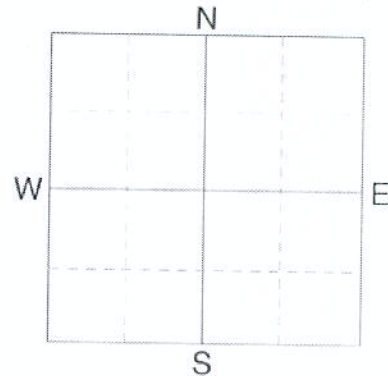


Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136610**
 SAMPLE ID **Pdrsn Opp Yard**
 FIELD NAME **Pederson Opp Yard**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **15** QTR **W** ACRES **175**
 PREV. CROP **Alfalfa**

53



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170303** BOX # **0**
 LAB # **NW209856**

Date Sampled **11/23/2017**

Date Received **11/28/2017**

Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Very Low	Low	Med	High								
Nitrate	0-6"	*****				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	6-24"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	0-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen 46 ppm	*****				N		N		N			
Potassium	153 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Chloride	0-24" 244 lb/ac	*****				K ₂ O		K ₂ O		K ₂ O			
Sulfur	0-6" 40 lb/ac 6-24" 72 lb/ac	*****				Cl		Cl		Cl			
Boron	1.0 ppm	*****				S		S		S			
Zinc	3.23 ppm	*****				B		B		B			
Iron	56.3 ppm	*****				Zn		Zn		Zn			
Manganese	2.6 ppm	*****				Fe		Fe		Fe			
Copper	1.75 ppm	*****				Mn		Mn		Mn			
Magnesium	506 ppm	*****				Cu		Cu		Cu			
Calcium	3475 ppm	*****				Mg		Mg		Mg			
Sodium	44 ppm	*****				Lime		Lime		Lime			
Org. Matter	2.3 %	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Carbonate(CCE)	2.2 %	*****				Buffer pH			% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 0.22 mmho/cm 6-24" 0.21 mmho/cm	*****				0-6" 8.2 6-24" 8.3		22.2 meq	(65-75) 78.4	(15-20) 19.0	(1-7) 1.8	(0-5) 0.9	(0-5)

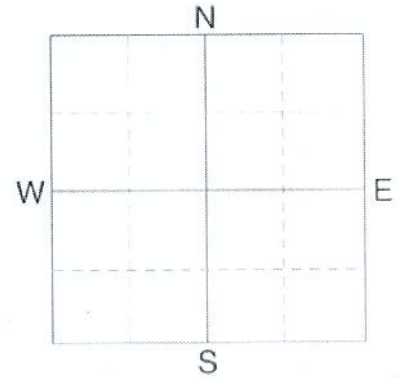
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136611** (56)
 SAMPLE ID **Funk**
 FIELD NAME **Funk**
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **22** QTR **SW** ACRES **140**
 PREV. CROP **Barley**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170304** BOX # **0**
 LAB # **NW209857**

Date Sampled **11/23/2017**

Date Received **11/28/2017**

Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL		
Nitrate	0-6" 26 lb/ac	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
	6-24" 24 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
	0-24" 50 lb/ac					N		N		N		
Phosphorus	Olsen 25 ppm	*****					P ₂ O ₅		P ₂ O ₅			
Potassium	138 ppm	*****						K ₂ O		K ₂ O		
Chloride	0-24" 260 lb/ac	*****						Cl		Cl		
Sulfur	0-6" 40 lb/ac	*****						S		S		
	6-24" 60 lb/ac	*****						B		B		
Boron	0.8 ppm	*****						Zn		Zn		
Zinc	2.99 ppm	*****						Fe		Fe		
Iron	33.6 ppm	*****						Mn		Mn		
Manganese	2.4 ppm	*****						Cu		Cu		
Copper	2.42 ppm	*****						Mg		Mg		
Magnesium	590 ppm	*****						Lime		Lime		
Calcium	2690 ppm	*****						% Base Saturation (Typical Range) % Ca % Mg % K % Na % H				
Sodium	70 ppm	*****										
Org.Matter	1.9 %	*****						Soil pH	Buffer pH	Cation Exchange Capacity		
Carbonate(CCE)	2.4 %	*****						0-6" 8.4		19.0 meq	(65-75)	
Sol. Salts	0-6" 0.28 mmho/cm	*****						6-24" 8.5			(15-20)	
	6-24" 0.19 mmho/cm	****									(1-7)	
											(0-5)	
											(0-5)	

General Comments: Texture is not estimated on high pH soils.

