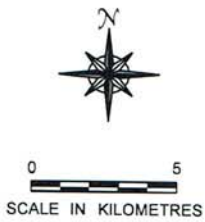


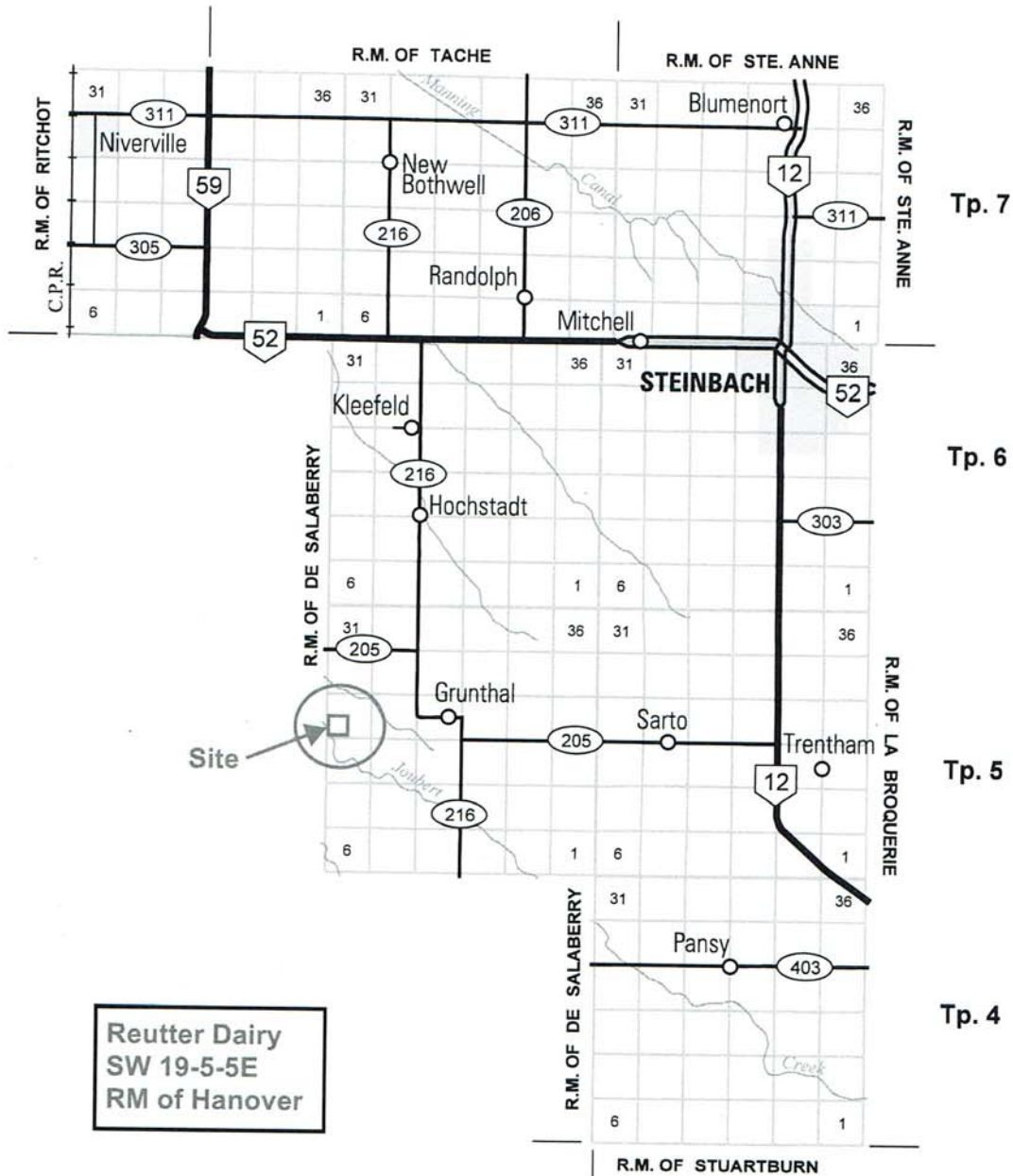
# R.M. OF HANOVER



PROVINCE OF MANITOBA  
 INFRASTRUCTURE  
 HIGHWAY PLANNING AND DESIGN BRANCH  
 GEOGRAPHIC & RECORDS MANAGEMENT SECTION  
 WINNIPEG  
 JANUARY 2015

### LEGEND

- PROVINCIAL TRUNK HIGHWAYS ..... 12
- PROVINCIAL ROADS ..... 311
- ACCESS ROADS .....
- RAILWAYS .....



**Reutter Dairy**  
 SW 19-5-5E  
 RM of Hanover

Rge. 4E.

Rge. 5E.

Rge. 6E.



