


Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846

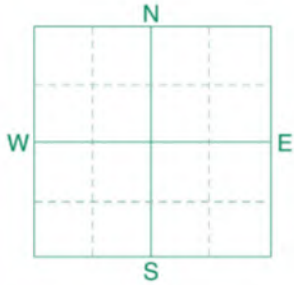
Appendix K: Horizon Colony Farms: Soil Test Reports



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

SOIL TEST REPORT

FIELD ID **04**
 SAMPLE ID
 FIELD NAME **Braun NE**
 COUNTY
 TWP **ne 36-3-2 w RANGE**
 SECTION QTR ACRES **160**
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: **GJ4376**
GJ CHEMICAL COMPANY
4045 RD 9 NW
BOX 1648
ALTONA, MB **RDG 080**

REF # **4132140** BOX # **418**
 LAB # **NW62906**


Date Sampled _____ Date Received **08/29/2023** Date Reported **08/30/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
			Canola-bu	Soybeans	Barley				
Nitrate	0-6"	47 lb/acre	Low	Med	YIELD GOAL	YIELD GOAL	YIELD GOAL		
	6-24"		High	55 BU	40 BU	85 BU			
	0-24"	71 lb/acre	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen	43 ppm	N	122	N	***	N	61	
Potassium		597 ppm	P ₂ O ₅	10	Band (Starter)*	P ₂ O ₅	10	Band (Starter)*	
Chloride			K ₂ O	0	K ₂ O	0	K ₂ O	10	
Sulfur	0-6"	24 lb/acre	Cl		Cl		Cl		
	6-24"	360 +lb/acre	S	15	Band	S	5	Band (Trial)	
Boron			B		B		B		
Zinc		4.13 ppm	Zn	0	Zn	0	Zn	0	
Iron			Fe		Fe		Fe		
Manganese			Mn		Mn		Mn		
Copper			Cu		Cu		Cu		
Magnesium			Mg		Mg		Mg		
Calcium			Lime		Lime		Lime		
Sodium									
Org.Matter		5.7 %							
Carbonate(CCE)									
Sol. Salts	0-6"	0.71 mmho/cm	Soil pH	8.0	Buffer pH		% Base Saturation (Typical Range)		
	6-24"	1.62 mmho/cm		8.3			% Ca	% Mg	% K

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

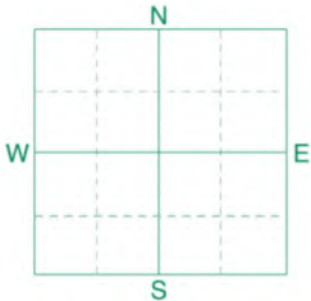
Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.



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SOIL TEST REPORT

FIELD ID **05**
 SAMPLE ID
 FIELD NAME **Braun SE**
 COUNTY
 TWP **se 36-3-2 w RANGE**
 SECTION QTR ACRES **147**
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
 Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: GJ4376
 GJ CHEMICAL COMPANY
 4045 RD 9 NW
 BOX 1648
 ALTONA, MB **ROG 0B0**

REF # **4132142** BOX # **428**
 LAB # **NW62907**


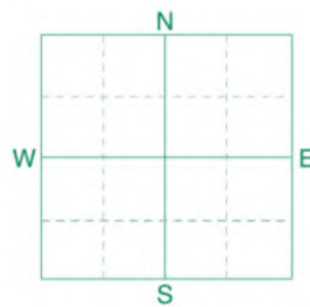
Date Sampled
Date Received **08/29/2023**
Date Reported **08/30/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		V Low Low Med High						
Nitrate	0-6" 23 lb/acre		Canola-bu		Soybeans		Barley	
	6-24" 18 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 41 lb/acre		55 BU		40 BU		85 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 20 ppm		N 152		N ***		N 91	
Potassium	563 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 40	Band *
Chloride			K ₂ O 0		K ₂ O 0		K ₂ O 10	Band (Starter)*
Sulfur	0-6" 36 lb/acre		Cl		Cl		Cl	
	6-24" 360 +lb/acre		S 15	Band	S 0		S 0	
Boron			B		B		B	
Zinc	1.72 ppm		Zn 0		Zn 0		Zn 0	
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org. Matter	5.5 %							
Carbonate(CCE)			Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)	
			0-6" 8.2		% Ca	% Mg	% K	% Na
Sol. Salts	0-6" 0.78 mmho/cm		6-24" 8.3					% H
	6-24" 1.99 mmho/cm							

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 22 SAMPLE ID FIELD NAME Thiessen COUNTY TWP nw/sw 17-4-1 w RANGE SECTION QTR ACRES 125 PREV. CROP Wheat-Spring		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132144 BOX # 206 LAB # NW60268
Date Sampled		Date Received 08/27/2023	Date Reported 08/28/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High						
Nitrate	0-6" 34 lb/acre		Canola-bu		Soybeans		Barley	
	6-24" 12 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 46 lb/acre		55 BU		40 BU		85 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 20 ppm		N 147		N ***		N 86	
Potassium	549 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 40	Band *
Chloride			K ₂ O 0		K ₂ O 0		K ₂ O 10	Band (Starter)*
Sulfur	0-6" 32 lb/acre		Cl		Cl		Cl	
	6-24" 204 lb/acre		S 15	Band	S 0		S 0	
Boron			B		B		B	
Zinc	1.09 ppm		Zn 0		Zn 0		Zn 0	
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org.Matter	6.5 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH				% Ca	% Mg
							% K	% Na
							% H	
	0-6" 0.94 mmho/cm		0-6" 7.2					
Sol. Salts	6-24" 1.42 mmho/cm		6-24" 7.7					


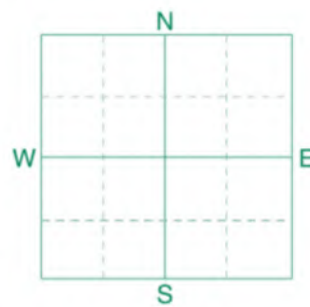
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


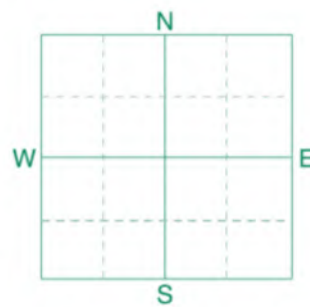
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 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 25 SAMPLE ID FIELD NAME Falk COUNTY TWP sw 16-4-1 w RANGE SECTION QTR ACRES 150 PREV. CROP Wheat-Spring		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132145 BOX # 868 LAB # NW65843
Date Sampled		Date Received 08/31/2023	Date Reported 09/01/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High							
Nitrate	0-6" 47 lb/acre		Canola-bu		Soybeans		Barley		
	6-24" 24 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24" 71 lb/acre		55 BU		40 BU		85 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen 42 ppm		N 122		N ***		N 61		
Potassium	689 ppm		P ₂ O ₅ 10	Band (Starter)*	P ₂ O ₅ 10	Band (Starter)*	P ₂ O ₅ 15	Band (Starter)*	
Chloride			K ₂ O 0		K ₂ O 0		K ₂ O 10	Band (Starter)*	
Sulfur	0-6" 44 lb/acre		Cl		Cl		Cl		
Boron	6-24" 60 lb/acre		S 15	Band	S 0		S 0		
Zinc	5.36 ppm		B		B		B		
Iron			Zn 0		Zn 0		Zn 0		
Manganese			Fe		Fe		Fe		
Copper			Mn		Mn		Mn		
Magnesium			Cu		Cu		Cu		
Calcium			Mg		Mg		Mg		
Sodium			Lime		Lime		Lime		
Org. Matter	6.3 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Carbonate(CCE)			Buffer pH				% Ca	% Mg	% K
							% Na	% H	
	0-6" 0.86 mmho/cm		0-6" 7.5						
Sol. Salts	6-24" 0.7 mmho/cm		6-24" 8.3						