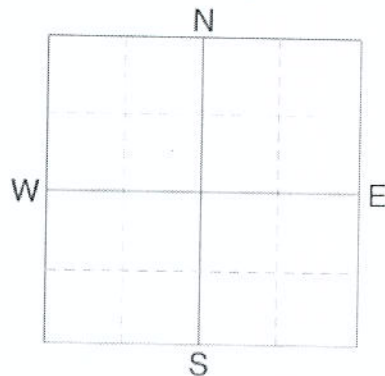


Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136612**
 SAMPLE ID **Andrew Corner**
 FIELD NAME **Andrew Corner**
 COUNTY
 TWP **9** RANGE **5W**
 SECTION **3** QTR **SE** ACRES **158**
 PREV. CROP **Barley**

63



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170072** BOX # **0**
 LAB # **NW209847**

Date Sampled **11/21/2017**

Date Received **11/28/2017**

Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice							
		Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL							
Nitrate	0-6" 6-24"	6 lb/ac 3 lb/ac	**				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
	0-24"	9 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Phosphorus	Olsen	13 ppm	*****				N		N		N						
Potassium		112 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅						
Chloride	0-24"	120 lb/ac	*****				K ₂ O		K ₂ O		K ₂ O						
Sulfur	0-6" 6-24"	106 lb/ac 288 lb/ac	*****				Cl		Cl		Cl						
Boron		0.7 ppm	*****				S		S		S						
Zinc		1.53 ppm	*****				B		B		B						
Iron		45.1 ppm	*****				Zn		Zn		Zn						
Manganese		5.4 ppm	*****				Fe		Fe		Fe						
Copper		0.95 ppm	*****				Mn		Mn		Mn						
Magnesium		513 ppm	*****				Cu		Cu		Cu						
Calcium		2856 ppm	*****				Mg		Mg		Mg						
Sodium		87 ppm	*****				Lime		Lime		Lime						
Org.Matter		2.4 %	*****				Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)		1.2 %	*****				0-6" 8.0		0-6" 8.0		19.2 meq		% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 6-24"	0.26 mmho/cm 0.24 mmho/cm	*****				6-24" 8.4		6-24" 8.4				65-75	15-20	1-7	0-5	0-5
													74.3	22.2	1.5	2.0	

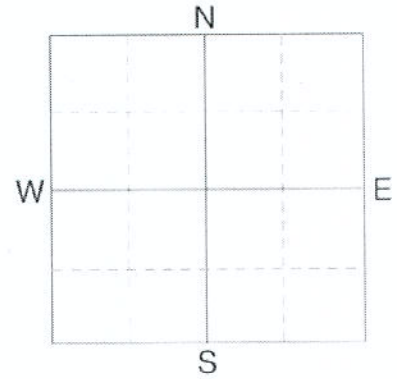
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136613**
 SAMPLE ID **Andrew BHND Yard**
 FIELD NAME **Andrew Behind Yard** *66*
 COUNTY
 TWP **9** RANGE **5W**
 SECTION **3** QTR **NE** ACRES **110**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170074** BOX # **0**
 LAB # **NW209846**

Date Sampled **11/21/2017**

Date Received **11/28/2017**

Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6" 42 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24" 54 lb/ac					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24" 96 lb/ac					N		N		N				
Phosphorus	Olsen 46 ppm					P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	248 ppm					K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24" 128 lb/ac					Cl		Cl		Cl				
Sulfur	0-6" 74 lb/ac					S		S		S				
	6-24" 84 lb/ac					B		B		B				
Boron	1.0 ppm					Zn		Zn		Zn				
Zinc	2.72 ppm					Fe		Fe		Fe				
Iron	59.9 ppm					Mn		Mn		Mn				
Manganese	3.2 ppm					Cu		Cu		Cu				
Copper	1.23 ppm					Mg		Mg		Mg				
Magnesium	500 ppm					Lime		Lime		Lime				
Calcium	2702 ppm					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	84 ppm					Buffer pH				% Ca	% Mg	% K	% Na	% H
Org.Matter	3.7 %					0-6" 8.0		18.7 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)	1.0 %					6-24" 8.0				72.3	22.3	3.4	2.0	
Sol. Salts	0-6" 0.42 mmho/cm													
	6-24" 0.22 mmho/cm													

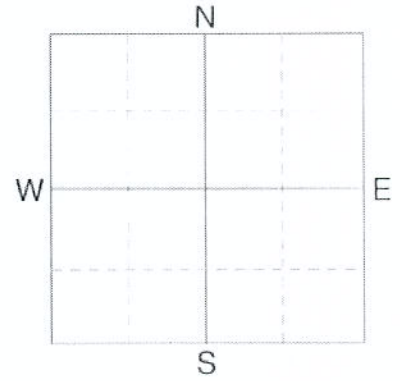
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136614**
 SAMPLE ID **HM NW CRN**
 FIELD NAME **Home NW Corner** 71
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **32** QTR **NW** ACRES **6.8**
 PREV. CROP **Alfalfa**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170266** BOX # **0**
 LAB # **NW209854**