NE-48-56-1E1

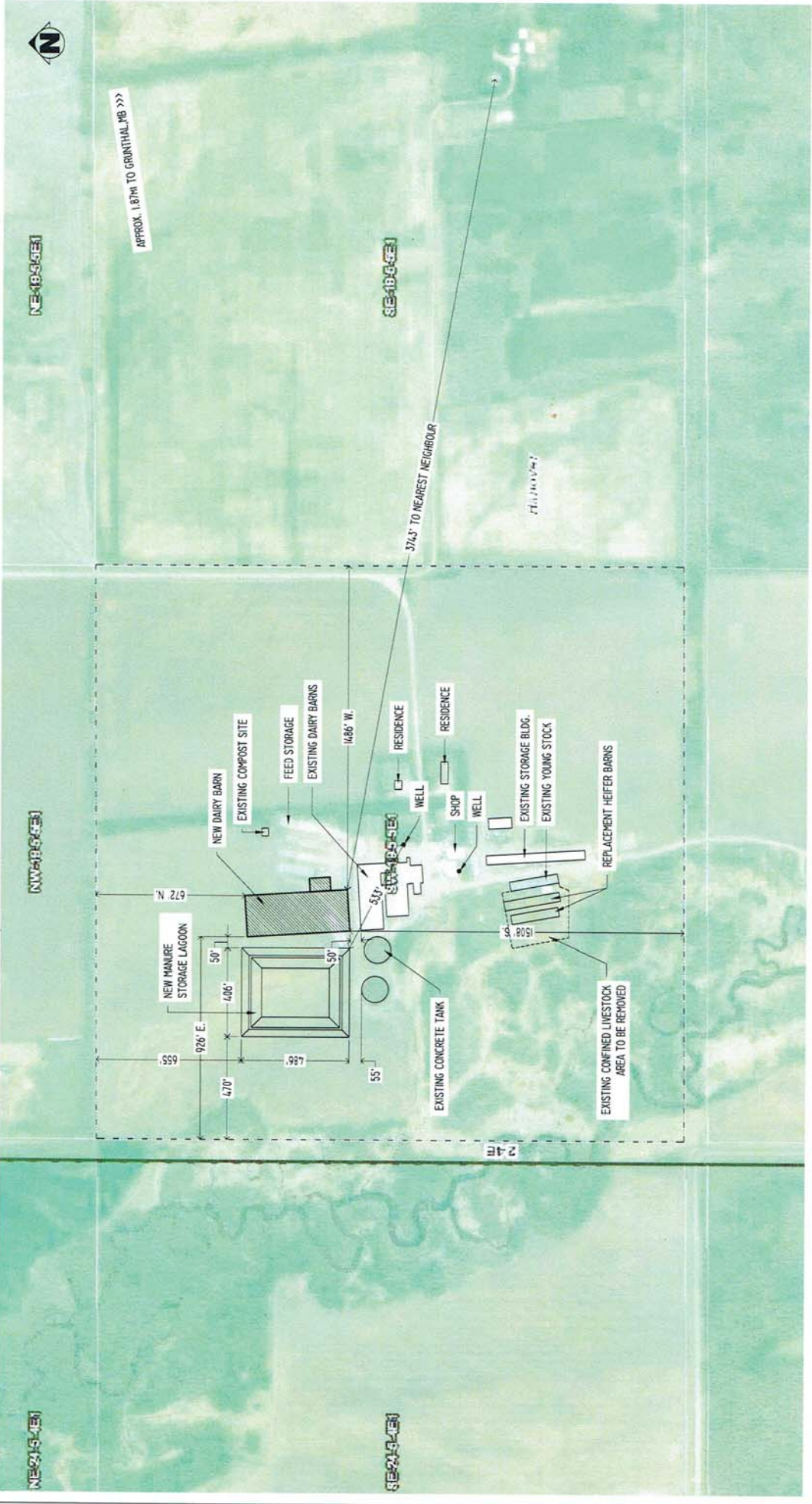
SE-48-56-1E1

NW-48-56-1E1

SW-48-56-1E1

APPROX. 1.87MI TO GRANTHAM, MB >>>

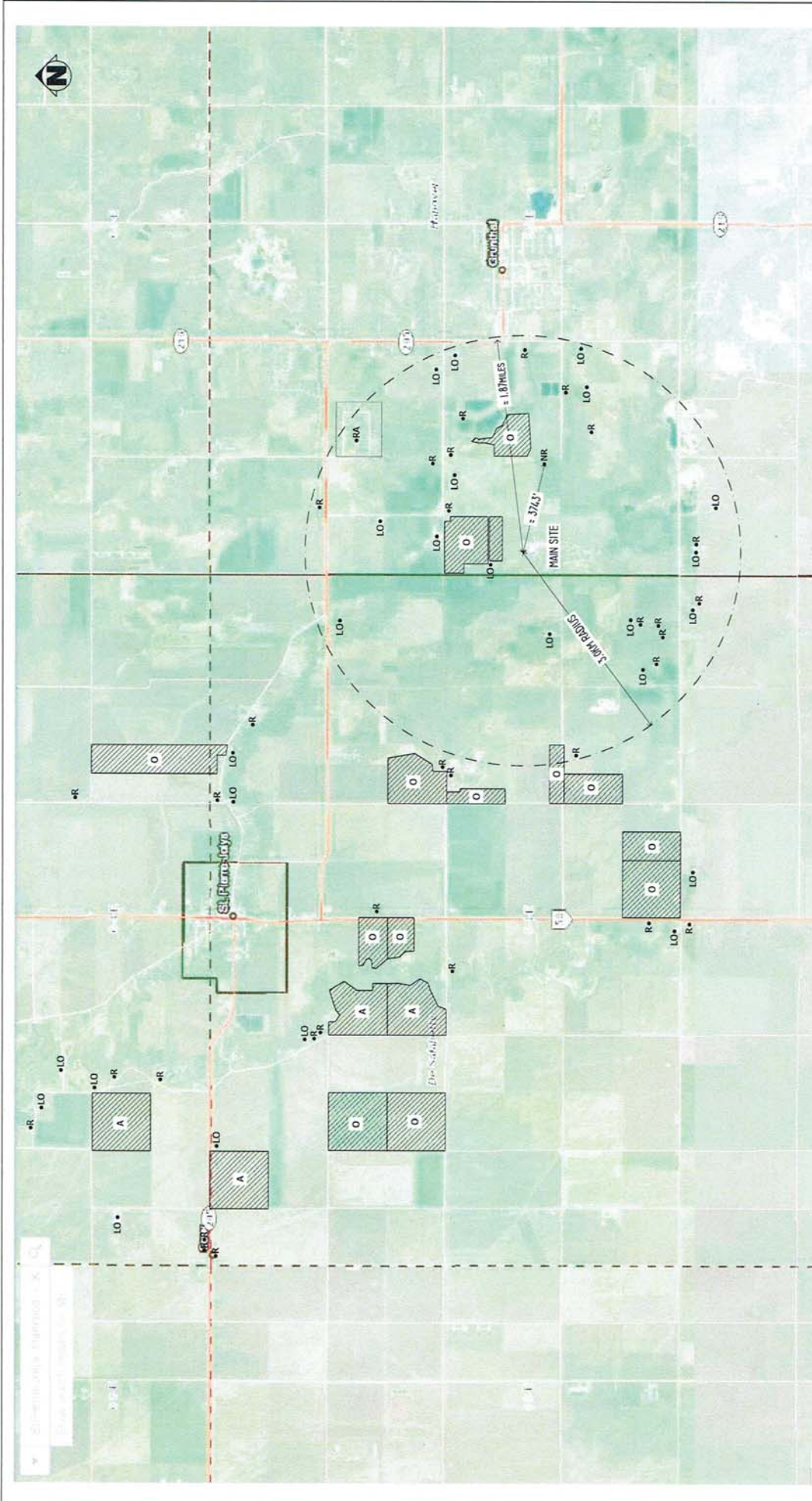
374.3 TO NEAREST NEIGHBOUR



PROJECT NAME	RELITTER DAIRY DAIRY BARN	CLIENT/OWNER	N/A
SHEET TITLE	SITE PLAN	DESIGNER	R. FLORES
SHEET NUMBER	JUNE 2018	DATE	N.T.S.
THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.		SHEET NUMBER	
		SP-1	

**South-Man Engineering**  
 15 1999 Regent Road Winnipeg, Manitoba R 4T 1A4  
 Tel: (204) 781-1111 Fax: (204) 781-1112

C:\Users\Owner\Desktop\Drawings\Drawings\SP-1\Drawings\SP-1\Drawings\SP-1.dwg



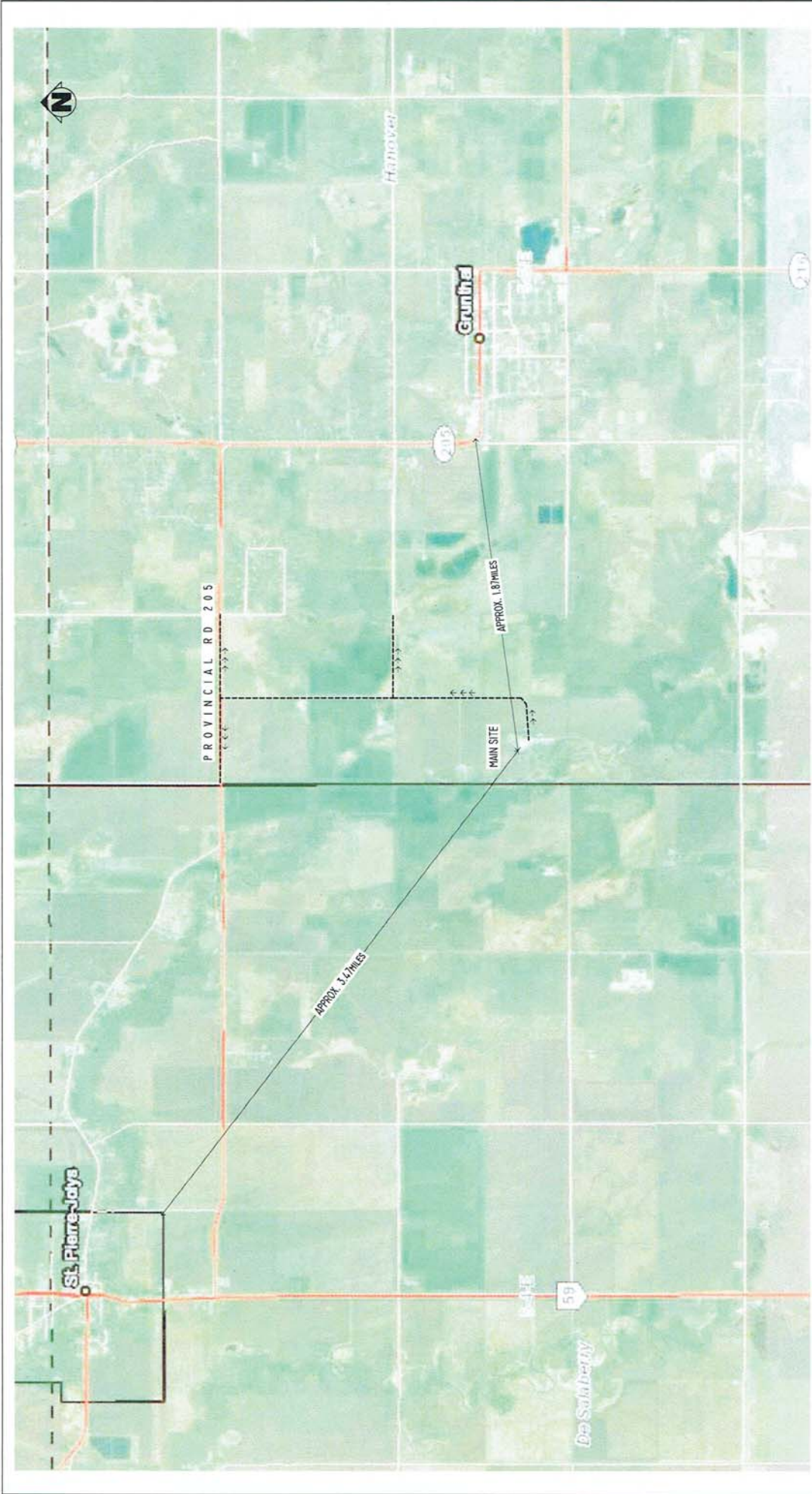
PROJECT NAME	RELUITER DAIRY DAIRY BARN	CLIENT NAME	N/A
DATE	JUNE 2018	DATE	N.T.S.
PROJECT LOCATION	LAND USE & SPREAD FIELD MAP	PROJECT NUMBER	SP-2
DESIGNED BY	R. FLORES	SCALE	
CHECKED BY	SOUTH-MAN ENGINEERING	DATE	

**LEGEND:**

- LO - LIVESTOCK OPERATIONS
- A - SPREAD FIELDS (AGREEMENT)
- O - SPREAD FIELD (OWNED)
- R - RESIDENCE
- RA - RESIDENTIAL AREA
- NR - NEAREST NEIGHBOR (APPROX 0.7MILES)
- - - 30M NOTIFICATION AREA

FOR THE PUBLIC CONDITIONAL USE HEARING





<b>PROJECT NAME</b>	REUTTER DAIRY DAIRY BARN	<b>ISSUE NO.</b>	N/A
<b>CLIENT</b>	TRUCK HAUL ROUTE	<b>DATE</b>	JUNE 2018
<b>ENGINEER</b>	R. FLORES	<b>SCALE</b>	N.T.S.
<b>COMPANY</b>	SOUTH-MAN ENGINEERING	<b>PROJECT NO.</b>	SP-3



# Animal Units Calculator

A Operation Type	B Animal Categories	C Animal Units per Head	Current Operation		Proposed Operation	
			D Current Number of Animals <sup>1</sup>	E Current Animal Units	F Proposed Number of Animals <sup>2</sup>	G Proposed Number of Animal Units
Dairy <sup>3</sup>	Mature cows (lactating and dry) including associated livestock	2	407	814	600	1,200
	Mature cows (lactating and dry)	1.35		-		-
	Heifers (0 to 3 months)	0.16		-		-
	Heifers (4 to 13 months)	0.41		-		-
	Heifers (> 13 months)	0.87		-		-
	Bulls	1.35		-		-
	Veal calves	0.13		-		-
Beef	Beef cows including associated livestock	1.25		-		-
	Backgrounder	0.5		-		-
	Summer pasture / replacement heifers	0.625		-		-
	Feeder cattle	0.769		-		-
Pigs	Sows - farrow to finish (234-254 lbs)	1.25		-		-
	Sows - farrow to weanling (up to 11 lbs)	0.25		-		-
	Sows - farrow to nursery (51 lbs)	0.313		-		-
	Boars (artificial insemination units)	0.2		-		-
	Weanlings, Nursery (11-51 lbs)	0.033		-		-
	Growers / Finishers (51-249 lbs)	0.143		-		-
Chickens	Broilers	0.005		-		-
	Roasters	0.01		-		-
	Layers	0.0083		-		-
	Pullets	0.0033		-		-
	Broiler breeder pullets	0.0033		-		-
	Broiler breeder hens	0.01		-		-
Turkeys	Broilers	0.01		-		-
	Heavy Toms	0.02		-		-
	Heavy Hens	0.01		-		-
Horses	Mares	1.333		-		-
Sheep	Ewes	0.2		-		-
	Feeder lambs	0.063		-		-
Other Livestock	Type:			-		-
	Type:			-		-
			Total Current:	814	Total Proposed:	1,200

**Footnotes:**

<sup>1</sup> Enter the current number of animals on the farm based on the operation's capacity (animal places) or previous Conditional Use Approval.