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


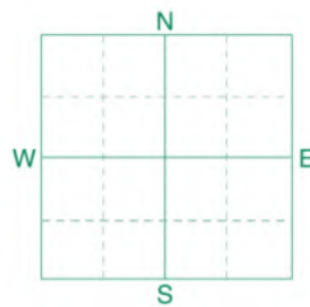
 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 28 SAMPLE ID FIELD NAME Tim COUNTY TWP nw 5-4-1 w RANGE SECTION QTR ACRES 150 PREV. CROP Wheat-Spring		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132147 BOX # 293 LAB # NW60269
Date Sampled		Date Received 08/27/2023	Date Reported 08/28/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High							
Nitrate	0-6" 18 lb/acre		Canola-bu		Soybeans		Barley		
	6-24" 9 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24" 27 lb/acre		55 BU		40 BU		85 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen 12 ppm		N	166	N	***	N	105	
Potassium	627 ppm		P ₂ O ₅	50 Band *	P ₂ O ₅	30 Band *	P ₂ O ₅	40 Band *	
Chloride			K ₂ O	0	K ₂ O	0	K ₂ O	10 Band (Starter)*	
Sulfur	0-6" 16 lb/acre		Cl		Cl		Cl		
	6-24" 168 lb/acre		S	15 Band	S	5 Band (Trial)	S	0	
Boron			B		B		B		
Zinc	0.64 ppm		Zn	1 Band	Zn	0	Zn	0	
Iron			Fe		Fe		Fe		
Manganese			Mn		Mn		Mn		
Copper			Cu		Cu		Cu		
Magnesium			Mg		Mg		Mg		
Calcium			Lime		Lime		Lime		
Sodium									
Org.Matter	5.5 %								
Carbonate(CCE)			Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)		
					% Ca	% Mg	% K	% Na	% H
	0-6" 0.72 mmho/cm		0-6" 7.4						
Sol. Salts	6-24" 1.01 mmho/cm		6-24" 8.2						

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


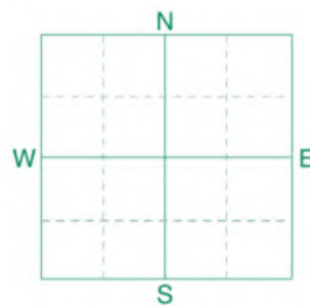
 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 34 SAMPLE ID FIELD NAME Ruby COUNTY TWP se 13-4-2 w RANGE SECTION QTR ACRES 80 PREV. CROP Wheat-Spring		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132148 BOX # 293 LAB # NW60270
Date Sampled		Date Received 08/27/2023	Date Reported 08/28/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High							
Nitrate	0-6" 33 lb/acre		Canola-bu		Soybeans		Barley		
	6-24" 21 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24" 54 lb/acre		55 BU		40 BU		85 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen 12 ppm		N 139		N ***		N 78		
Potassium	538 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 40	Band *	
Chloride			K ₂ O 0		K ₂ O 0		K ₂ O 10	Band (Starter)*	
Sulfur	0-6" 14 lb/acre		Cl		Cl		Cl		
	6-24" 78 lb/acre		S 17	Band	S 7	Band (Trial)	S 0		
Boron			B		B		B		
Zinc	0.71 ppm		Zn 1	Band	Zn 0		Zn 0		
Iron			Fe		Fe		Fe		
Manganese			Mn		Mn		Mn		
Copper			Cu		Cu		Cu		
Magnesium			Mg		Mg		Mg		
Calcium			Lime		Lime		Lime		
Sodium									
Org.Matter	6.1 %								
Carbonate(CCE)			Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)		
					% Ca	% Mg	% K	% Na	% H
	0-6" 0.79 mmho/cm		0-6" 7.4						
Sol. Salts	6-24" 0.87 mmho/cm		6-24" 8.1						

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


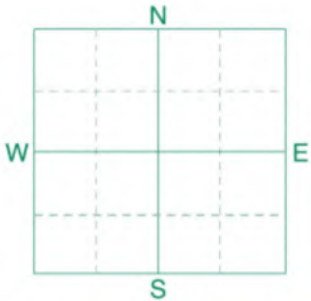
Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

 GJ Chemical Co.™ Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 18 SAMPLE ID FIELD NAME Willy COUNTY TWP nw/sw 20-4-1 w RANGE SECTION QTR ACRES 310 PREV. CROP Barley	SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	
	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132149 BOX # 900 LAB # NW65844
Date Sampled		Date Received 08/31/2023	Date Reported 09/01/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High						
Nitrate	0-6" 56 lb/acre		Canola-bu		Soybeans		Wheat-Spring	
	6-24" 36 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 92 lb/acre		55 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 17 ppm		N	101	N	***	N	124
Potassium	494 ppm		P ₂ O ₅	50 Band *	P ₂ O ₅	30 Band *	P ₂ O ₅	50 Band *
Chloride			K ₂ O	0	K ₂ O	0	K ₂ O	10 Band (Starter)*
Sulfur	0-6" 48 lb/acre		Cl		Cl		Cl	
Boron	6-24" 300 lb/acre		S	10 Band	S	0	S	0
Zinc	1.27 ppm		B		B		B	
Iron			Zn	0	Zn	0	Zn	0
Manganese			Fe		Fe		Fe	
Copper			Mn		Mn		Mn	
Magnesium			Cu		Cu		Cu	
Calcium			Mg		Mg		Mg	
Sodium			Lime		Lime		Lime	
Org.Matter	7.1 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH				% Ca	% Mg
							% K	% Na
							% H	
Sol. Salts	0-6" 1.07 mmho/cm		0-6" 7.1					
	6-24" 2.04 mmho/cm		6-24" 7.7					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 19 SAMPLE ID FIELD NAME Randall COUNTY TWP ne 20-4-1 w RANGE SECTION QTR ACRES 160 PREV. CROP Barley		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132150 BOX # 900 LAB # NW65845
Date Sampled		Date Received 08/31/2023	Date Reported 09/01/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High						
Nitrate	0-6" 63 lb/acre		Canola-bu		Soybeans		Wheat-Spring	
	6-24" 15 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 78 lb/acre		55 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 23 ppm		N 115		N ***		N 138	
Potassium	542 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 50	Band *
Chloride			K ₂ O 0		K ₂ O 0		K ₂ O 10	Band (Starter)*
Sulfur	0-6" 16 lb/acre		Cl		Cl		Cl	
	6-24" 36 lb/acre		S 15	Band	S 5	Band (Trial)	S 5	Band (Trial)
Boron			B		B		B	
Zinc	1.10 ppm		Zn 0		Zn 0		Zn 0	
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org. Matter	6.4 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH		% Ca	% Mg	% K	% Na
					% H			
	0-6" 1.1 mmho/cm		0-6" 7.1					
Sol. Salts	6-24" 0.77 mmho/cm		6-24" 7.9					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

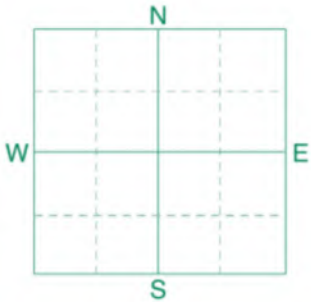
Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.