Date Sampled **11/22/2017** Date Received **11/28/2017** Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		Low	Med	High							
Nitrate	0-6"	26 lb/ac									
	6-24"	6 lb/ac									
	0-24"	32 lb/ac									
Phosphorus	Olsen	34 ppm									
Potassium		164 ppm									
Chloride	0-24"	508 lb/ac									
Sulfur	0-6"	74 lb/ac									
	6-24"	144 lb/ac									
Boron		1.8 ppm									
Zinc		2.56 ppm									
Iron		32.9 ppm									
Manganese		4.1 ppm									
Copper		0.87 ppm									
Magnesium		874 ppm									
Calcium		3461 ppm									
Sodium		95 ppm									
Org.Matter		2.8 %									
Carbonate(CCE)		4.0 %									
Sol. Salts	0-6"	0.4 mmho/cm									
	6-24"	0.29 mmho/cm									
YIELD GOAL		YIELD GOAL		YIELD GOAL		YIELD GOAL		YIELD GOAL		YIELD GOAL	
SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
N		N		N		N		N		N	
P ₂ O ₅		P ₂ O ₅		P ₂ O ₅		P ₂ O ₅		P ₂ O ₅		P ₂ O ₅	
K ₂ O		K ₂ O		K ₂ O		K ₂ O		K ₂ O		K ₂ O	
Cl		Cl		Cl		Cl		Cl		Cl	
S		S		S		S		S		S	
B		B		B		B		B		B	
Zn		Zn		Zn		Zn		Zn		Zn	
Fe		Fe		Fe		Fe		Fe		Fe	
Mn		Mn		Mn		Mn		Mn		Mn	
Cu		Cu		Cu		Cu		Cu		Cu	
Mg		Mg		Mg		Mg		Mg		Mg	
Lime		Lime		Lime		Lime		Lime		Lime	
Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)							
		% Ca	% Mg	% K	% Na	% H					
0-6" 8.6		25.4 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)				
6-24" 8.6			68.1	28.6	1.7	1.6					

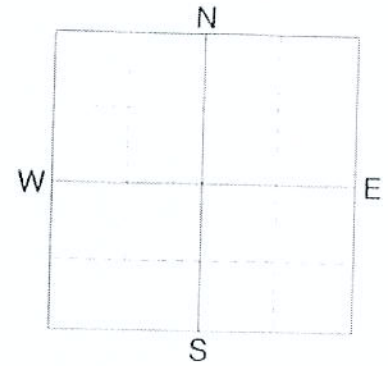
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **HM SOUTHWEST**
 SAMPLE ID
 FIELD NAME **79**
 COUNTY **5W**
 TWP **8** RANGE
 SECTION **32** QTR **SW** ACRES **190**
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:
HALARDA FARMS

SUBMITTED BY: **FI6625**
FIELD 2 FIELD AGRONOMY IN
JASON VOOGT
BOX 1931
CARMAN, MB **ROG 0J0**

REF # **18951848** BOX # **0**
 LAB # **NW214132**

Date Sampled **12/05/2017**

Date Received **12/06/2017**

Date Reported **12/12/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Depth	Concentration		YIELD GOAL	YIELD GOAL	YIELD GOAL	YIELD GOAL	YIELD GOAL			
Nitrate	0-6"	37 lb/ac								
	6-24"	60 lb/ac								
	0-24"	97 lb/ac								
Phosphorus	Olsen	38 ppm								
Potassium		179 ppm								
Chloride	0-24"	104 lb/ac								
Sulfur	0-6"	54 lb/ac								
	6-24"	120 lb/ac								
Boron		2.4 ppm								
Zinc		2.69 ppm								
Iron		35.9 ppm								
Manganese		3.1 ppm								
Copper		0.57 ppm								
Magnesium		1026 ppm								
Calcium		3740 ppm								
Sodium		51 ppm								
Org.Matter		5.4 %								
Carbonate(CCE)		5.4 %								
Sol. Salts	0-6"	0.49 mmho/cm								
	6-24"	0.38 mmho/cm								
			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			0-6" 8.2		27.9 meq	% Ca	% Mg	% K	% Na	% H
			6-24" 8.8			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
						67.0	30.6	1.6	0.8	

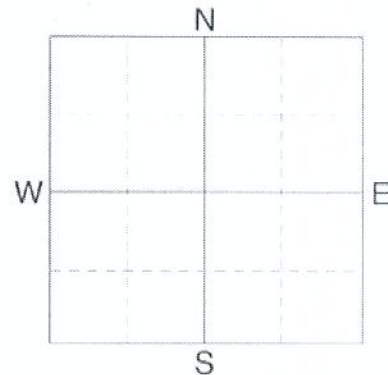
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID Houde S of Hwy
 SAMPLE ID Houde S of Hwy 85
 FIELD NAME Houde S of Hwy
 COUNTY
 TWP 9 RANGE 7
 SECTION 21 QTR NW ACRES 100
 PREV. CROP Soybeans



SUBMITTED FOR:
Halarda Grains Ltd

 Elm Creek, MB ROG ONO

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # 2170300 BOX # 0
 LAB # NW209836