<sup>2</sup> Enter the total number of animals associated with the operation post construction or expansion.

<sup>3</sup> There are 2 methods for calculating animal units for dairy (Farm Practices Guidelines for Dairy Producers in Manitoba, 1995). You can enter the total number of mature cows in the milking herd under the "Mature cows (lactating and dry) including associated livestock" category and the animal units will be calculated by multiplying this number by 2. This calculation assumes 85 lactating, 15 dry, 12 heifers (0 to 3 months), 36 heifers (4 to 13 months) and 50 heifers (> 13 months) for an operation with 100 mature cows. "Associated livestock" includes all of the heifer calves and replacement heifers. Alternatively, you can enter animal numbers in the individual categories (mature cows, heifers (0 to 3 months), heifers (4 to 13 months) and heifers (> 13 months)) and they will be summed at the bottom of the table. Bulls and veal calves are always calculated separately.

[For all other livestock or operation types please inquire with the Manitoba Agriculture Contacts](#)



# Water Requirement Calculation Table

Livestock	Number	IG/day per animal in winter	IG/day per animal in summer	IG/day (Imperial gallons per day)
<b>Beef/Dairy/Bison *</b>				
Feeder/heifer/steer (600 lb.)	600	5	9	5,400
Feeder (900 lb.)		7	12	-
Feeder (1250 lb.)		10	15	-
Cow/calf pair		12	15	-
Dry milking cow **		10	12	-
Lactating cow **		25	30	-
Bison		8	10	-
<b>Horses</b>				
Horses		8	11	-
<b>Hogs</b>				
Sow (Farrow/wean)			6.5	-
Dry Sow/Boar			4	-
Feeder			3	-
Nursery (33 lb.)			2	-
<b>Chickens</b>				
Broilers			0.035	-
Roasters/Pullets			0.04	-
Layers			0.055	-
Breeders			0.07	-
<b>Turkeys</b>				
Turkey Growers			0.13	-
Turkey Heavies			0.16	-
<b>Sheep/Goats</b>				
Sheep/Goats			2	-
Ewes/Does			3	-
Lambs/Kids (90 lb.)			1.6	-
<b>TOTAL (IG/day)</b>				<b>5,400</b>
*** TOTAL with 10% wash water				<b>5,940</b>

\* For beef, dairy, bison and horse enterprises:  
Use summer numbers if appropriate for the operation. Otherwise base projections on winter values.  
Always use the greater of the two values.

\*\* For intensive Dairy operations, please use the Dairy Barn Water Requirement Estimator found on separate sheet.

\*\*\* 10% of the total is added to allow for wash water

Enter this number on page 7 of Application Form.

**Other consumption:**  
Normal household consumption:  
60-75 IG/day per person or  
(272-340 l/day/person)

Unit Conversions		
Total per day	Total per year	Unit
5,940	2,168,100	IG
24,548	8,960,166	litres
0.025	9	cubic decametres (dam <sup>3</sup> )

Enter this number on page 7 of Application Form.

Conversion Factor: 1 IGPM = 4.546 l/m

## Dairy Barn Water Requirement Estimator\*

Enter the following farm data:

Number of lactating/milking cows	600
Average milk production (litres)	34 **
Parlor or tie stall (P/TS)	
Collection yard if free stall (Y/N)	
Plate cooler (Y/N)	Y
Milkings per day	
Plate cooler water reused? (Y/N)	Y

Total water needs estimate per day:	
Litres	101490
Imperial gallons	22355
Cubic decametres	0.10

Total water needs estimate per year:	
Litres	37043850
Imperial gallons	8159438
Cubic decametres	37.04

\*Calculations are based on Manitoba AVERAGES for  
 • Feed composition

## Well Logs

LOCATION: SW19-5-5E

Well\_PID: 81021  
Owner: F REUTTER  
Driller: Echo Drilling Ltd.  
Well Name:  
Well Use: PRODUCTION  
Water Use: Livestock  
UTMX: 651534.387  
UTMY: 5474356.32  
Accuracy XY: UNKNOWN  
UTMZ:  
Accuracy Z:  
Date Completed: 1995 Jul 05

### WELL LOG

From (ft.)	To (ft.)	Log
0	5.0	BROWN TILL
5.0	30.0	SAND AND GRAVEL
30.0	50.0	SANDY GREY TILL
50.0	83.9	GREY TILL
83.9	89.9	STICKY DARK BROWN TILL
89.9	148.9	GREY BLUE TILL
148.9	158.9	DARK BROWN TILL
158.9	169.9	RED SHALE AND GYPSUM
169.9	357.8	LIMESTONE

### WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	183.9	casing	5.00			INSERT	PVC
183.9	229.8	open hole	4.50				
229.8	357.8	open hole	4.00				
0	173.9	casing grout					casing

Top of Casing: 2.0 ft. below ground

### PUMPING TEST

Date:  
Pumping Rate: 30.0 Imp. gallons/minute  
Water level before pumping: 15.0 ft. below ground  
Pumping level at end of test: 20.0 ft. below ground  
Test duration: hours, minutes  
Water temperature: ?? degrees F

---



LOCATION: NW19-5-5E

Well\_PID: 147396  
Owner: THOMAS REUTTER  
Driller: Echo Drilling Ltd.  
Well Name:  
Well Use: PRODUCTION  
Water Use: Domestic  
UTMX: 651195  
UTMY: 5474886  
Accuracy XY: 1 EXACT [<5M] [GPS]  
UTMZ: 251  
Accuracy Z: 4 FAIR - Shuttle at Centroid  
Date Completed: 2008 Sep 25

WELL LOG

From (ft.)	To (ft.)	Log
0	17.0	BROWN TILL
17.0	57.0	GREY TILL
57.0	71.0	SAND
71.0	110.0	GREY TILL
110.0	218.0	SHALE & GYPSUM
218.0	228.0	GREY TILL
228.0	340.0	LIMESTONE

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	249.0	CASING	5.00			INSERT	PVC
249.0	340.0	OPEN HOLE	4.75				
10.0	80.0	CASING GROUT					

BENTONITE

Top of Casing: 2.0 ft. above ground

PUMPING TEST

Date: 2008 Sep 25  
Rate: 17.005 Imp. gallons/minute  
Water level before pumping: 20.0 ft. below ground  
Pumping level at end of test: 21.0 ft. below ground  
Test duration: ??? hours, ?? minutes  
Water temperature: ?? degrees F

REMARKS

BOX 508, GRUNTHAL MB

---

LOCATION: SW19-5-5E

Well\_PID: 17364  
Owner: P P KLASSEN  
Driller: Friesen Drillers Ltd.  
Well Name:  
Well Use: PRODUCTION  
Water Use: Domestic  
UTMX: 651534.387  
UTMY: 5474356.32  
Accuracy XY: UNKNOWN  
UTMZ:  
Accuracy Z:  
Date Completed: 1972 Apr 18

WELL LOG

From (ft.)	To (ft.)	Log
0	12.0	HARDPAN
12.0	27.0	SAND AND GRAVEL
27.0	149.9	SANDY BLUE CLAY
149.9	164.9	GYPSUM AND RED SHALE
164.9	379.8	LIMESTONE
379.8	383.7	RED SHALE
383.7	404.7	SILICA SAND

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	182.9	casing		4.50		INSERT	BLACK
182.9	404.7	open hole	3.80				

Top of Casing: 0.5 ft. below ground

PUMPING TEST

Date: 1972 Apr 18  
Pumping Rate: 20.0 Imp. gallons/minute  
Water level before pumping: 15.0 ft. below ground  
Pumping level at end of test: 16.0 ft. below ground  
Test duration: 12 hours, minutes  
Water temperature: ?? degrees F

REMARKS

GROUND LEVEL ELEV EST 840 FT

---

LOCATION: NE19-5-5E

Well\_PID: 105024  
Owner: KEN WIENS  
Driller: Echo Drilling Ltd.  
Well Name:  
Well Use: PRODUCTION  
Water Use: Domestic,Livestock  
UTMX: 652310.684  
UTMY: 5475193.77  
Accuracy XY:  
UTMZ:  
Accuracy Z:  
Date Completed: 1997 Nov 24

WELL LOG

From (ft.)	To (ft.)	Log
0	15.0	CLAY
15.0	65.0	TILL
65.0	95.0	SAND

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia. (in)	Outside Dia. (in)	Slot Size (in)	Type	Material
0	76.0	CASING	5.00			INSERT	PVC
76.0	86.0	PERFORATIONS			0.015	WIRE WOUND	S. S.
70.0	95.0	GRAVEL PACK					
0	70.0	CASING GROUT					

BENTONITE

Top of Casing: 2.0 ft. above ground

PUMPING TEST

Date: 1997 Nov 24  
Pumping Rate: 100.0 Imp. gallons/minute  
Water level before pumping: ft. below ground  
Pumping level at end of test: 70.0 ft. below ground  
Test duration: ??? hours, ?? minutes  
Water temperature: ?? degrees F