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

SOIL TEST REPORT

FIELD ID **20**
 SAMPLE ID
 FIELD NAME **CW**
 COUNTY
 TWP **ne/se 27-4-** RANGE
2 w
 SECTION QTR ACRES **240**
 PREV. CROP **Barley**



SUBMITTED FOR:
 Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: GJ4376
 GJ CHEMICAL COMPANY
 4045 RD 9 NW
 BOX 1648
 ALTONA, MB **ROG 0B0**

REF # **4132151** BOX # **293**
 LAB # **NW60271**


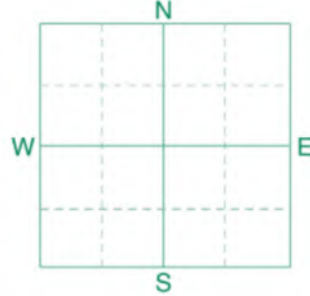
Date Sampled _____ Date Received **08/27/2023** Date Reported **08/28/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High							
Nitrate	0-6" 42 lb/acre		Canola-bu		Soybeans		Wheat-Spring		
	6-24" 9 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24" 51 lb/acre		55 BU		40 BU		80 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen 21 ppm		N 142		N ***		N 165		
Potassium	602 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 50	Band *	
Chloride			K ₂ O 0		K ₂ O 0		K ₂ O 10	Band (Starter)*	
Sulfur	0-6" 28 lb/acre		Cl		Cl		Cl		
	6-24" 144 lb/acre		S 15	Band	S 5	Band (Trial)	S 0		
Boron			B		B		B		
Zinc	0.68 ppm		Zn 1	Band	Zn 0		Zn 0		
Iron			Fe		Fe		Fe		
Manganese			Mn		Mn		Mn		
Copper			Cu		Cu		Cu		
Magnesium			Mg		Mg		Mg		
Calcium			Lime		Lime		Lime		
Sodium									
Org.Matter	6.0 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Carbonate(CCE)			Buffer pH				% Ca	% Mg	% K
							% Na	% H	
	0-6" 0.9 mmho/cm		0-6" 7.6						
Sol. Salts	6-24" 0.74 mmho/cm		6-24" 8.4						

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 21 SAMPLE ID FIELD NAME Corny COUNTY TWP ne/se 26-4-2 w RANGE SECTION QTR ACRES 150 PREV. CROP Barley		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132152 BOX # 293 LAB # NW60272
Date Sampled		Date Received 08/27/2023	Date Reported 08/28/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High						
Nitrate	0-6" 43 lb/acre		Canola-bu		Soybeans		Wheat-Spring	
	6-24" 12 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 55 lb/acre		55 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 14 ppm		N 138		N ***		N 161	
Potassium	536 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 50	Band *
Chloride			K ₂ O 0		K ₂ O 0		K ₂ O 10	Band (Starter)*
Sulfur	0-6" 26 lb/acre		Cl		Cl		Cl	
	6-24" 30 lb/acre		S 15	Band	S 5	Band (Trial)	S 5	Band (Trial)
Boron			B		B		B	
Zinc	0.68 ppm		Zn 1	Band	Zn 0		Zn 0	
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org.Matter	6.6 %							
Carbonate(CCE)			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
			Buffer pH				% Ca	% Mg
							% K	% Na
							% H	
	0-6" 0.86 mmho/cm		0-6" 7.4					
Sol. Salts	6-24" 0.62 mmho/cm		6-24" 8.2					


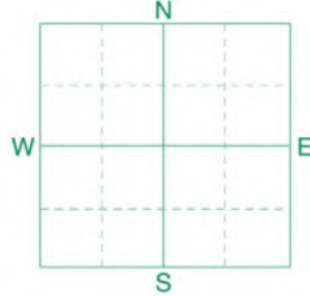
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846


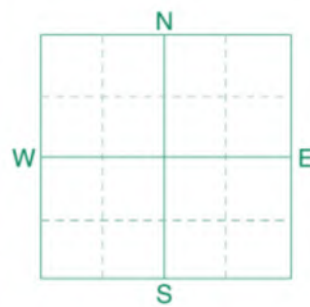
 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 03 / 23 SAMPLE ID FIELD NAME Klassen COUNTY TWP sw/se1-4-2 w RANGE SECTION QTR ACRES 320 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132153 BOX # 2007 LAB # NW77188
Date Sampled		Date Received 09/09/2023	Date Reported 09/12/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Soybeans		Wheat-Spring	
			YIELD GOAL		YIELD GOAL		YIELD GOAL	
			85 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	0-6" 26 lb/acre 6-24" 12 lb/acre		N 94		N ***		N 178	
Phosphorus	Olsen 35 ppm		P ₂ O ₅ 40	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 50	Band *
Potassium	794 ppm		K ₂ O 0		K ₂ O 0		K ₂ O 0	
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 60 lb/acre 6-24" 132 lb/acre		S 0		S 0		S 0	
Boron			B		B		B	
Zinc	4.90 ppm		Zn 0		Zn 0		Zn 0	
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Org.Matter	5.5 %		Buffer pH			% Ca	% Mg	% K
Carbonate(CCE)						% Na	% H	
	0-6" 0.92 mmho/cm 6-24" 0.71 mmho/cm		0-6" 7.7					
Sol. Salts			6-24" 8.4					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 40 K20 = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 30 K20 = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 50 K20 = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


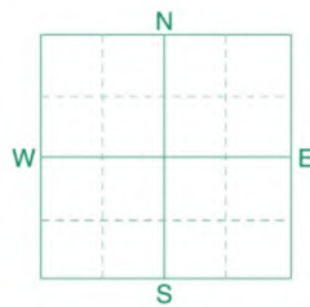
 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 07 SAMPLE ID FIELD NAME Bergman COUNTY TWP se 35-3-2 w RANGE SECTION QTR ACRES 150 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132154 BOX # 1937 LAB # NW77189
Date Sampled		Date Received 09/09/2023	Date Reported 09/12/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Soybeans		Wheat-Spring	
			YIELD GOAL		YIELD GOAL		YIELD GOAL	
			85 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	0-6" 53 lb/acre 6-24" 33 lb/acre 0-24" 86 lb/acre		N 46		N ***		N 130	
Phosphorus	Olsen 37 ppm		P ₂ O ₅ 40	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 50	Band *
Potassium	613 ppm		K ₂ O 10	Band (Starter)*	K ₂ O 0		K ₂ O 10	Band (Starter)*
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 118 lb/acre 6-24" 360 +lb/acre		S 0		S 0		S 0	
Boron			B		B		B	
Zinc	5.96 ppm		Zn 0		Zn 0		Zn 0	
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org. Matter	5.7 %		Soil pH		Buffer pH		Cation Exchange Capacity	
Carbonate(CCE)							% Base Saturation (Typical Range)	
							% Ca % Mg % K % Na % H	
			0-6" 7.9		6-24" 8.2			
Sol. Salts								

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


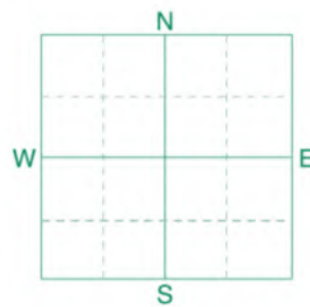
 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 11 SAMPLE ID FIELD NAME Janz COUNTY TWP nw 11-4-2 wRANGE SECTION QTR ACRES 310 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132155 BOX # 10457 LAB # NW137793
Date Sampled		Date Received 09/29/2023	Date Reported 10/02/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High						
Nitrate	0-6" 11 lb/acre	*****	Barley		Soybeans		Wheat-Spring	
	6-24" 3 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 14 lb/acre		85 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 6 ppm	*****	N 118		N ***		N 202	
Potassium	471 ppm	*****	P ₂ O ₅ 40	Band *	P ₂ O ₅ 35	Band *	P ₂ O ₅ 52	Band *
Chloride			K ₂ O 10	Band (Starter)*	K ₂ O 0		K ₂ O 10	Band (Starter)*
Sulfur	0-6" 30 lb/acre	*****	Cl		Cl		Cl	
	6-24" 102 lb/acre	*****	S 0		S 5	Band (Trial)	S 0	
Boron			B		B		B	
Zinc	0.41 ppm	*****	Zn 1	Band	Zn 1	Band	Zn 1	Band
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org. Matter	5.9 %	*****	Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH				% Ca	% Mg
							% K	% Na
							% H	
	0-6" 0.61 mmho/cm	*****	0-6" 8.1					
Sol. Salts	6-24" 0.63 mmho/cm	*****	6-24" 8.5					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 13 SAMPLE ID FIELD NAME Martens COUNTY TWP se 34-3-2 w RANGE SECTION QTR ACRES 147 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132156 BOX # 2056 LAB # NW77190
Date Sampled		Date Received 09/09/2023	Date Reported 09/12/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Soybeans		Wheat-Spring	
			YIELD GOAL		YIELD GOAL		YIELD GOAL	
			85 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	0-6" 13 lb/acre 6-24" 6 lb/acre	*****	N	113	N	***	N	197
Phosphorus	Olsen 4 ppm	*****	P ₂ O ₅	43 Band *	P ₂ O ₅	38 Band *	P ₂ O ₅	57 Band *
Potassium	381 ppm	*****	K ₂ O	10 Band (Starter)*	K ₂ O	0	K ₂ O	10 Band (Starter)*
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 42 lb/acre 6-24" 90 lb/acre	*****	S	0	S	0	S	0
Boron			B		B		B	
Zinc	0.37 ppm	*****	Zn	1 Band	Zn	1 Band	Zn	1 Band
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org.Matter	4.2 %	*****	Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH				% Ca	% Mg
							% K	% Na
							% H	
Sol. Salts	0-6" 0.4 mmho/cm 6-24" 0.36 mmho/cm	*****	0-6" 8.0					
			6-24" 8.4					