Date Sampled 11/23/2017 Date Received 11/28/2017 Date Reported 11/30/2017

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL			
Nitrate	0-6"					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	6-24"					LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
	0-24"					N		N		N			
Phosphorus	Olsen 27 ppm					P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Potassium	107 ppm					K ₂ O		K ₂ O		K ₂ O			
Chloride	0-24"					Cl		Cl		Cl			
	0-6"					S		S		S			
Sulfur	6-24"					B		B		B			
	0-6"					Zn		Zn		Zn			
Boron	1.1 ppm					Fe		Fe		Fe			
Zinc	3.35 ppm					Mn		Mn		Mn			
Iron	50.5 ppm					Cu		Cu		Cu			
Manganese	2.6 ppm					Mg		Mg		Mg			
Copper	1.16 ppm					Lime		Lime		Lime			
Magnesium	689 ppm					Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Calcium	3297 ppm					Buffer pH			% Ca	% Mg	% K	% Na	% H
Sodium	80 ppm					0-6" 8.3		22.8 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Org.Matter	1.9 %					6-24" 8.4			72.1	25.1	1.2	1.5	
Carbonate(CCE)	2.2 %												
Sol. Salts	0-6"												
	6-24"												

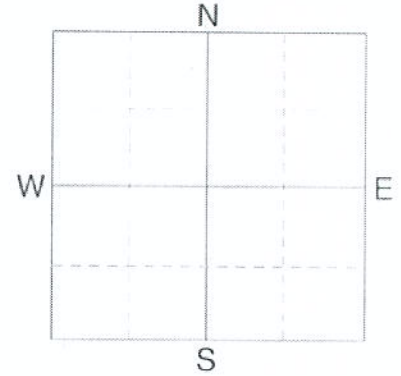
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136618**
 SAMPLE ID **Houde by old Dump**
 FIELD NAME **Houde by Old Dump** 90
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **31** QTR **SW** ACRES **120**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG ONO**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170439** BOX # **0**
 LAB # **NW209839**

Date Sampled **11/24/2017**

Date Received **11/28/2017**

Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6" 25 lb/ac					SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24" 15 lb/ac	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24" 40 lb/ac					N		N		N				
Phosphorus	Olsen 53 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium	204 ppm	*****				K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24" 248 lb/ac	*****				Cl		Cl		Cl				
	0-6" 60 lb/ac	*****				S		S		S				
Sulfur	6-24" 96 lb/ac	*****				B		B		B				
	Boron 1.0 ppm	*****				Zn		Zn		Zn				
Zinc	2.01 ppm	*****				Fe		Fe		Fe				
Iron	39.9 ppm	*****				Mn		Mn		Mn				
Manganese	2.5 ppm	*****				Cu		Cu		Cu				
Copper	0.84 ppm	*****				Mg		Mg		Mg				
Magnesium	530 ppm	*****				Lime		Lime		Lime				
Calcium	3333 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sodium	71 ppm	*****				Buffer pH				% Ca	% Mg	% K	% Na	% H
Org.Matter	2.6 %	*****				0-6" 8.4		21.9 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)	2.4 %	*****				6-24" 8.4				76.0	20.2	2.4	1.4	
Sol. Salts	0-6" 0.24 mmho/cm	*****												
	6-24" 0.17 mmho/cm	****												

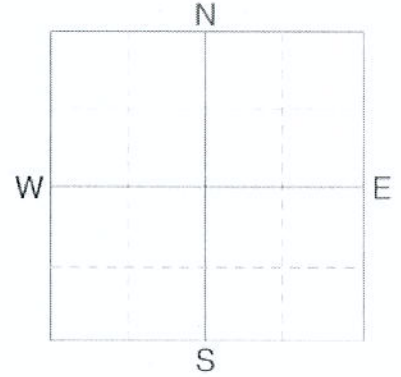
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **136619**
 SAMPLE ID **Houde West of Esau**
 FIELD NAME **Houde West of Esau** (91)
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **30** QTR **NW** ACRES **70**
 PREV. CROP **Corn-Silage**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170440** BOX # **0**
 LAB # **NW209840**

Date Sampled **11/24/2017**

Date Received **11/28/2017**

Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6"	17 lb/ac				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	6-24"	12 lb/ac	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
	0-24"	29 lb/ac				N		N		N				
Phosphorus	Olsen	25 ppm	*****			P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium		151 ppm	*****			K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24"	184 lb/ac	*****			Cl		Cl		Cl				
Sulfur	0-6"	58 lb/ac	*****			S		S		S				
	6-24"	48 lb/ac	*****			B		B		B				
Boron		0.9 ppm	*****			Zn		Zn		Zn				
Zinc		1.64 ppm	*****			Fe		Fe		Fe				
Iron		41.7 ppm	*****			Mn		Mn		Mn				
Manganese		3.1 ppm	*****			Cu		Cu		Cu				
Copper		0.45 ppm	*****			Mg		Mg		Mg				
Magnesium		517 ppm	*****			Lime		Lime		Lime				
Calcium		4197 ppm	*****											
Sodium		68 ppm	*****											
Org. Matter		2.4 %	*****											
Carbonate(CCE)		3.9 %	*****											
Sol. Salts	0-6"	0.32 mmho/cm	*****			Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	6-24"	0.15 mmho/cm	***			0-6" 8.2		26.0 meq	% Ca	% Mg	% K	% Na	% H	
						6-24" 8.2			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
									80.8	16.6	1.5	1.1		