---

LOCATION: NE19-5-5E

Well\_PID: 19493  
Owner: M F N WIENS  
Driller: Friesen Drillers Ltd.  
Well Name:  
Well Use: PRODUCTION  
Water Use: Domestic, Livestock  
UTMX: 652310.684  
UTMY: 5475193.77  
Accuracy XY: UNKNOWN  
UTMZ:  
Accuracy Z:  
Date Completed: 1973 Sep 18

WELL LOG

From (ft.)	To (ft.)	Log
0	5.0	SAND
5.0	12.0	HARDPAN
12.0	30.0	SAND-FINE
30.0	77.9	SAND-LAYERS OF CLAY
77.9	147.9	HARDPAN LAYERS OF SAND
147.9	159.9	RED CLAY
159.9	219.9	LIMESTONE

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia. (in)	Outside Dia. (in)	Slot Size (in)	Type	Material
0	162.9	casing	4.00			INSERT	BLACK
IRON	162.9	219.9 open hole		4.00			

Top of Casing: ft. below ground

PUMPING TEST

Date:  
Pumping Rate: 12.0 Imp. gallons/minute  
Water level before pumping: 3.0 ft. below ground  
Pumping level at end of test: 22.0 ft. below ground  
Test duration: 2 hours, minutes  
Water temperature: ?? degrees F

---

LOCATION: NE19-5-5E

Well\_PID: 10360  
Owner: J FRIESEN  
Driller: MANKEY, EMIL  
Well Name:  
Well Use: PRODUCTION  
Water Use: Domestic  
UTMX: 652310.684  
UTMY: 5475193.77  
Accuracy XY: UNKNOWN  
UTMZ:  
Accuracy Z:  
Date Completed: 1967 Dec 09

WELL LOG

From (ft.)	To (ft.)	Log
0	20.0	GREY CLAY AND STONES
20.0	40.0	QUICKSAND
40.0	55.0	SAND AND GRAVEL, WATER AT 55 FEET

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia. (in)	Outside Dia. (in)	Slot Size (in)	Type	Material
0	55.0	casing	4.00				

Top of Casing: ft. below ground

PUMPING TEST

Date: 1967 Dec 09  
Pumping Rate: 9.0 Imp. gallons/minute  
Water level before pumping: 3.0 ft. below ground  
Pumping level at end of test: 16.0 ft. below ground  
Test duration: 48 hours, minutes  
Water temperature: ?? degrees F

REMARKS

320 FT E + 320 FT S OF SEC LINE, GROUND LEVEL ELEV EST 825 FT

---

Animal Type (A)	Animal Sub-type (B)	References (C)	Daily Manure Production			Production Period <sup>2</sup> (Days) (G)	Number of Animals <sup>3</sup> (Capacity) (H)	Total Manure Volume (ft <sup>3</sup> ) (F x G x H)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
			Manure Type (D)	Default Manure Production (ft <sup>3</sup> /animal/day) (E)	Operation Manure Production <sup>1</sup> (ft <sup>3</sup> /animal/day) (F)				
Dairy (milking cows <sup>4</sup> and associated livestock)	Free Stall		Semi-Solid <sup>5</sup>	3.5				0.0	
			Solid	3.4					
		Table 6, pg 59, FPGs for Dairy 1995	Liquid <sup>5</sup>	3.5	4.14	365	600	906,660.00	5,648,491.8
			Semi-Solid <sup>5</sup>	3.6					0.0
			Solid	3.6					
			Liquid <sup>5</sup>	3.0					0.0
Beef	Loose Housing		Solid	0.5					
	Milking Parlour Manure and Washwater		Liquid	1.2					
	Beef cows including associated livestock		Solid	1.2					
	Backgrounder (200 day)		Solid	0.73					
	Summer pasture / replacement heifers	pg 117, FPGs for Hogs 1998	Solid	0.85					
	Feeder cattle		Solid	1.1	1.1	365.00	330	132,495.00	
Pigs	Sows - farrow to finish (234 - 254 lbs)		Liquid	2.3					
	Sows - farrow to wean (up to 11 lbs)		Liquid	0.8				0.0	
	Sows - farrow to nursery (51 lbs)		Liquid	1				0.0	
	Weanlings: Nursery (11 - 51 lbs)	MAFRI website, FPGs for Pigs 2007	Liquid	0.1				0.0	
	Grower / Finisher (51 - 249 lbs)		Liquid	0.25				0.0	
									0.0
Animal Type	Type of Operation		Yearly Manure Production			Production Period <sup>2</sup> (Days)	Number of Birds <sup>3</sup> (Capacity)	Total Manure Volume (ft <sup>3</sup> ) (F/365xGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)
			Default Manure Production (ft <sup>3</sup> /year/bird space)	Operation Manure Production <sup>1</sup> (ft <sup>3</sup> /year/bird space)					
Chickens	Broilers - floor <sup>6</sup>			1.23					
	Broiler breeder hens <sup>7</sup>			2.3					
	Broiler breeder pullets <sup>6</sup>			0.99					
	Roasters - floor <sup>6</sup>			1.16					
	Layers - cage <sup>8</sup>	Table 3, pg 85, FPGs for Poultry 2000		2.33					
	Layers - floor <sup>7</sup>			1.68				0.0	
Turkeys	Layers - solid pack <sup>9</sup>								
	Pullets - cage <sup>8</sup>			0.71					
	Pullets - floor <sup>6</sup>			0.75				0.0	
	Pullets - solid pack <sup>9</sup>								
	Broilers <sup>6</sup>	Table 3, pg 85, FPGs for Poultry 2000		2.83					
	Heavy toms <sup>6</sup>			5.58					
	Heavy hens <sup>6</sup>		3.32						

Sizing of a manure storage facility in accordance with all requirements of the *Livestock Manure and Mortalities Management Regulation* (M.R. 42/98) is the responsibility of the operator.

**Instructions and footnotes:**

- ENTER the manure production estimate for your operation. If no estimate is available, use the default value provided in column E. References for default daily and yearly manure production are provided in column C.
- ENTER the number of days worth of manure that will be produced. For earthen manure storage facilities the minimum storage requirement is 400 days. For steel and concrete manure storage facilities the minimum storage requirement is 270 days.
- ENTER the total number of animals or birds that the operation can hold (e.g. barn or feedlot capacity).
- Milking cows includes all lactating and dry cows.
- Default manure production estimates for semi-solid and liquid dairy manure include manure and washwater from the milking parlour.
- 2 inches of wood shavings or 4 inches of straw placed on floor. Manure and litter removed from barn at 25% moisture content, with a density of 20 lb/ft<sup>3</sup>.
- One-third litter floor, two-thirds slatted floor. Manure and litter removed from barn at 40% moisture content, with a density of 25 lb/ft<sup>3</sup>.
- Manure removed from barn at 90% moisture content with a density of 59 lb/ft<sup>3</sup>.
- Poultry operations using litter (solid pack) must provide an estimate of yearly manure production

**Manure production values for replacement livestock based on current industry rate is 2.76 ft<sup>3</sup>/animal/day. Therefore, the annual manure production from 270 animals is 271,998 ft<sup>3</sup>.**

CELL	Existing Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	ft	ft	ft	ft			
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Circular Tank		Diameter	Height	Depth			
		131 ft	12 ft	11 ft			172

Permit/Registration # \_\_\_\_\_ LM-0220 \_\_\_\_\_



## Existing and Proposed Manure Storage Facility Dimension Table

If applicable, indicate the dimensions of any existing manure storage facility (MSF) that will be used to store manure from the proposed project:

CELL	Existing Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	ft	ft	ft	ft			
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Circular Tank	Diameter	Height	Depth				
	131 ft	19 ft	18 ft				282

Permit/Registration # \_\_\_\_\_ LM-0964 \_\_\_\_\_





If available, indicate the dimensions of any proposed manure storage facility (MSF) that will be used to store manure from the proposed project:

CELL	Proposed Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	320 ft	400 ft	12 ft	6.6 ft	4:1	5:1	402
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Circular Tank		Diameter	Height	Depth			
		ft	ft	ft			

The construction, modification or expansion of any manure storage structure requires a permit from Manitoba Sustainable Development as per the *Livestock Manure and Mortalities Management Regulation (M.R. 42/98)*.



Client: Reutter Dairy  
 Location: SW 19-5-5E  
 Date: 18-Sep-18

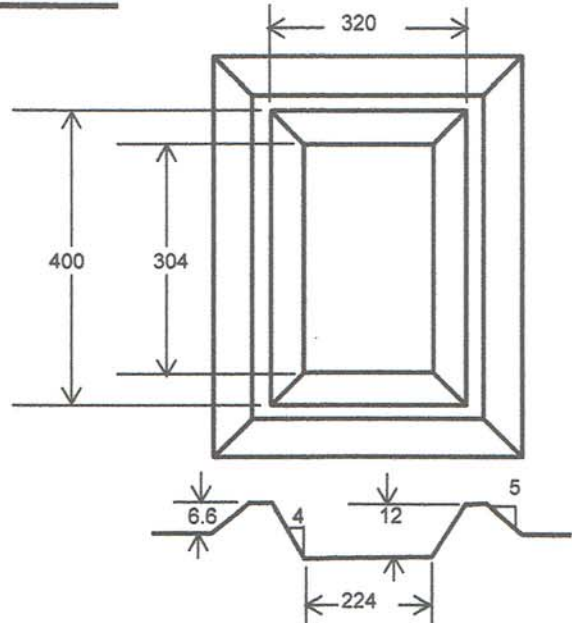
**Manure Storage Volume Calculation**

Manure storage	Animal number	Daily prod'n ft <sup>3</sup> /hd/d	Total daily manure production (ft <sup>3</sup> /d)	Storage capacity (ft <sup>3</sup> )	Days storage
Proposed EMS	572	4.14	2,368	952,107	402
Existing Tanks	28	4.14			
	270	2.76	861	390,868	454