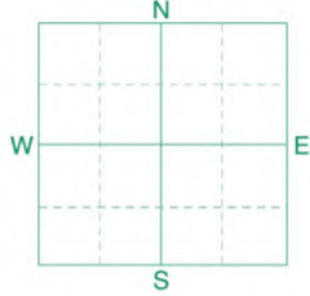
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846


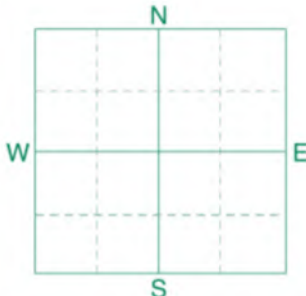
 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 14 SAMPLE ID FIELD NAME Wedge COUNTY TWP ne 27-3-2 w RANGE SECTION QTR ACRES 23 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132158 BOX # 1866 LAB # NW77191
Date Sampled	Date Received 09/09/2023	Date Reported 09/11/2023	

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Potatoes		Wheat-Spring	
Nitrate	0-6" 42 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	6-24" 9 lb/acre		85 BU		325 Cwt		80 BU	
	0-24" 51 lb/acre		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 13 ppm		N 81		N 112		N 165	
Potassium	438 ppm		P ₂ O ₅ 40	Band *	P ₂ O ₅ 61	Band *	P ₂ O ₅ 50	Band *
Chloride			K ₂ O 10	Band (Starter)*	K ₂ O 30	Band (2x2) *	K ₂ O 10	Band (Starter)*
Sulfur	0-6" 120 +lb/acre		Cl		Cl		Cl	
Boron	6-24" 360 +lb/acre		S 0		S 0		S 0	
Zinc	0.91 ppm		B		B		B	
Iron			Zn 0		Zn 2	Band	Zn 0	
Manganese			Fe		Fe		Fe	
Copper			Mn		Mn		Mn	
Magnesium			Cu		Cu		Cu	
Calcium			Mg		Mg		Mg	
Sodium			Lime		Lime		Lime	
Org.Matter	4.4 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH		% Ca	% Mg	% K	% Na
					% H			
Sol. Salts	0-6" 2.64 mmho/cm		0-6" 7.9					
	6-24" 3.43 mmho/cm		6-24" 8.1					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. High salinity may decrease crop yield. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. High salinity may decrease crop yield. Crop nutrient removal: P2O5 = 59 K2O = 163 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. High salinity may decrease crop yield. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


 <p>GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109</p>	SOIL TEST REPORT		
	FIELD ID 15 SAMPLE ID FIELD NAME Hordean COUNTY TWP sw 15-3-2 w RANGE SECTION QTR ACRES 145 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132160 BOX # 2056 LAB # NW77192
Date Sampled		Date Received 09/09/2023	Date Reported 09/12/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Soybeans		Wheat-Spring	
			YIELD GOAL		YIELD GOAL		YIELD GOAL	
			85 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	0-6" 7 lb/acre 6-24" 3 lb/acre 0-24" 10 lb/acre	****	N 122		N ***		N 206	
Phosphorus	Olsen 5 ppm	*****	P ₂ O ₅ 41	Band *	P ₂ O ₅ 37	Band *	P ₂ O ₅ 55	Band *
Potassium	293 ppm	*****	K ₂ O 10	Band (Starter)*	K ₂ O 0		K ₂ O 10	Band (Starter)*
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 34 lb/acre 6-24" 114 lb/acre	*****	S 0		S 0		S 0	
Boron			B		B		B	
Zinc	0.47 ppm	*****	Zn 1	Band	Zn 1	Band	Zn 1	Band
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Org.Matter	4.1 %	*****	Buffer pH		% Ca	% Mg	% K	% Na
Carbonate(CCE)					% H			
Sol. Salts	0-6" 0.44 mmho/cm 6-24" 0.38 mmho/cm	*****	0-6" 7.9					
			6-24" 8.4					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

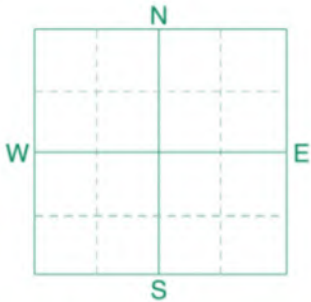
Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.



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

SOIL TEST REPORT

FIELD ID **17**
 SAMPLE ID
 FIELD NAME **Reimer**
 COUNTY
 TWP **ne 19-4-1 w RANGE**
 SECTION QTR ACRES **155**
 PREV. CROP **Canola-bu**



SUBMITTED FOR:
 Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: GJ4376
 GJ CHEMICAL COMPANY
 4045 RD 9 NW
 BOX 1648
 ALTONA, MB **ROG 0B0**

REF # **4132161** BOX # **2001**
 LAB # **NW77193**

Date Sampled _____ Date Received **09/09/2023** Date Reported **09/12/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Soybeans		Wheat-Spring	
Nitrate	0-6" 11 lb/acre 6-24" 3 lb/acre	*****	YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 14 lb/acre		85 BU		40 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 16 ppm	*****	N 118		N ***		N 202	
Potassium	631 ppm	*****	P ₂ O ₅ 40	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 50	Band *
Chloride			K ₂ O 10	Band (Starter)*	K ₂ O 0		K ₂ O 10	Band (Starter)*
Sulfur	0-6" 52 lb/acre 6-24" 30 lb/acre	*****	Cl		Cl		Cl	
Boron			S 0		S 0		S 0	
Zinc	0.95 ppm	*****	B		B		B	
Iron			Zn 0		Zn 0		Zn 0	
Manganese			Fe		Fe		Fe	
Copper			Mn		Mn		Mn	
Magnesium			Cu		Cu		Cu	
Calcium			Mg		Mg		Mg	
Sodium			Lime		Lime		Lime	
Org. Matter	6.4 %	*****	Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH				% Ca	% Mg
	0-6" 0.92 mmho/cm 6-24" 0.58 mmho/cm	*****					% K	% Na
Sol. Salts			0-6" 7.2				% H	
			6-24" 8.3					


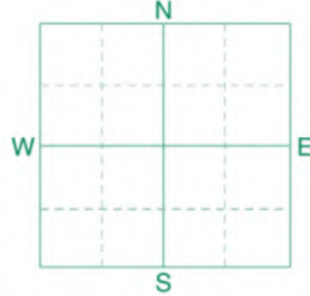
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846


 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 35 SAMPLE ID FIELD NAME COUNTY TWP SE 14-4-3- RANGE W SECTION QTR ACRES 155 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132167 BOX # 10543 LAB # NW137794
Date Sampled		Date Received 09/29/2023	Date Reported 10/02/2023