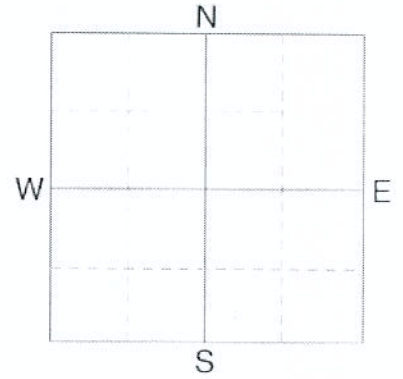
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **141982**
 SAMPLE ID **Lee South**
 FIELD NAME **Lee South** 100
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **16** QTR **NE** ACRES **80**
 PREV. CROP **Oats**



SUBMITTED FOR:
Halarda Grains Ltd

Elm Creek, MB R0G 0N0

SUBMITTED BY: **MA3960**
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2153883** BOX # **0**
 LAB # **NW193053**

Date Sampled **11/03/2017**

Date Received **11/07/2017**

Date Reported **11/13/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Low	Med	High									
Nitrate	0-6"	25 lb/ac				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	6-24"	30 lb/ac				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	0-24"	55 lb/ac				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen	44 ppm				N		N		N			
						P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Potassium		224 ppm				K ₂ O		K ₂ O		K ₂ O			
Chloride	0-24"	120 lb/ac				Cl		Cl		Cl			
	0-6"	42 lb/ac				S		S		S			
Sulfur	6-24"	84 lb/ac				B		B		B			
						Zn		Zn		Zn			
Boron		1.0 ppm				Fe		Fe		Fe			
Zinc		5.65 ppm				Mn		Mn		Mn			
Iron		71.5 ppm				Cu		Cu		Cu			
Manganese		2.9 ppm				Mg		Mg		Mg			
Copper		1.03 ppm				Lime		Lime		Lime			
Magnesium		506 ppm				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
Calcium		3661 ppm							% Ca	% Mg	% K	% Na	% H
Sodium		50 ppm				0-6" 7.8		23.3 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Org.Matter		3.5 %				6-24" 8.1			78.5	18.1	2.5	0.9	
Carbonate(CCE)		2.7 %											
Sol. Salts	0-6"	0.28 mmho/cm											
	6-24"	0.19 mmho/cm											

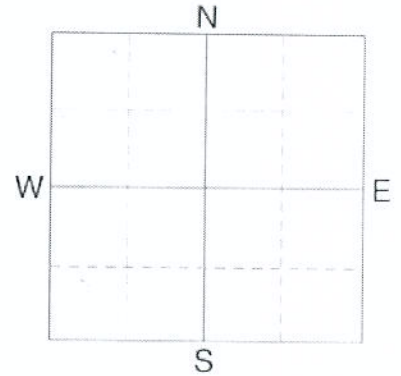
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **141981**
 SAMPLE ID **Lee North**
 FIELD NAME **Lee 1 North** *101*
 COUNTY
 TWP **8** RANGE **5W**
 SECTION **16** QTR **NE** ACRES **80**
 PREV. CROP **Oats**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG ONO**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2153881** BOX # **0**
 LAB # **NW193054**

Date Sampled **11/03/2017**

Date Received **11/07/2017**

Date Reported **11/13/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
		Low	Med	High	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
		Low	Med	High	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Nitrate	0-6"	12 lb/ac											
	6-24"	9 lb/ac											
	0-24"	21 lb/ac											
Phosphorus	Olsen	29 ppm											
Potassium		130 ppm											
Chloride	0-24"	160 lb/ac											
	0-6"	48 lb/ac											
Sulfur	6-24"	114 lb/ac											
		0.8 ppm											
Zinc		3.76 ppm											
Iron		48.9 ppm											
Manganese		2.0 ppm											
Copper		0.53 ppm											
Magnesium		416 ppm											
Calcium		2458 ppm											
Sodium		47 ppm											
Org.Matter		2.9 %											
Carbonate(CCE)		1.3 %											
Sol. Salts	0-6"	0.21 mmho/cm											
	6-24"	0.21 mmho/cm											
						Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
						0-6" 7.9		16.3 meq	% Ca	% Mg	% K	% Na	% H
						6-24" 8.2			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
									75.4	21.3	2.0	1.3	

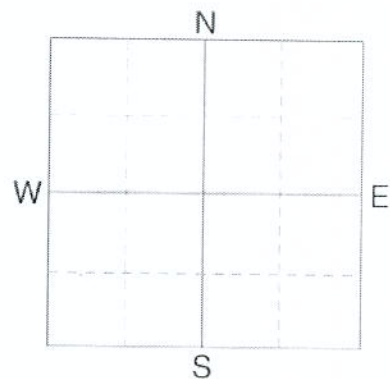
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **141983**
 SAMPLE ID **Lee 305** *102*
 FIELD NAME **Lee 3**
 COUNTY **6W**
 TWP **21** RANGE **7**
 SECTION QTR ACRES **160**
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:
Halarda Grains Ltd
 Elm Creek, MB **ROG 0N0**