**Earthen Manure Storage Worksheet - Balanced Cut/Fill In-Situ Single Cell**

**Cell #1**

Length, ft	400
Width, ft	320
Depth, ft	12
Cut Depth	5.4
Freeboard, ft	1.67
Fill Height	6.6
Interior Slope	4
Exterior Slope	5
Berm Width	10
Common Berm Width	0
Bottom Width	224
Bottom Length	304
Top Area	128000
Bottom Area	68096
Design Surface Area	118559
Total Volume	1157828
Design Volume	952107
Cut Area	92772
Cut Volume	432630
Fill Shrinkage, %	25
Fill Volume	435450



Lagoon foot Print  
 Width 406  
 Length 486

	cu ft	cu yds	Steel/Concrete Tank Design Volume	
			Tank-1	Tank-2
<b>Total Cut Volume</b>	432630	16023	Diameter, ft	131
<b>Total Fill Volume</b>	435450	16128	Depth, ft	12
<b>Total Volume</b>	1157828		Freeboard, ft	1
<b>EMS Design Volume</b>	952107		Tank Volume, ft <sup>3</sup>	161,739
			Design Volume, ft <sup>3</sup>	256,086
				148,260
				242,608

MANURE APPLICATION FIELD CHARACTERISTICS TABLE



Field	A Legal Description	B Rural Municipality	C O/C/L/A	D Total Acreage	E Setbacks, including features	F Net Acreage for Manure Application	G Agriculture Capability Class and Subclass	H Soil Phosphorus (ppm Olsen P) 0-6 inches	I Development Plan Designation	J Zoning
1	SE 28-5-4E	De Salaberry	O	40	3m, surface water, roadside ditch	38.5	2W; 3I-5IW	14	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
2	NE 28-5-4E	De Salaberry	O	60	3m, surface water, roadside ditch	56	2W; 3W; 3I-5IW	14	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
3	SW 26-5-4E	De Salaberry	O	117	3m, drain, roadside ditch	115	2W	13	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
4	W1/2 NW 23-5-4E	De Salaberry	O	40	3m, property line, roadside ditch	37	2W	44	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
5	W1/2 NW 14-5-4E	De Salaberry	O	80	3m, roadside ditch	79	2W; 3N; 3P-5P	25	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
6	W1/2 SE 15-5-4E	De Salaberry	O	80	None	80	2W; 3W	9	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
7	SW 15-5-4E	De Salaberry	O	157	3m, roadside ditch, LO	155	2W; 3W; 1	32	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
8	S1/2 SW 23-5-4E	De Salaberry	O	50	None	50	2W; 3N	26	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
9	SL 46/48 or NW&SW 2-6-4E	De Salaberry	O	159	3m, private ditch	157.5	2W; 3N; 2W-3NW; 5W-3N	40	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
10	NE 29-5-4E	De Salaberry	O	160	3m, property line	158	2W; 3W; 1	6	BY LAW NO. 2194-04: A-1	BY-LAW NO. 2208-05: A-1
11	SE 29-5-4E	De Salaberry	O	160	3m, property line	158	2W; 3W; 1	8	BY LAW NO. 2194-04: A-2	BY-LAW NO. 2208-05: A-2
12	NW 28-5-4E	De Salaberry	A	94	3m, property line	93	2W; 3W	16	BY LAW NO. 2194-04: A-2	BY-LAW NO. 2208-05: A-2
13	SW 28-5-4E	De Salaberry	A	125	3m, property line, drain	123	2W; 3W	11	BY LAW NO. 2194-04: A-2	BY-LAW NO. 2208-05: A-2
14	NE 31-5-4E	De Salaberry	A	160	3m, property line	158	2W; 3W	18	BY LAW NO. 2194-04: A-2	BY-LAW NO. 2208-05: A-2
15	NW 5-6-4E	De Salaberry	A	160	3m, property line	158	2W; 3W	14	BY LAW NO. 2194-04: A-2	BY-LAW NO. 2208-05: A-2
16	NW 19-5-5E	Hanover	O	140	3m, property line	138	2W; 3W	39	BY LAW No. 2170: R	BY-LAW NO. 2208-05: A-2
17	NW & SW 20-5-5E	Hanover	O	65	3m, property line	64	2W; 3W	48	BY LAW No. 2170: R	BY-LAW NO. 2171: R
18										
19										
20										
<b>Total Net Acreage for Manure Application:</b>						<b>1,818</b>				

- A. \_\_\_\_\_ Enter the legal description for each parcel of land that will receive manure; Sec, Twp, Rge or River Lot (including parish).
- B. \_\_\_\_\_ Identify the Rural Municipality in which the parcel is located.
- C. \_\_\_\_\_ Indicate how the land has been secured for manure application: O – Own / C-Crown / L – Lease / A – Agreement. Multiple designations may be used as appropriate (ex. C/A for Crown lands that are under a spread agreement with the producer that holds the agricultural Crown land lease).
- D. \_\_\_\_\_ Enter the total acreage for the parcel.
- E. \_\_\_\_\_ Enter setbacks from surface water or groundwater features that reduce the land available for manure application; include identification of type of feature (ex. 8m, Order 3 drain).
- F. \_\_\_\_\_ Enter the net acreage available for manure application for the parcel after taking into account setbacks and excluding Class 6, 7 and unimproved organic soils.
- G. \_\_\_\_\_ Enter the agriculture capability class and subclass ratings for the acreage available for manure application.
- H. \_\_\_\_\_ Provide soil test results for phosphorus in ppm Olsen P for soil samples taken at the 0-6 inch depth. Soil test results must be no more than 12 months old and must be completed by an accredited soil-testing laboratory.
- I. \_\_\_\_\_ Indicate the Development Plan and its by-law number in addition to the map designation for each field (ex. By-law #1/2008: AG).
- J. \_\_\_\_\_ Indicate the Zoning By-law and its by-law number in addition to the zoning for each field (ex. By-law 12/2009: AG 80).

**CROP ROTATION TABLE**

A Expected Crops in the Rotation	B Acreage	C Historical Yield	D Units	E Source of Yield Information
Alfalfa	707	3.822	ton/ac	MASC-Fertilizer Data Browser
Corn Grain	202	117.2	bu/ac	MASC-Fertilizer Data Browser
Corn Silage	707	4.458	tons/ac	MASC-Fertilizer Data Browser
Oats	202	117.4	bu/ac	MASC-Fertilizer Data Browser
<b>Total Net Acreage for Manure Application</b>	<b>1,818</b>			

- A. List all of the crop(s) to be grown in the rotation on the acreage that will receive manure.
- B. Indicate the average acreage for each crop over the rotation. For example, if there are 720 suitable acres available for manure and approximately 40 these acres will be used to grow canola, enter 288.
- C. The total of column B should add up to Total Net Acreage for Manure Application provided in the Manure Application Field Characteristic Table. Enter the historical yield average for each crop. Long-term yield averages can be determined using MASC data (<http://www.masc.mb.ca/masc.nsf/index.html?OpenPage>) or on-farm yield records. If on-farm yield records are used, please provide copies.
- D. Enter the units for the yields provided (e.g. bu/acre, tons/acre).
- E. Enter the source of the historical yield average provided.

<b>Nutrients Excreted</b>	<b>lbs</b>
Nitrogen	201163
P2O5	83026
<b>Crop Nutrient Use</b>	<b>lb/ac</b>
Crop N Uptake	174.2
Crop P2O5 Removal	51.7
Operation P2O5 Credit	97.6
<b>Land Available</b>	<b>1818</b>
<b>Land Base Requirements</b>	<b>acres</b>
Acres for Nitrogen Uptake	1155
Acres for Phosphorus Removal	851
<b>Phosphorus Balance</b>	<b>acres</b>
Acres for Phosphorus Balance	1607

Last revised Dec 18, 2017

Species	Animal Category/Operation type	N (lb/year)	P205 (lb/year)
<b>Pigs</b>	Gestating Sow	0	0
	Nursing Sow	0	0
	Nursing Litter	0	0
	Live Cull Sows	0	0
	Bred Gilts	0	0
	Gilts	0	0
	Boars	0	0
	Weanlings	0	0
	Growers/finishers	0	0
	Sows, farrow to 5 kg	0	0
	Sows, farrow to 23 kg	0	0
	Sows, farrow to finish	0	0
	<b>Beef</b>	Mature Cows (>2 years old)	0
Bred Heifer (14 mo - 2 years)		0	0
Replacement Heifers (7 mo-14 mo)		0	0
Unweaned Calves (0-7 mo)		0	0
Bulls		0	0
Mature Cows and Bred Heifers, plus associated livestock		0	0
Feedlot Cattle - long keep		0	0
Feedlot Cattle - short keep		0	0
Backgrounders - pasture		0	0
Backgrounders - confined		0	0
<b>Dairy</b>	Lactating cow	0	0
	Dry cow	0	0
	Calf, 0-3 months	0	0
	Calf, 4-13 months	0	0
	Replacements, >13 months	0	0
	Mature Cows, plus assoc livestock	201163	83026
<b>Sheep</b>	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
<b>Chickens</b>	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
<b>Layers</b>	Layer Pullets	0	0
	Layer Hens	0	0
	Breeder Pullets	0	0
	Breeder Hens	0	0
<b>Turkeys</b>	Broiler Hens (0-9 wks)	0	0
	Hens (0-11 wks)	0	0
	Heavy Hens (0-14 wks)	0	0
	Light Toms (0-12 wks)	0	0
	Toms (0-13 wks)	0	0
	Heavy Toms (0-15 wks)	0	0
	Breeding Hen Growers (0-30 wks)	0	0
	Breeding Hens (30-60 wks)	0	0
	Breeding Tom Grower (0-18 wks)	0	0
	Breeding Tom Grower (0-30 wks)	0	0
	Breeding Tom (30-60 wks)	0	0
<b>Total</b>		<b>201163</b>	<b>83026</b>

**Note:** Be sure all livestock species on your farm are represented in this table, not just the livestock in the proposed expansion.