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Wheat-Spring		Soybeans		Barley	
			YIELD GOAL		YIELD GOAL		YIELD GOAL	
			80 BU		40 BU		85 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	0-6" 45 lb/acre 6-24" 18 lb/acre 0-24" 63 lb/acre		N 153		N ***		N 69	
Phosphorus	Olsen 8 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 32	Band *	P ₂ O ₅ 40	Band *
Potassium	287 ppm		K ₂ O 10	Band (Starter)*	K ₂ O 0		K ₂ O 10	Band (Starter)*
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 98 lb/acre 6-24" 360 +lb/acre		S 0		S 0		S 0	
Boron			B		B		B	
Zinc	0.50 ppm		Zn 1	Band	Zn 1	Band	Zn 1	Band
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Org.Matter	5.1 %		Buffer pH			% Ca	% Mg	% K
Carbonate(CCE)						% Na	% H	
	0-6" 0.83 mmho/cm 6-24" 1.24 mmho/cm		0-6" 7.8					
Soil Salts			6-24" 8.3					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 2: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 3: *CAUTION: Seed-placed fertilizer can cause injury. * May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

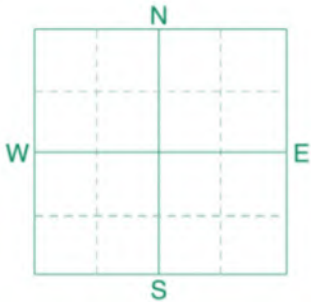
DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846



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

SOIL TEST REPORT

FIELD ID **01**
 SAMPLE ID
 FIELD NAME **Dennis**
 COUNTY
 TWP **sw 6-4-1 w** RANGE
 SECTION QTR ACRES **160**
 PREV. CROP **Soybeans**



SUBMITTED FOR:
 Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: GJ4376
 GJ CHEMICAL COMPANY
 4045 RD 9 NW
 BOX 1648
 ALTONA, MB **ROG 0B0**

REF # **4132169** BOX # **10482**
 LAB # **NW137795**


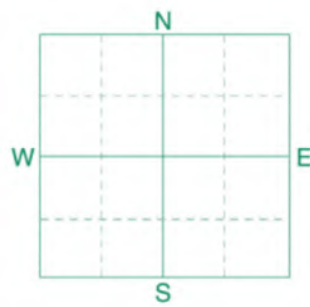
Date Sampled _____ Date Received **09/29/2023** Date Reported **10/02/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Wheat-Spring		Canola-bu	
Nitrate	0-6" 28 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	6-24" 9 lb/acre	*****	85 BU		80 BU		55 BU	
	0-24" 37 lb/acre		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 12 ppm	*****	N 80		N 164		N 141	
Potassium	540 ppm	*****	P ₂ O ₅ 40	Band *	P ₂ O ₅ 50	Band *	P ₂ O ₅ 50	Band *
Chloride			K ₂ O 10	Band (Starter)*	K ₂ O 10	Band (Starter)*	K ₂ O 0	
Sulfur	0-6" 26 lb/acre	*****	Cl		Cl		Cl	
	6-24" 228 lb/acre	*****	S 0		S 0		S 15	Band
Boron			B		B		B	
Zinc	0.84 ppm	*****	Zn 0		Zn 0		Zn 1	Band
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org. Matter	6.6 %	*****	Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH				% Ca	% Mg
							% K	% Na
							% H	
	0-6" 0.68 mmho/cm	*****	0-6" 8.0					
Sol. Salts	6-24" 0.84 mmho/cm	*****	6-24" 8.5					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 10 SAMPLE ID FIELD NAME Kehler COUNTY TWP ne 2-4-2 w RANGE SECTION QTR ACRES 160 PREV. CROP Soybeans		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,		SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB	
		REF # 4132170 BOX # 10549 LAB # NW207260	
Date Sampled		Date Received 10/19/2023	
		Date Reported 10/23/2023	

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Wheat-Spring		Canola-bu	
	0-6" 19 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	6-24" 12 lb/acre		85 BU		80 BU		55 BU	
	0-24" 31 lb/acre		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	Olsen 11 ppm		N	86	N	170	N	147
Phosphorus			P ₂ O ₅	40 Band *	P ₂ O ₅	50 Band *	P ₂ O ₅	50 Band *
Potassium	467 ppm		K ₂ O	10 Band (Starter)*	K ₂ O	10 Band (Starter)*	K ₂ O	0
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 76 lb/acre		S	0	S	0	S	10 Band
Boron	6-24" 360 +lb/acre		B		B		B	
Zinc	1.49 ppm		Zn	0	Zn	0	Zn	0
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium			Soil pH		% Base Saturation (Typical Range)			
Org.Matter	4.6 %		Buffer pH	Cation Exchange Capacity	% Ca	% Mg	% K	% Na
Carbonate(CCE)					% H			
	0-6" 0.53 mmho/cm		0-6"	8.3				
	6-24" 0.94 mmho/cm		6-24"	8.5				
Soi. Salts								


Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

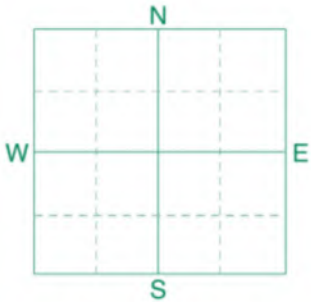
DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846



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

SOIL TEST REPORT

FIELD ID **30**
 SAMPLE ID
 FIELD NAME **Kane East**
 COUNTY
 TWP **nw 6-5-2 w** RANGE
 SECTION QTR ACRES **160**
 PREV. CROP **Soybeans**



SUBMITTED FOR:
Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: GJ4376
GJ CHEMICAL COMPANY
4045 RD 9 NW
BOX 1648
ALTONA, MB

ROG 080

REF # **4132174** BOX # **10472**
 LAB # **NW207261**


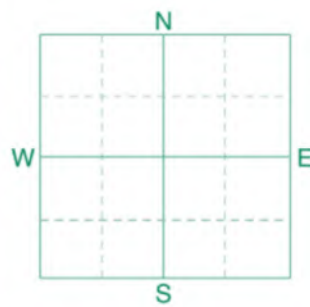
Date Sampled _____ Date Received **10/19/2023** Date Reported **10/23/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High						
Nitrate	0-6" 14 lb/acre		Barley		Wheat-Spring		Canola-bu	
	6-24" 36 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 50 lb/acre		85 BU		80 BU		55 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 5 ppm	*****	N 67		N 151		N 128	
Potassium	449 ppm	*****	P ₂ O ₅ 41	Band *	P ₂ O ₅ 55	Band *	P ₂ O ₅ 55	Band *
Chloride			K ₂ O 10	Band (Starter)*	K ₂ O 10	Band (Starter)*	K ₂ O 0	
Sulfur	0-6" 56 lb/acre 6-24" 360 +lb/acre	*****	Cl		Cl		Cl	
Boron			S 0		S 0		S 10	Band
Zinc	0.34 ppm	*****	B		B		B	
Iron			Zn 1	Band	Zn 1	Band	Zn 2	Band
Manganese			Fe		Fe		Fe	
Copper			Mn		Mn		Mn	
Magnesium			Cu		Cu		Cu	
Calcium			Mg		Mg		Mg	
Sodium			Lime		Lime		Lime	
Org. Matter	5.1 %	*****	Soil pH		Buffer pH		Cation Exchange Capacity	
Carbonate(CCE)							% Base Saturation (Typical Range)	
Sol. Salts	0-6" 0.48 mmho/cm 6-24" 1.29 mmho/cm	*****					% Ca	% Mg
							% K	% Na
							% H	
			0-6" 8.1					
			6-24" 8.4					

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

 GJ Chemical Co.™ Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 32 SAMPLE ID FIELD NAME Silver COUNTY TWP sw 21-5-3 w RANGE SECTION QTR ACRES 160 PREV. CROP Soybeans		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132177 BOX # 10053 LAB # NW201401
Date Sampled	Date Received 10/18/2023	Date Reported 10/20/2023	