SUBMITTED BY: MA3960
JL AGRONOMICS
JUSTIN LAVALLEE
3 GARRIOCK PARK DRIV
PORTAGE LA PRAIRIE, MB R1N 3R9

REF # **2170299** BOX # **0**
 LAB # **NW209837**

Date Sampled **11/23/2017**

Date Received **11/28/2017**

Date Reported **11/30/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Very Low	Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL			
Nitrate	0-6"	*****				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	6-24"	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
	0-24"	*****				N		N		N			
Phosphorus	Olsen 11 ppm	*****				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Potassium	78 ppm	*****				K ₂ O		K ₂ O		K ₂ O			
Chloride	0-24"	*****				Cl		Cl		Cl			
	0-6"	*****				S		S		S			
Sulfur	6-24"	*****				B		B		B			
		1.3 ppm	*****				Zn		Zn		Zn		
Boron	2.04 ppm	*****				Fe		Fe		Fe			
Zinc	25.8 ppm	*****				Mn		Mn		Mn			
Iron	3.4 ppm	*****				Cu		Cu		Cu			
Manganese	0.26 ppm	*****				Mg		Mg		Mg			
Copper	696 ppm	*****				Lime		Lime		Lime			
Magnesium	3445 ppm	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Calcium	89 ppm	*****				Buffer pH			% Ca	% Mg	% K	% Na	% H
Sodium	2.0 %	*****						23.6 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Org.Matter	2.7 %	*****				0-6" 8.2			73.0	24.6	0.8	1.6	
Carbonate(CCE)	0.32 mmho/cm	*****				6-24" 8.4							
Sol. Salts	0.24 mmho/cm	*****											

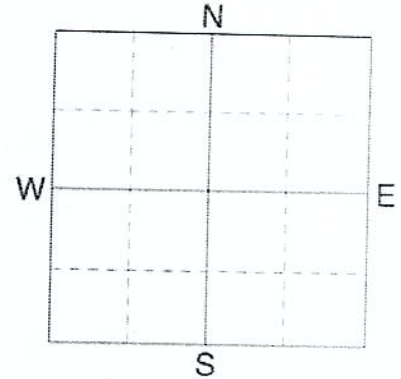
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **MJ SW 28**
 SAMPLE ID
 FIELD NAME **110**
 COUNTY **5W**
 TWP **8** RANGE
 SECTION **28** QTR **SW** ACRES **160**
 PREV. CROP **Soybeans**



SUBMITTED FOR:
HALARDA FARMS

SUBMITTED BY: **FI6625**
FIELD 2 FIELD AGRONOMY IN
JASON VOOGT
BOX 1931
CARMAN, MB **ROG OJO**

REF # **18951846** BOX # **0**
 LAB # **NW214130**

Date Sampled **12/05/2017**

Date Received **12/06/2017**

Date Reported **12/12/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Low	Low	Med	High								
Nitrate	0-6"	25 lb/ac				YIELD GOAL		YIELD GOAL		YIELD GOAL			
	6-24"	24 lb/ac				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	0-24"	49 lb/ac				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
						N		N		N			
Phosphorus	Olsen	43 ppm				P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Potassium		252 ppm				K ₂ O		K ₂ O		K ₂ O			
Chloride	0-24"	32 lb/ac				Cl		Cl		Cl			
	0-6"	42 lb/ac				S		S		S			
Sulfur	6-24"	54 lb/ac				B		B		B			
		0.8 ppm				Zn		Zn		Zn			
Zinc		5.25 ppm				Fe		Fe		Fe			
Iron		64.8 ppm				Mn		Mn		Mn			
Manganese		5.8 ppm				Cu		Cu		Cu			
Copper		0.44 ppm				Mg		Mg		Mg			
Magnesium		273 ppm				Lime		Lime		Lime			
Calcium		2688 ppm				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Sodium		17 ppm				Buffer pH			% Ca	% Mg	% K	% Na	% H
Org.Matter		2.8 %				0-6" 7.2		16.4 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)		1.7 %				6-24" 7.7			81.8	13.8	3.9	0.4	
Sol. Salts	0-6"	0.25 mmho/cm											
	6-24"	0.18 mmho/cm											

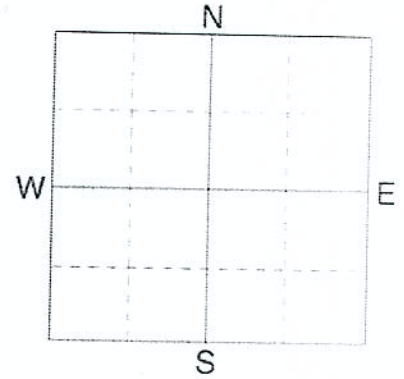
General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **MJ 5-9-5**
 SAMPLE ID
 FIELD NAME **111**
 COUNTY **5W**
 TWP **9** RANGE
 SECTION **5** QTR **SE** ACRE **62**
 PREV. CROP **Soybeans**