Crop	Removal		Uptake		Yield	Units	Acreage	Removal		Uptake		
	P205 (lb)	N (lb)	N	Units				P205 (lb)	N (lb)	N	Units	
Alfalfa	13.8	58	58	lb/ton	3.822	ton/ac	707	37290	156725	156725	156725	
Barley Grain	0.42	0.97	1.39	lb/bu		bu/ac		-	-	-	-	
Barley Silage	11.8	34.4	34.4	lb/ton		ton/ac		-	-	-	-	
Canola	1.04	1.93	3.19	lb/bu		bu/ac		-	-	-	-	
Corn Grain	0.44	0.97	1.53	lb/bu	117.2	bu/ac	202	10417	22964	36222	36222	
Corn Silage	12.7	31.2	31.2	lb/ton	4.458	tons/ac	707	40028	98336	98336	98336	
Dry Edible Beans	1.39	4.17		lb/cwt		cwt/ac		-	-	-	-	
Fababeans	1.79	5.02	8.4	lb/cwt		cwt/ac		-	-	-	-	
Flax	0.65	2.13	2.88	lb/bu		bu/ac		-	-	-	-	
Grass Hay	10	34.2	34.2	lb/ton		tons/ac		-	-	-	-	
Lentils	1.03	3.39	5.08	lb/cwt		cwt/ac		-	-	-	-	
Oats	0.26	0.62	1.07	lb/bu	117.4	bu/ac	202	6166	14703	25375	25375	
Pasture (grazed)	10	34.2	34.2	lb/ton	0.5	ton/ac		-	-	-	-	
Peas	0.69	2.34	3.06	lb/bu		bu/ac		-	-	-	-	
Potatoes	0.09	0.32	0.57	lb/cwt		cwt/ac		-	-	-	-	
Rye	0.45	1.06	1.67	lb/bu		bu/ac		-	-	-	-	
Soybeans	0.84	3.87	5.2	lb/bu		bu/ac		-	-	-	-	
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-	-	
Wheat - Spring	0.59	1.5	2.11	lb/bu		bu/ac		-	-	-	-	
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-	-	
<b>Total Acres</b>							1818	93900	292729	316658	316658	
<b>Estimated Average Removal/Uptake (lb/ac)</b>												
<b>Acres in Hanover and La Broquerie</b>							202	51.7	161.0	174.2	174.2	174.2
<b>Proportion in Hanover or La Broquerie</b>							11%					
<b>Additional Acres</b>												
<b>Crop Planned on Additional Acres</b>												
<b>Total Acreage</b>							1818					

**\*Notes:** Enter the number of acres that are in the RM's of Hanover or La Broquerie in cell H26. Additional acres include acres for which crop removal or soil data is limited or unavailable.

Type	Storage Type	Volatilization	Animal Numbers	Weight In (lb)	Weight Out (lb)	Average Animal Wt (lb)	Days on Feed per Cycle (days)	Number of Cycles per Year	N Excreted Per Herd Adjusted for Storage N Loss (lb/yr/herd)	P2O5 Excreted per Herd Per Year (lb/yr/herd)
Lactating Cows	Liquid Uncovered Earthen	30%		1400	1440	1420	365	1	0	0
Dry Cows	Liquid Uncovered Earthen	30%		1440	1440	1440	365	1	0	0
Calves, 0-3 months	Liquid Uncovered Earthen	30%		90	275	183	365	1	0	0
Calves, 4-13 months	Liquid Uncovered Earthen	30%		275	810	543	365	1	0	0
Replacements, >13 months	Liquid Uncovered Earthen	30%		810	1250	1030	365	1	0	0
Mature Cows, plus associated livestock	Liquid Uncovered Steel/Concrete	10%	600	n/a	n/a	n/a	n/a	n/a	201163	83026

Last revised August 20, 2014



Manure Spreading Agreement

This Agreement dated the 12 day of June, 2018.

BETWEEN:

Reutter Dairy

And

(hereinafter called "Land Owner")

This agreement shall permit Reutter Dairy to apply manure produced by their livestock operation located on SW 19-5-5E on lands as described below which are currently under control of the Land Owner.

Legal Description:	NW 28-05-04 E	110
	SW 28-05-04 E	100
	NE 31-05-04 E	160
	NW 05-06-04 E	100

This agreement shall be for a period of 20 years from the date of the agreement and are subject to the following conditions:

I. (Land Owner to identify additional conditions if required.)

Don't apply when land is wet

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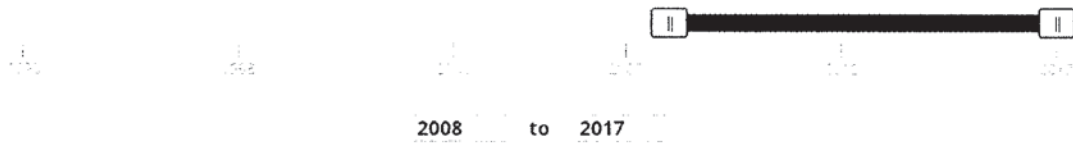
In Witness Whereof the parties have executed this Agreement as of the date written above.

Reutter Dairy  
For 

Land Owner  
Per: 



## Select Year Range



## Search Summary

**112 records returned**

735 farm varieties grown on **134,128.0** acres

### Average Yield

**2.976** Tonnes ( **117.2** Bushels ) per acre

### Average Fertilizer Application

Nitrogen: **120.4** lbs per acre

Phosphorus: **24.7** lbs per acre

Potassium: **9.1** lbs per acre

Sulphur: **1.9** lbs per acre

Showing 1 to 50 of 112 entries

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial) ▼	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2013	HANOVER	GRAIN CORN	H	9	1,960.0	162.1 Bushels	118.4	12.1	19.6	4.7
2013	HANOVER	GRAIN CORN	E	12	2,321.0	154.7 Bushels	132.6	23.7	5.0	1.3
2016	HANOVER	GRAIN CORN	C	18	3,535.0	154.7 Bushels	102.8	29.7	8.0	1.4
2013	HANOVER	GRAIN CORN	D	19	3,176.0	153.9 Bushels	124.1	18.0	5.7	1.0
2016	HANOVER	GRAIN CORN	D	20	3,457.0	151.4 Bushels	110.1	24.9	8.5	0.4
2015	HANOVER	GRAIN CORN	C	8	1,999.0	151.0 Bushels	138.2	34.9	4.7	3.5
2017	HANOVER	GRAIN CORN	C	10	1,651.0	150.8 Bushels	122.4	35.8	7.2	0.9
2013	DESALABERRY	GRAIN CORN	D	7	1,445.0	150.7 Bushels	131.0	28.4	2.2	6.3
2013	HANOVER	GRAIN CORN	I	4	630.0	149.9 Bushels	107.0	0.0	0.0	0.0
2016	DESALABERRY	GRAIN CORN	D	8	1,314.0	147.7 Bushels	121.5	35.6	4.9	6.6
2014	HANOVER	GRAIN CORN	C	10	1,938.0	146.1 Bushels	108.7	28.3	4.5	0.8
2016	HANOVER	GRAIN CORN	E	16	2,359.0	146.1 Bushels	114.6	21.5	12.2	0.7
2016	DESALABERRY	GRAIN CORN	C	7	808.0	146.0 Bushels	148.8	36.5	2.5	0.0
2016	HANOVER	GRAIN CORN	H	9	1,540.0	145.4 Bushels	132.8	15.3	24.1	9.2

## Select Year Range



2008 to 2017

## Search Summary

**65 records returned**

84 farm varieties grown on **6,961.0** acres

### Average Yield

**11.558** Tonnes ( **12.737** Tons ) per acre

### Average Fertilizer Application

Nitrogen: **104.0** lbs per acre

Phosphorus: **24.3** lbs per acre

Potassium: **14.2** lbs per acre

Sulphur: **2.0** lbs per acre

Showing 1 to 50 of 65 entries

Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial) ▼	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)	Sulphur (lbs)
2008	DESALABERRY	SILAGE CORN	C	Below	Minimum					
2008	DESALABERRY	SILAGE CORN	D	Below	Minimum					
2008	DESALABERRY	SILAGE CORN	H	Below	Minimum					
2008	HANOVER	SILAGE CORN	D	Below	Minimum					
2008	HANOVER	SILAGE CORN	E	Below	Minimum					
2008	HANOVER	SILAGE CORN	F	Below	Minimum					
2008	HANOVER	SILAGE CORN	I	Below	Minimum					
2009	DESALABERRY	SILAGE CORN	C	Below	Minimum					
2009	DESALABERRY	SILAGE CORN	E	Below	Minimum					
2009	DESALABERRY	SILAGE CORN	F	Below	Minimum					
2009	HANOVER	SILAGE CORN	D	Below	Minimum					
2009	HANOVER	SILAGE CORN	E	Below	Minimum					
2009	HANOVER	SILAGE CORN	F	Below	Minimum					