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Barley		Wheat-Spring		Canola-bu	
			YIELD GOAL		YIELD GOAL		YIELD GOAL	
			85 BU		80 BU		55 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	0-6" 12 lb/acre 6-24" 39 lb/acre 0-24" 51 lb/acre	*****	N 66		N 150		N 127	
Phosphorus	Olsen 6 ppm	*****	P ₂ O ₅ 40	Band *	P ₂ O ₅ 52	Band *	P ₂ O ₅ 52	Band *
Potassium	362 ppm	*****	K ₂ O 10	Band (Starter)*	K ₂ O 10	Band (Starter)*	K ₂ O 0	
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 34 lb/acre 6-24" 360 +lb/acre	*****	S 0		S 0		S 15	Band
Boron			B		B		B	
Zinc	0.37 ppm	*****	Zn 1	Band	Zn 1	Band	Zn 2	Band
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org.Matter	4.5 %	*****						
Carbonate(CCE)								
	0-6" 0.69 mmho/cm 6-24" 2.12 mmho/cm	*****						
Sol. Salts		*****						
			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)		
						% Ca	% Mg	% K
			0-6" 8.3					
			6-24" 8.2					


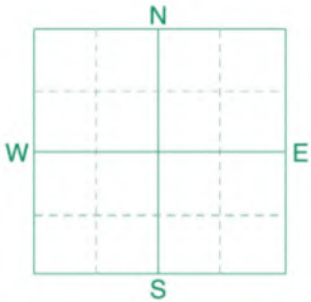
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury. * Previous crop nitrogen credit: 15 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury. * Previous crop nitrogen credit: 15 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 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury. * Previous crop nitrogen credit: 15 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 = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002


DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846

 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 29 SAMPLE ID FIELD NAME Sawatzky COUNTY TWP ne/se 17-4-1 w RANGE SECTION QTR ACRES 160 PREV. CROP Corn-Grain		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 4132179 BOX # 10472 LAB # NW207262

Date Sampled _____ Date Received **10/19/2023** Date Reported **10/23/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		V Low Low Med High	Barley		Wheat-Spring		Canola-bu	
Nitrate	0-6" 37 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	6-24" 33 lb/acre		85 BU		80 BU		55 BU	
	0-24" 70 lb/acre		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
			N 62		N 146		N 123	
Phosphorus	Olsen 18 ppm		P ₂ O ₅ 40	Band *	P ₂ O ₅ 50	Band *	P ₂ O ₅ 50	Band *
Potassium	546 ppm		K ₂ O 10	Band (Starter)*	K ₂ O 10	Band (Starter)*	K ₂ O 0	
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 26 lb/acre		S 5	Band (Trial)	S 5	Band (Trial)	S 15	Band
Boron	6-24" 30 lb/acre		B		B		B	
Zinc	1.57 ppm		Zn 0		Zn 0		Zn 0	
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Org. Matter	7.7 %		Buffer pH		% Ca	% Mg	% K	% Na
Carbonate(CCE)					% H			
	0-6" 0.7 mmho/cm		0-6" 7.4					
Sol. Salts	6-24" 0.59 mmho/cm		6-24" 8.0					

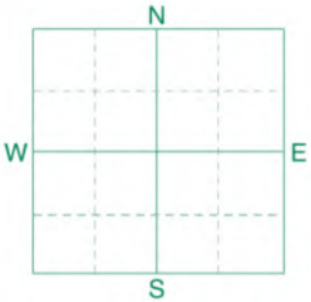
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.



GJ Chemical Co.
 Soil Analysis by Agvise Laboratories
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 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **12**
 SAMPLE ID
 FIELD NAME **Melba**
 COUNTY
 TWP **ne 34-3-2 w RANGE**
 SECTION QTR ACRES **155**
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:
 Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: GJ4376
 GJ CHEMICAL COMPANY
 4045 RD 9 NW
 BOX 1648
 ALTONA, MB **ROG 0B0**

REF # **4132180** BOX # **10472**
 LAB # **NW207263**

Date Sampled _____ Date Received **10/19/2023** Date Reported **10/23/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High	Barley		Wheat-Spring		Canola-bu		
Nitrate	0-6" 62 lb/acre 6-24" 51 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24" 113 lb/acre		85 BU		80 BU		55 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen 10 ppm		N	19	N	103	N	80	
Potassium	347 ppm		P ₂ O ₅	40 Band *	P ₂ O ₅	50 Band *	P ₂ O ₅	50 Band *	
Chloride			K ₂ O	10 Band (Starter)*	K ₂ O	10 Band (Starter)*	K ₂ O	0	
Sulfur	0-6" 10 lb/acre 6-24" 144 lb/acre		Cl		Cl		Cl		
Boron			S	0	S	0	S	17 Band	
Zinc	1.06 ppm		B		B		B		
Iron			Zn	0	Zn	0	Zn	0	
Manganese			Fe		Fe		Fe		
Copper			Mn		Mn		Mn		
Magnesium			Cu		Cu		Cu		
Calcium			Mg		Mg		Mg		
Sodium			Lime		Lime		Lime		
Org.Matter	4.2 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Carbonate(CCE)			Buffer pH				% Ca	% Mg	% K
	0-6" 0.53 mmho/cm 6-24" 0.42 mmho/cm						% Na	% H	
Sol. Salts			0-6" 8.1 6-24" 8.4						


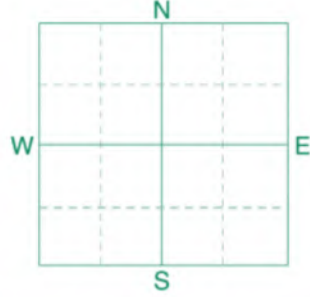
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846

 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 09 SAMPLE ID FIELD NAME Wiebe N COUNTY TWP sw 2-4-2 w RANGE SECTION QTR ACRES 120 PREV. CROP Corn-Grain		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,		SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB	
		REF # 4132182 BOX # 10472 LAB # NW207264	


Date Sampled _____ Date Received **10/19/2023** Date Reported **10/23/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High	Barley		Wheat-Spring		Canola-bu		
Nitrate	0-6"	67 lb/acre	YIELD GOAL		YIELD GOAL		YIELD GOAL		
	6-24"		60 lb/acre	85 BU	80 BU	55 BU			
	0-24"	127 lb/acre	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
	Olsen	23 ppm	N	10	N	89	N	66	
Phosphorus			P ₂ O ₅	40 Band *	P ₂ O ₅	50 Band *	P ₂ O ₅	50 Band *	
Potassium		401 ppm	K ₂ O	10 Band (Starter)*	K ₂ O	10 Band (Starter)*	K ₂ O	0	
Chloride			Cl		Cl		Cl		
Sulfur	0-6"	20 lb/acre	S	0	S	0	S	15 Band	
6-24"	276 lb/acre		B		B		B		
Boron			Zn	0	Zn	0	Zn	0	
Zinc		1.81 ppm	Fe		Fe		Fe		
Iron			Mn		Mn		Mn		
Manganese			Cu		Cu		Cu		
Cooper			Mg		Mg		Mg		
Magnesium			Lime		Lime		Lime		
Calcium			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Sodium			0-6"	7.9			% Ca	% Mg	% K
Org.Matter		5.4 %	6-24"	8.2			% Na	% H	
Carbonate(CCE)									
	0-6"	0.83 mmho/cm							
	6-24"	0.94 mmho/cm							
Sol. Salts									

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

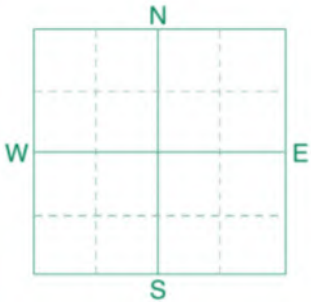
DGH Engineering Ltd.
 12 Aviation Boulevard
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 (204) 334-8846



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

SOIL TEST REPORT

FIELD ID **26**
 SAMPLE ID
 FIELD NAME **Wieler SW**
 COUNTY
 TWP **sw 31-3-1 w RANGE**
 SECTION QTR ACRES **160**
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: **GJ4376**
GJ CHEMICAL COMPANY
4045 RD 9 NW
BOX 1648
ALTONA, MB **RDG 0B0**