SUBMITTED FOR:
HALARDA FARMS

SUBMITTED BY: **FI6625**
FIELD 2 FIELD AGRONOMY IN
JASON VOOGT
BOX 1931
CARMAN, MB **ROG OJO**

REF # **18951850** BOX # **0**
 LAB # **NW214134**

Date Sampled **12/05/2017**

Date Received **12/06/2017**

Date Reported **12/12/2017**

Nutrient In The Soil		Interpretation			1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Low	Med	High									
Nitrate	0-6"	8 lb/ac			YIELD GOAL		YIELD GOAL		YIELD GOAL				
	6-24"	9 lb/ac			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	0-24"	17 lb/ac			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
					N		N		N				
Phosphorus	Olsen	10 ppm	*****		P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Potassium		59 ppm	*****		K ₂ O		K ₂ O		K ₂ O				
Chloride	0-24"	56 lb/ac	*****		Cl		Cl		Cl				
Sulfur	0-6"	70 lb/ac	*****		S		S		S				
	6-24"	222 lb/ac	*****		B		B		B				
Boron		0.9 ppm	*****		Zn		Zn		Zn				
Zinc		0.60 ppm	*****		Fe		Fe		Fe				
Iron		45.6 ppm	*****		Mn		Mn		Mn				
Manganese		3.1 ppm	*****		Cu		Cu		Cu				
Copper		0.3 ppm	*****		Mg		Mg		Mg				
Magnesium		447 ppm	*****		Lime		Lime		Lime				
Calcium		3117 ppm	*****										
Sodium		31 ppm	*****										
Org.Matter		2.5 %	*****										
Carbonate(CCE)		1.8 %	*****										
Sol. Salts	0-6"	0.27 mmho/cm	*****		Soil pH	Buffer pH	% Base Saturation (Typical Range)		% Ca	% Mg	% K	% Na	% H
	6-24"	0.25 mmho/cm	*****		0-6" 7.8		19.6 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	

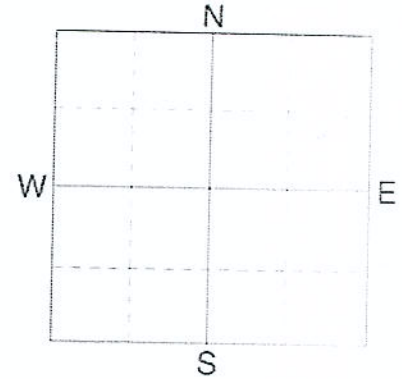
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **MJ NW 27**
 SAMPLE ID
 FIELD NAME **112**
 COUNTY **5W**
 TWP **8** RANGE
 SECTION **27** QTR **NW** ACRES **80**
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:
HALARDA FARMS

SUBMITTED BY: **F16625**
FIELD 2 FIELD AGRONOMY IN
JASON VOOGT
BOX 1931
CARMAN, MB **ROG OJO**

REF # **18951852** BOX # **0**
 LAB # **NW214141**

Date Sampled **12/05/2017**

Date Received **12/06/2017**

Date Reported **12/12/2017**

Nutrient In The Soil		Interpretation			1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		Low	Med	High						
Nitrate	0-6"	17 lb/ac								
	6-24"	24 lb/ac								
	0-24"	41 lb/ac								
Olsen Phosphorus	15 ppm									
Potassium	93 ppm									
Chloride	0-24"	204 lb/ac								
	0-6"	38 lb/ac								
Sulfur	6-24"	186 lb/ac								
		1.0 ppm								
Zinc	0.55 ppm									
Iron	33.3 ppm									
Manganese	5.4 ppm									
Copper	0.19 ppm									
Magnesium	399 ppm									
Calcium	3634 ppm									
Sodium	34 ppm									
Org.Matter	2.1 %									
Carbonate(CCE)	2.4 %									
Sol. Salts	0-6"	0.27 mmho/cm								
	6-24"	0.3 mmho/cm								
YIELD GOAL		YIELD GOAL		YIELD GOAL		YIELD GOAL		YIELD GOAL		
SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
N		N		N		N		N		
P ₂ O ₅		P ₂ O ₅		P ₂ O ₅		P ₂ O ₅		P ₂ O ₅		
K ₂ O		K ₂ O		K ₂ O		K ₂ O		K ₂ O		
Cl		Cl		Cl		Cl		Cl		
S		S		S		S		S		
B		B		B		B		B		
Zn		Zn		Zn		Zn		Zn		
Fe		Fe		Fe		Fe		Fe		
Mn		Mn		Mn		Mn		Mn		
Cu		Cu		Cu		Cu		Cu		
Mg		Mg		Mg		Mg		Mg		
Lime		Lime		Lime		Lime		Lime		
Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)						
		% Ca	% Mg	% K	% Na	% H				
0-6" 7.8		21.9 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)			
6-24" 8.4			83.0	15.2	1.1	0.7				

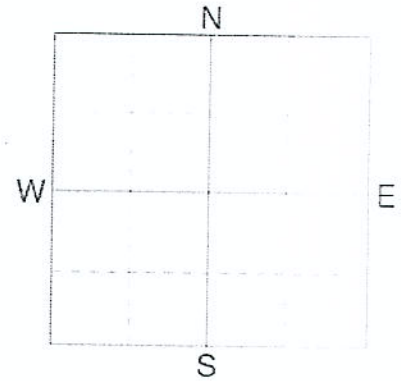
General Comments: Texture is not estimated on high pH soils.