## Select Year Range



## Search Summary

98 records returned

561 farm varieties grown on 81,025.0 acres

### Average Yield

1.811 Tonnes ( 117.4 Bushels ) per acre

### Average Fertilizer Application

Nitrogen: 87.8 lbs per acre

Phosphorus: 29.4 lbs per acre

Potassium: 4.1 lbs per acre

Sulphur: 2.2 lbs per acre

Showing 1 to 50 of 98 entries

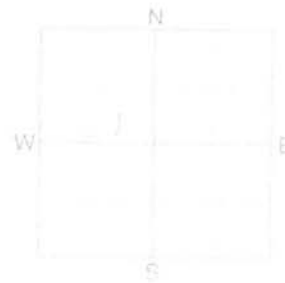
Year	Risk Area / R.M.	Crop	Soil	Farms	Acres	Yield/acre (Imperial) ▼	Nitrogen (lbs)	Phosphorus (lbs)	First	Previous	Next	Last
									Potassium (lbs)	Sulphur (lbs)		
2017	DESALABERRY	OATS	E	16	3,893.0	166.8 Bushels	101.7	37.5	4.4		1.4	
2017	DESALABERRY	OATS	C	9	1,269.0	162.1 Bushels	104.7	36.0	1.8		1.5	
2017	DESALABERRY	OATS	D	14	2,002.0	158.3 Bushels	110.4	36.4	3.8		0.7	
2013	DESALABERRY	OATS	E	7	1,265.0	152.1 Bushels	96.8	30.9	4.6		3.4	
2014	DESALABERRY	OATS	D	17	2,971.0	147.5 Bushels	97.0	35.3	2.2		3.2	
2013	DESALABERRY	OATS	C	5	534.0	142.5 Bushels	97.2	36.3	0.0		1.2	
2013	DESALABERRY	OATS	D	9	1,812.0	141.1 Bushels	99.8	35.3	3.1		1.5	
2014	DESALABERRY	OATS	E	11	2,041.0	139.6 Bushels	104.0	35.3	5.8		2.3	
2014	DESALABERRY	OATS	C	11	1,099.0	139.2 Bushels	89.2	31.5	0.6		1.6	
2015	DESALABERRY	OATS	D	12	2,009.0	136.4 Bushels	114.7	35.2	2.7		2.9	
2010	DESALABERRY	OATS	D	11	1,487.0	134.5 Bushels	89.7	33.4	0.4		0.0	
2016	DESALABERRY	OATS	D	11	2,044.0	134.3 Bushels	100.0	39.1	0.1		2.8	
2008	DESALABERRY	OATS	D	21	3,965.0	132.6 Bushels	81.5	28.7	4.2		0.5	



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 *L 205*  
 COUNTY  
 TWP **5-4E** RANGE  
 SECTION **28** QTR **RL E** ACRES **103**  
 PREV. CROP **Oats**



SUBMITTED FOR:  
**THOMAS REUTER**

BOX **1180**  
 GRUNTHAL, MB

ROA **ORD**

SUBMITTED BY: **PR2421**

**PRAIRIE SKY AVIATION**  
 2 MI SOUTH ON 59  
 BOX 309  
 NIVERVILLE, MB

ROA **1E0**

REF # **17341708** BOX # **0**  
 LAB # **NW97187**

Date Sampled **09/29/2017**

Date Received **10/04/2017**

Date Reported **10/6/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
				Corn-Grain	Oats	Alfalfa				
			YIELD GOAL	YIELD GOAL	YIELD GOAL					
			150 BU	120 BU	4 Tons					
			SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES					
			Band	Band	Band					
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Nitrate	0-6" 28 lb/ac 6-24" 21 lb/ac	*****	N 131		N 71		N 0			
Phosphorus	Olsen 14 ppm	*****	P <sub>2</sub> O <sub>5</sub> 29	Band *	P <sub>2</sub> O <sub>5</sub> 19	Band *	P <sub>2</sub> O <sub>5</sub> 24	Band *		
Potassium	402 ppm	*****	K <sub>2</sub> O 10	Band (2x2) *	K <sub>2</sub> O 10	Band (Starter) *	K <sub>2</sub> O 15	Band (Starter) *		
Chloride	0-6" 42 lb/ac 6-24" 96 lb/ac	*****	Cl		Cl		Cl			
Sulfur		*****	S 0		S 0		S 0			
Boron	1.4 ppm	*****	B 0		B 0		B 0			
Dist	1.00 ppm	*****	Zn 0		Zn 2	Band (Trial)	Zn 2	Band (Trial)		
Iron	23.0 ppm	*****	Fe 0		Fe 0		Fe 0			
Manganese	1.4 ppm	*****	Mn 0		Mn 0		Mn 0			
Copper	1.68 ppm	*****	Cu 0		Cu 0		Cu 0			
Magnesium	1831 ppm	*****	Mg 0		Mg 0		Mg 0			
Calcium	6434 ppm	*****	Lime		Lime		Lime			
Sodium	97 ppm	*****	Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
Org Matter	6.5 %	*****	0-6" 7.8		48.9 meq	% Ca	% Mg	% K	% Na	% H
Carbonate(CO2)	0-6" 0.82 mmho/cm 6-24" 0.72 mmho/cm	*****	6-24" 8.4			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
Sur. Salts		*****				65.6	31.2	2.1	0.9	

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

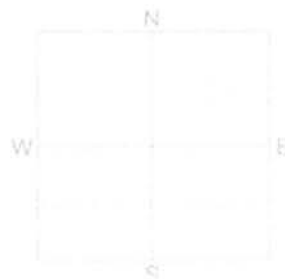
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 40 K2O = 200 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID: 23A  
 SAMPLE ID:  
 FIELD NAME: *Co. Helier*  
 COUNTY:  
 TWP: 5-4E RANGE:  
 SECTION: 26 QTR: SW ACRES: 115  
 PREV. CROP: Oats



SUBMITTED FOR:  
**THOMAS REUTTER**  
 BOX 1160  
 GRUNTHAL, MB ROA 0R0

SUBMITTED BY: PR2421  
**PRAIRIE SKY AVIATION**  
 2 MI SOUTH ON 59  
 BOX 309  
 NIVERVILLE, MB ROA 1E0

REF # 17341707 BOX # 0  
 LAB # NW97192

Date Sampled 09/29/2017

Date Received 10/04/2017

Date Reported 10/6/2017

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
				Wheat - Spring	Alfalfa	Oats				
0-6"	15 lb/ac		YIELD GOAL	YIELD GOAL	YIELD GOAL					
6-24"	33 lb/ac	*****	70 BU	4 Tons	120 BU					
0-24"	48 lb/ac		SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES					
Nitrate			Band	Band	Band					
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Olsen	13 ppm	*****	N 141		N 0		N 72			
Phosphorus			P <sub>2</sub> O <sub>5</sub> 29	Band *	P <sub>2</sub> O <sub>5</sub> 27	Band *	P <sub>2</sub> O <sub>5</sub> 21	Band *		
Potassium	173 ppm	*****	K <sub>2</sub> O 13	Band *	K <sub>2</sub> O 66	Band *	K <sub>2</sub> O 19	Band *		
Chloride			Cl		Cl		Cl			
0-6"	120 +lb/ac	*****	S 0		S 0		S 0			
6-24"	360 +lb/ac	*****	B 0		B 0		B 0			
Sulfur			Zn 3	Band (Trial)	Zn 3	Band (Trial)	Zn 3	Band (Trial)		
Boron	2.7 ppm	*****	Fe 0		Fe 0		Fe 0			
Zinc	0.60 ppm	*****	Mn 0		Mn 0		Mn 0			
Iron	13.5 ppm	*****	Cu 0		Cu 0		Cu 0			
Manganese	1.1 ppm	*****	Mg 0		Mg 0		Mg 0			
Copper	1.31 ppm	*****	Lime		Lime		Lime			
Magnesium	1697 ppm	*****								
Calcium	5953 ppm	*****								
Sodium	374 ppm	*****								
Org Matter	3.7 %	*****								
Carbonate(CCE)										
0-6"	1.04 mmho/cm	*****	Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
6-24"	3.92 mmho/cm	*****				% Ca	% Mg	% K	% Na	% H
Soil Salts			0-6" 8.3		46.0 meq	(65-75)	(15-20)	(1-7)	(0-3)	(0-5)
			6-24" 8.3			64.7	30.6	1.0	3.5	

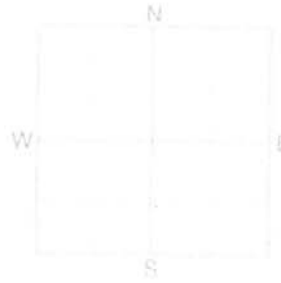
General Comments: Texture is not estimated on high pH soils.  
 Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 44 K2O = 26 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 40 K2O = 200 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **26**  
 SAMPLE ID  
 FIELD NAME **DUMP**  
 COUNTY  
 TWP **5-4E** RANGE  
 SECTION **14** QTR **NW** ACRES **80**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**THOMAS REUTER**

BOX 1160  
 GRUNTHAL, MB ROA 0R0

SUBMITTED BY: **PR2421**

**PRAIRIE SKY AVIATION**  
 2 MI SOUTH ON 59  
 BOX 309  
 NIVERVILLE, MB ROA 1E0

REF # **18804292** BOX # **0**  
 LAB # **NW146588**

Date Sampled **10/18/2017**

Date Received **10/20/2017**

Date Reported **10/24/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
0-6"	32 lb/ac		Corn-Grain		Oats		Alfalfa	
6-24"	27 lb/ac		YIELD GOAL		YIELD GOAL		YIELD GOAL	
			150 BU		120 BU		4 Tons	
0-24"	59 lb/ac		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
Nitrate			Band		Band		Band	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Olsen	25 ppm		N	121	N	61	N	0
Phosphorus			P <sub>2</sub> O <sub>5</sub>	15	P <sub>2</sub> O <sub>5</sub>	15	P <sub>2</sub> O <sub>5</sub>	15
Potassium	345 ppm			Band (2x2) *		Band (Starter) *		Band (Starter) *
Chloride			K <sub>2</sub> O	10	K <sub>2</sub> O	10	K <sub>2</sub> O	15
0-6"	114 lb/ac			Band (2x2) *		Band (Starter) *		Band (Starter) *
6-24"	360 lb/ac		Cl		Cl		Cl	
Sulfur			S	0	S	0	S	0
Boron	1.9 ppm		B	0	B	0	B	0
Zinc	2.73 ppm		Zn	0	Zn	0	Zn	0
Iron	19.9 ppm		Fe	0	Fe	0	Fe	0
Manganese	1.4 ppm		Mn	0	Mn	0	Mn	0
Copper	1.71 ppm		Cu	0	Cu	0	Cu	0
Magnesium	2484 ppm		Mg	0	Mg	0	Mg	0
Calcium	5320 ppm		Lime		Lime		Lime	
Sodium	223 ppm							
Sulfur	7.9 %							
Org Matter								
Carbonate(CCB)								
0-6"	1.16 mmho/cm		Soil pH	7.8	Buffer pH	8.2	Cation Exchange Capacity	49.2 meq
6-24"	1.47 mmho/cm						% Base Saturation (Typical Range)	
Soil Catio							% Ca	54.2
							% Mg	42.1
							% K	1.8
							% Na	2.0
							% H	

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 40 K2O = 200 AGVISE Band guidelines will build P & K test levels to the medium range over many years.