REF # **4153151** BOX # **1027**
 LAB # **NW68457**


Date Sampled _____ Date Received **09/03/2023** Date Reported **09/05/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High							
Nitrate	0-6" 35 lb/acre 6-24" 51 lb/acre		Canola-bu		Corn-Grain		Corn-Grain		
	0-24" 86 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL		
			60 BU		190 BU		180 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Phosphorus	Olsen 21 ppm		N 124		N 142		N 130		
Potassium	522 ppm		P ₂ O ₅ 54	Band *	P ₂ O ₅ 70	Band *	P ₂ O ₅ 67	Band *	
Chloride			K ₂ O 0		K ₂ O 10	Band (2x2) *	K ₂ O 10	Band (2x2) *	
Sulfur	0-6" 64 lb/acre 6-24" 360 +lb/acre		Cl		Cl		Cl		
Boron			S 10	Band	S 0		S 0		
Zinc	1.62 ppm		B		B		B		
Iron			Zn 0		Zn 1	Band	Zn 1	Band	
Manganese			Fe		Fe		Fe		
Copper			Mn		Mn		Mn		
Magnesium			Cu		Cu		Cu		
Calcium			Mg		Mg		Mg		
Sodium			Lime		Lime		Lime		
Org.Matter	5.7 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Carbonate(CCE)			Buffer pH				% Ca	% Mg	% K
	0-6" 0.49 mmho/cm 6-24" 1.67 mmho/cm						% Na	% H	
Sol. Salts			0-6" 8.1 6-24" 8.3						

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 54 K2O = 27 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 70 K2O = 44 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

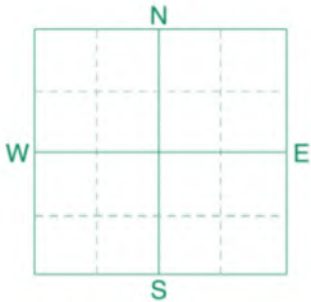
Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 67 K2O = 41 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.



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

SOIL TEST REPORT

FIELD ID **27**
 SAMPLE ID
 FIELD NAME **Wieler NE**
 COUNTY
 TWP **ne 31-3-1 w RANGE**
 SECTION QTR ACRES **160**
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:
 Horizon Colony Farms Ltd

Lowe Farm,

SUBMITTED BY: GJ4376
 GJ CHEMICAL COMPANY
 4045 RD 9 NW
 BOX 1648
 ALTONA, MB **ROG 0B0**

REF # **4162370** BOX # **2056**
 LAB # **NW77496**

Date Sampled _____ Date Received **09/09/2023** Date Reported **09/12/2023**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice					
		VLow Low Med High										
Nitrate	0-6"	54 lb/acre			Canola-bu		Corn-Grain		Corn-Grain			
	6-24"		30 lb/acre			YIELD GOAL		YIELD GOAL		YIELD GOAL		
	0-24"			84 lb/acre			60 BU		190 BU		180 BU	
SUGGESTED GUIDELINES				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
Band/Maint.				Band/Maint.		Band/Maint.		Band/Maint.		Band/Maint.		
LB/ACRE APPLICATION				LB/ACRE APPLICATION		LB/ACRE APPLICATION		LB/ACRE APPLICATION		LB/ACRE APPLICATION		
Phosphorus	Olsen 21 ppm			N 126		N 144		N 132				
Potassium	721 ppm			P ₂ O ₅ 54	Band *	P ₂ O ₅ 70	Band *	P ₂ O ₅ 67	Band *			
Chloride				K ₂ O 0		K ₂ O 10	Band (2x2) *	K ₂ O 10	Band (2x2) *			
Sulfur	0-6" 120 +lb/acre 6-24" 360 +lb/acre			Cl		Cl		Cl				
Boron				S 10	Band	S 0		S 0				
Zinc	1.81 ppm			B		B		B				
Iron				Zn 0		Zn 1	Band	Zn 1	Band			
Manganese				Fe		Fe		Fe				
Copper				Mn		Mn		Mn				
Magnesium				Cu		Cu		Cu				
Calcium				Mg		Mg		Mg				
Sodium				Lime		Lime		Lime				
Org. Matter	6.2 %			Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)				Buffer pH				% Ca	% Mg	% K	% Na	% H
0-6"	0.78 mmho/cm			0-6" 8.0								
6-24"	1.34 mmho/cm			6-24" 8.3								
Soil Salts												


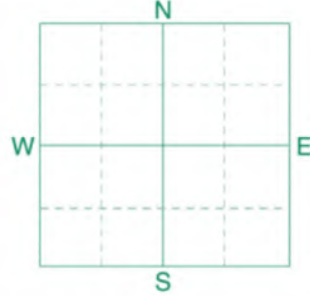
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 54 K2O = 27 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 70 K2O = 44 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 67 K2O = 41 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

DGH Engineering Ltd.
 12 Aviation Boulevard
 St. Andrews, MB, R1A 3N5
 (204) 334-8846

 GJ Chemical Co.™ Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 24 SAMPLE ID FIELD NAME Hoffman COUNTY TWP nw 32-3-1 wRANGE SECTION QTR ACRES 160 PREV. CROP Soybeans		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,		SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB	
		REF # 4247863 BOX # 10452 LAB # NW138182	
Date Sampled		Date Received 09/29/2023	
		Date Reported 10/02/2023	

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High						
Nitrate	0-6" 13 lb/acre		Canola-bu		Corn-Grain		Wheat-Spring	
	6-24" 6 lb/acre	*****	YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 19 lb/acre		55 BU		160 BU		80 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus	Olsen 6 ppm	*****	N 159		N 143		N 182	
Potassium	474 ppm	*****	P ₂ O ₅ 52	Band *	P ₂ O ₅ 65	Band *	P ₂ O ₅ 52	Band *
Chloride			K ₂ O 0		K ₂ O 10	Band (2x2) *	K ₂ O 10	Band (Starter) *
Sulfur	0-6" 12 lb/acre	*****	Cl		Cl		Cl	
	6-24" 288 lb/acre	*****	S 17	Band	S 0		S 0	
Boron			B		B		B	
Zinc	0.40 ppm	*****	Zn 2	Band	Zn 2	Band	Zn 1	Band
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org.Matter	5.7 %	*****	Soil pH		Buffer pH		Cation Exchange Capacity	
Carbonate(CCE)							% Base Saturation (Typical Range)	
							% Ca % Mg % K % Na % H	
			0-6" 8.2					
Soi. Salts	0-6" 0.45 mmho/cm	*****	6-24" 8.5					
	6-24" 0.94 mmho/cm	*****						


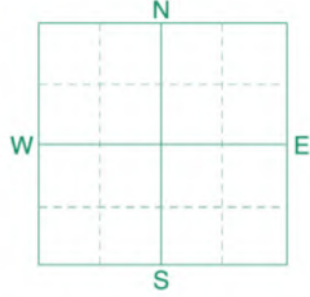
Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 lb/acre N. Previous crop nitrogen credit may be adjusted for local conditions. May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* 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 = 59 K2O = 37 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* Previous crop nitrogen credit: 15 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 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

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 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 16 SAMPLE ID FIELD NAME Dueck COUNTY TWP ne 35-3-2 w RANGE SECTION QTR ACRES 130 PREV. CROP Wheat-Spring		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 3772210 BOX # 11625 LAB # NW103832


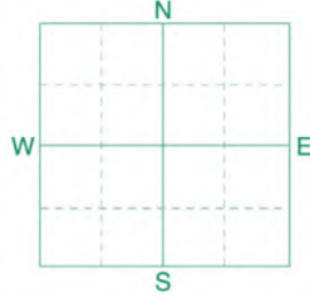
Date Sampled _____ Date Received **09/27/2022** Date Reported **09/28/2022**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High						
Nitrate	0-6" 17 lb/acre		Canola-bu		Soybeans		Canola-bu	
	6-24" 27 lb/acre		YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24" 44 lb/acre		55 BU		60 BU		60 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Olsen Phosphorus	26 ppm		N 149		N ***		N 166	
Potassium	613 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 45	Band *	P ₂ O ₅ 54	Band *
Chloride			K ₂ O 0		K ₂ O 0		K ₂ O 0	
Sulfur	0-6" 20 lb/acre 6-24" 138 lb/acre		Cl		Cl		Cl	
Boron			S 15	Band	S 5	Band (Trial)	S 15	Band
Zinc	1.45 ppm		B		B		B	
Iron			Zn 0		Zn 0		Zn 0	
Manganese			Fe		Fe		Fe	
Copper			Mn		Mn		Mn	
Magnesium			Cu		Cu		Cu	
Calcium			Mg		Mg		Mg	
Sodium			Lime		Lime		Lime	
Org.Matter	5.3 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			Buffer pH		% Ca	% Mg	% K	% Na
Sol. Salts	0-6" 0.59 mmho/cm 6-24" 0.64 mmho/cm				% H			