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **MJ NE 28**
 SAMPLE ID
 FIELD NAME **113**
 COUNTY **5W**
 TWP **8** RANGE
 SECTION **28** QTR **NE** ACRES **80**
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:
HALARDA FARMS

SUBMITTED BY: **F16625**
FIELD 2 FIELD AGRONOMY IN
JASON VOOGT
BOX 1931
CARMAN, MB **ROG OJO**

REF # **18951853** BOX # **0**
 LAB # **NW214144**

Date Sampled **12/05/2017**

Date Received **12/06/2017**

Date Reported **12/12/2017**

Nutrient In The Soil		Interpretation			1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL			
Nitrate	0-6"	*****			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
	6-24"	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
	0-24"	*****			N		N		N			
Phosphorus	Olsen	*****			P ₂ O ₅		P ₂ O ₅		P ₂ O ₅			
Potassium		*****			K ₂ O		K ₂ O		K ₂ O			
Chloride	0-24"	*****			Cl		Cl		Cl			
Sulfur	0-6"	*****			S		S		S			
	6-24"	*****			B		B		B			
Boron		*****			Zn		Zn		Zn			
Zinc		*****			Fe		Fe		Fe			
Iron		*****			Mn		Mn		Mn			
Manganese		*****			Cu		Cu		Cu			
Copper		*****			Mg		Mg		Mg			
Magnesium		*****			Lime		Lime		Lime			
Calcium		*****			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)			
Sodium		****			0-6" 7.5	Buffer pH	24.5 meq	% Ca	% Mg	% K	% Na	% H
Org.Matter		*****			6-24" 8.3			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Carbonate(CCE)		*****						80.9	16.9	1.8	0.4	
Sol. Salts	0-6"	*****										
	6-24"	****										

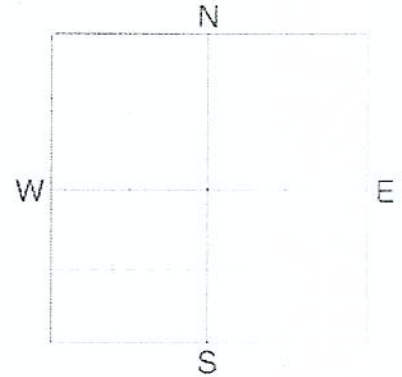
General Comments: Fine Loams (CEC range 21 to 30) (Medium)



Soil Analysis by Agvise Laboratories
 (http://www.agvise.com)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **MJ SW 27**
 SAMPLE ID
 FIELD NAME *114*
 COUNTY **5W**
 TWP **8** RANGE
 SECTION **27** QTR **SW** ACRES **0**
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:
HALARDA FARMS

SUBMITTED BY: **FI6625**
FIELD 2 FIELD AGRONOMY IN
JASON VOOGT
BOX 1931
CARMAN, MB **ROG OJO**

REF # **18951854** BOX # **0**
 LAB # **NW214147**

Date Sampled **12/05/2017**

Date Received **12/06/2017**

Date Reported **12/12/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Low	Med	High	YIELD GOAL		YIELD GOAL		YIELD GOAL				
Nitrate	0-6" 6-24"	28 lb/ac 39 lb/ac	*****		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
	0-24"	67 lb/ac			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Olsen Phosphorus	33 ppm	*****			N		N		N				
Potassium	91 ppm	*****			P ₂ O ₅		P ₂ O ₅		P ₂ O ₅				
Chloride	0-24" 208 lb/ac	*****			K ₂ O		K ₂ O		K ₂ O				
Sulfur	0-6" 6-24" 50 lb/ac 72 lb/ac	*****			Cl		Cl		Cl				
Boron	0.7 ppm	*****			S		S		S				
Zinc	1.52 ppm	*****			B		B		B				
Iron	102.3 ppm	*****			Zn		Zn		Zn				
Manganese	12.9 ppm	*****			Fe		Fe		Fe				
Copper	0.19 ppm	****			Mn		Mn		Mn				
Magnesium	181 ppm	*****			Cu		Cu		Cu				
Calcium	1776 ppm	*****			Mg		Mg		Mg				
Sodium	20 ppm	***			Lime		Lime		Lime				
Org.Matter	2.1 %	*****			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)	1.0 %	*****			Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 6-24" 0.25 mmho/cm 0.23 mmho/cm	*****			6-6		10.7 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
					6-24"	7.4			82.9	14.1	2.2	0.8	

General Comments: Coarse Loams (CEC range = 11 to 20) (Medium)