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 50 K20 = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 45 K20 = 71 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.
 Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 54 K20 = 27 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Horizon Colony Farms -Livestock Technical
 Committee Review
 NW-35-003-02W1
 Lowe Farm, Manitoba
 DGH Project Number: 2707-002

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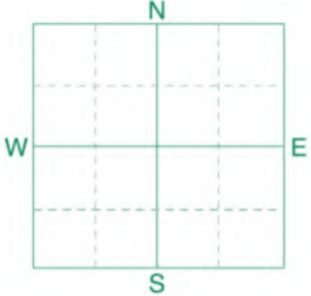
 GJ Chemical Co.™ Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 33 SAMPLE ID FIELD NAME Gartacres COUNTY TWP sw/se 18-4-2 w RANGE SECTION QTR ACRES 320 PREV. CROP Wheat-Spring		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 3772215 BOX # 5391 LAB # NW137515
Date Sampled		Date Received 10/07/2022	Date Reported 10/10/2022

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow Low Med High									
Nitrate	0-6" 19 lb/acre		Canola-bu		Soybeans		Canola-bu				
	6-24" 12 lb/acre	*****	YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 31 lb/acre		55 BU		60 BU		60 BU				
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
			Band/Maint.		Band/Maint.		Band/Maint.				
Olsen Phosphorus	7 ppm	*****	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium	580 ppm	*****	N	162	N	***	N	179			
Chloride			P ₂ O ₅	50 Band *	P ₂ O ₅	50 Band *	P ₂ O ₅	54 Band *			
Sulfur	0-6" 28 lb/acre 6-24" 360 +lb/acre	*****	K ₂ O	0	K ₂ O	0	K ₂ O	0			
Boron			Cl		Cl		Cl				
Zinc	0.66 ppm	*****	S	15 Band	S	5 Band (Trial)	S	15 Band			
Iron			B		B		B				
Manganese			Zn	1 Band	Zn	1 Band	Zn	1 Band			
Copper			Fe		Fe		Fe				
Magnesium			Mn		Mn		Mn				
Calcium			Cu		Cu		Cu				
Sodium			Mg		Mg		Mg				
Org.Matter	5.0 %	*****	Lime		Lime		Lime				
Carbonate(CCE)			Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Soi. Salts	0-6" 0.79 mmho/cm 6-24" 1.37 mmho/cm	*****					% Ca	% Mg	% K	% Na	% H
			0-6"	7.8							
			6-24"	8.3							

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 50 K2O = 25 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 45 K2O = 71 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them. Soybean may respond to nitrogen if soybean history is limited and less than 60 lb/acre nitrate-N is present.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P205 = 54 K2O = 27 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.


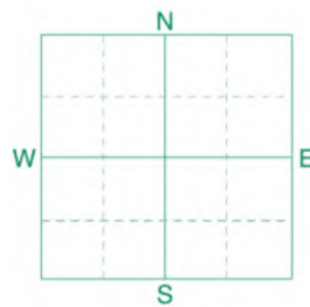
 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 02 SAMPLE ID FIELD NAME Tarmac COUNTY TWP sw 9-4-1 w RANGE SECTION QTR ACRES 135 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 3852773 BOX # 10640 LAB # NW183292
Date Sampled		Date Received 10/19/2022	Date Reported 10/24/2022

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		VLow Low Med High	Wheat-Spring		Soybeans		Corn-Grain		
			YIELD GOAL		YIELD GOAL		YIELD GOAL		
			80 BU		40 BU		160 BU		
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band/Maint.		Band/Maint.		Band/Maint.		
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
Nitrate	0-6" 37 lb/acre 6-24" 30 lb/acre 0-24" 67 lb/acre		N 149		N ***		N 125		
Phosphorus	Olsen 40 ppm		P ₂ O ₅ 50	Band *	P ₂ O ₅ 30	Band *	P ₂ O ₅ 59	Band *	
Potassium	809 ppm		K ₂ O 0		K ₂ O 0		K ₂ O 0		
Chloride			Cl		Cl		Cl		
Sulfur	0-6" 40 lb/acre 6-24" 90 lb/acre		S 0		S 0		S 0		
Boron			B		B		B		
Zinc	2.95 ppm		Zn 0		Zn 0		Zn 0		
Iron			Fe		Fe		Fe		
Manganese			Mn		Mn		Mn		
Copper			Cu		Cu		Cu		
Magnesium			Mg		Mg		Mg		
Calcium									
Sodium									
Org.Matter	7.3 %								
Carbonate(CCE)			Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)		
					% Ca	% Mg	% K	% Na	% H
			0-6" 7.2						
Sol. Salts	0-6" 0.93 mmho/cm 6-24" 0.73 mmho/cm		6-24" 8.2						

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 30 K2O = 47 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 59 K2O = 37 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.

 GJ Chemical Co. Soil Analysis by Agvise Laboratories (http://www.agvise.com) Northwood: (701) 587-6010 Benson: (320) 843-4109	SOIL TEST REPORT		
	FIELD ID 31 SAMPLE ID FIELD NAME Kane West COUNTY TWP ne 1-5-3 w RANGE SECTION QTR ACRES 160 PREV. CROP Canola-bu		
SUBMITTED FOR: Horizon Colony Farms Ltd Lowe Farm,	SUBMITTED BY: GJ4376 GJ CHEMICAL COMPANY 4045 RD 9 NW BOX 1648 ALTONA, MB		REF # 3323062 BOX # 10926 LAB # NW95818
Date Sampled		Date Received 09/18/2021	Date Reported 09/21/2021

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		VLow Low Med High	Wheat-Spring		Barley		Barley-Feed	
			YIELD GOAL		YIELD GOAL		YIELD GOAL	
			80 BU		85 BU		100 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
			Band/Maint.		Band/Maint.		Band/Maint.	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Nitrate	0-6" 48 lb/acre 6-24" 27 lb/acre 0-24" 75 lb/acre		N 141		N 57		N 100	
Phosphorus	Olsen 4 ppm	*****	P ₂ O ₅ 57	Band *	P ₂ O ₅ 43	Band *	P ₂ O ₅ 50	Band *
Potassium	521 ppm	*****	K ₂ O 10	Band (Starter)*	K ₂ O 10	Band (Starter)*	K ₂ O 10	Band (Starter)*
Chloride			Cl		Cl		Cl	
Sulfur	0-6" 102 lb/acre 6-24" 360 +lb/acre	*****	S 0		S 0		S 0	
Boron			B		B		B	
Zinc	0.49 ppm	*****	Zn 1	Band	Zn 1	Band	Zn 1	Band
Iron			Fe		Fe		Fe	
Manganese			Mn		Mn		Mn	
Copper			Cu		Cu		Cu	
Magnesium			Mg		Mg		Mg	
Calcium			Lime		Lime		Lime	
Sodium								
Org.Matter	4.7 %	*****	Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
Carbonate(CCE)			0-6" 7.6	Buffer pH	% Ca	% Mg	% K	% Na
Sol. Salts	0-6" 0.95 mmho/cm 6-24" 2.1 mmho/cm	*****	6-24" 8.0		% H			

Crop 1: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 50 K2O = 30 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 2: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 40 K2O = 43 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.
 Crop 3: *CAUTION: Seed-placed fertilizer can cause injury.* May respond to starter P & K, even on high soil tests. Crop nutrient removal: P2O5 = 47 K2O = 50 AGVISE Band/Maintenance guideline will build P & K test levels to the medium range over several years and then maintain them.