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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **27**  
 SAMPLE ID  
 FIELD NAME **Triplot**  
 COUNTY  
 TWP **5-4E** RANGE  
 SECTION **15** QTR **SE & W** ACRES **235**

PREV. CROP **Corn-Grain**

SUBMITTED FOR:  
**THOMAS REUTTER**

**BOX 1160**  
**GRUNTHAL, MB ROA 0R0**

SUBMITTED BY: **PR2421**

**PRAIRIE SKY AVIATION**  
**2 MI SOUTH ON 59**  
**BOX 309**  
**NIVERVILLE, MB ROA 1E0**

REF # **18791210** BOX # **0**  
 LAB # **NW27932**

Date Sampled **05/03/2017**

Date Received **05/05/2017**

Date Reported **5/9/2017**

YIELD GOAL		YIELD GOAL		YIELD GOAL		
SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
N		N		N		
P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		
K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O		
Cl		Cl		Cl		
S		S		S		
B		B		B		
Zn		Zn		Zn		
Fe		Fe		Fe		
Mn		Mn		Mn		
Cu		Cu		Cu		
Mg		Mg		Mg		
Lime		Lime		Lime		
Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)		
0-4" 7.4		48.7 meq		% Ca	% Mg	% K
6-24" 8.1				(65-75)	(15-20)	(1-7)
				(0-5)	(0-5)	(0-5)
				62.0	33.9	2.5
						1.6

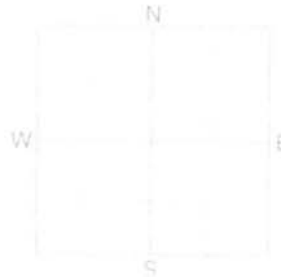
General Comments: Clays/Clay Loams (CEC range = 36+) (Fine)



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 Northwood: (701) 587-6010  
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### SOIL TEST REPORT

FIELD ID **31**  
 SAMPLE ID  
 FIELD NAME **Dump**  
 COUNTY  
 TWP **5-4E** RANGE  
 SECTION **23** QTR **SW** ACRES **50**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**THOMAS REUTER**

BOX **1160**  
 GRUNTHAL, MB ROA **ORO**

SUBMITTED BY: **PR2421**

**PRAIRIE SKY AVIATION**  
 2 MI SOUTH ON 59  
 BOX **309**  
 NIVERVILLE, MB ROA **1E0**

REF # **18804293** BOX # **0**  
 LAB # **NW146585**

Date Sampled **10/18/2017**

Date Received **10/20/2017**

Date Reported **10/24/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
0-6"	23 lb/ac			Corn-Grain	Oats	Alliga				
6-24"	27 lb/ac		YIELD GOAL	YIELD GOAL	YIELD GOAL					
0-24"	50 lb/ac		150 BU	120 BU	4 Tons					
Nitrate			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Band		Band		Band			
Olsen	26 ppm		LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus			N	130	N	70	N	0		
Potassium	335 ppm		P <sub>2</sub> O <sub>5</sub>	15 Band (2x2) *	P <sub>2</sub> O <sub>5</sub>	15 Band (Starter) *	P <sub>2</sub> O <sub>5</sub>	15 Band (Starter) *		
Chloride			K <sub>2</sub> O	10 Band (2x2) *	K <sub>2</sub> O	10 Band (Starter) *	K <sub>2</sub> O	15 Band (Starter) *		
0-6"	120 +lb/ac		Cl		Cl		Cl			
6-24"	360 +lb/ac		S	0	S	0	S	0		
Sulfur			B	0	B	0	B	0		
Boron	2.9 ppm		Zn	0	Zn	0	Zn	0		
Zinc	1.82 ppm		Fe	0	Fe	0	Fe	0		
Iron	17.1 ppm		Mn	0	Mn	0	Mn	0		
Manganese	1.4 ppm		Cu	0	Cu	0	Cu	0		
Copper	2.35 ppm		Mg	0	Mg	0	Mg	0		
Magnesium	2541 ppm		Lime		Lime		Lime			
Calcium	6173 ppm									
Sodium	357 ppm									
Org Matter	6.4 %									
Carbonate(CCB)										
0-6"	1.42 mmho/cm		Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
6-24"	2.67 mmho/cm		0-6"	8.0	54.5 meq	% Ca	% Mg	% K	% Na	% H
Soil Salts			6-24"	8.1		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the median range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 21 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

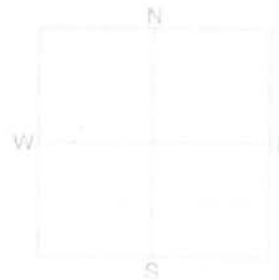
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 40 K2O = 200 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **90**  
 SAMPLE ID  
 FIELD NAME *Booke-Staff*  
 COUNTY  
 TWP **6-4E** RANGE  
 SECTION **2** QTR **NW & SW** ACRES **150**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**THOMAS REUTTER**  
 BOX 1160  
 GRUNTHAL, MB ROA DRD

SUBMITTED BY: **PR2421**  
**PRAIRIE SKY AVIATION**  
**2 MI SOUTH ON 59**  
**BOX 309**  
**NIVERVILLE, MB ROA 1E0**

REF # **17341711** BOX # **0**  
 LAB # **NW97164**

Date Sampled **09/29/2017** Date Received **10/04/2017** Date Reported **10/6/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Nitrate	0-6"	24 lb/ac	Oats		Alfalfa		Wheat-Spring			
	6-24"	63 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24"	87 lb/ac	120 BU		4 Tons		70 BU			
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Band		Band		Band			
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen	40 ppm	N	33	N	0	N	102		
Potassium		297 ppm	P <sub>2</sub> O <sub>5</sub>	15	P <sub>2</sub> O <sub>5</sub>	15	P <sub>2</sub> O <sub>5</sub>	15		
				Band (Starter)*		Band (Starter)*		Band (Starter)*		
Chloride			K <sub>2</sub> O	10	K <sub>2</sub> O	15	K <sub>2</sub> O	10		
	0-6"	70 lb/ac		Band (Starter)*		Band (Starter)*		Band (Starter)*		
	6-24"	360 +lb/ac	Cl		Cl		Cl			
Sulfur			S	0	S	0	S	0		
Boron		2.5 ppm	B	0	B	0	B	0		
Zinc		3.14 ppm	Zn	0	Zn	0	Zn	0		
Iron		14.0 ppm	Fe	0	Fe	0	Fe	0		
Manganese		1.5 ppm	Mn	0	Mn	0	Mn	0		
Copper		1.62 ppm	Cu	0	Cu	0	Cu	0		
Magnesium		1660 ppm	Mg	0	Mg	0	Mg	0		
Calcium		5461 ppm								
Sodium		151 ppm								
Org. Matter		5.4 %								
Carbonate(OCE)										
	6-6"	0.7 mmho/cm								
	6-24"	1.48 mmho/cm								
Soil Salts										
General Comments: Texture is not estimated on high pH soils.			Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
			0-6" 8.1		42.6 meq		% Ca (65-75)		% Mg (15-20)	
			6-24" 8.4				% K (1-7)		% Na (0-5)	
							% H (0-5)			

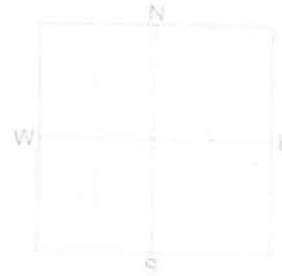
Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 40 K2O = 200 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 44 K2O = 26 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **100**  
 SAMPLE ID  
 FIELD NAME *Cyrix*  
 COUNTY  
 TWP **5-4E** RANGE  
 SECTION **29** QTR **NE** ACRES **160**  
 PREV. CROP **Wheat-Spring**



SUBMITTED FOR:  
**THOMAS REUTER**

**BOX 1160**  
**GRUNTHAL, MB**

ROA 0R0

SUBMITTED BY: **PR2421**

**PRAIRIE SKY AVIATION**  
**2 MI SOUTH ON 59**

**BOX 309**  
**NIVERVILLE, MB**

ROA 1E0

REF # **17341710** BOX # **0**  
 LAB # **NW97178**

Date Sampled **09/29/2017**

Date Received **10/04/2017**

Date Reported **10/6/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
			Oats		Corn-Grain		Wheat-Spring			
			YIELD GOAL		YIELD GOAL		YIELD GOAL			
			120 BU		150 BU		70 BU			
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Band		Band		Band			
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Nitrate	0-6" 14 lb/ac 6-24" 18 lb/ac 0-24" 32 lb/ac	*****	N	88	N	148	N	157		
Phosphorus	Olsen 6 ppm	*****	P <sub>2</sub> O <sub>5</sub>	34 Band *	P <sub>2</sub> O <sub>5</sub>	61 Band *	P <sub>2</sub> O <sub>5</sub>	46 Band *		
Potassium	222 ppm	*****	K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	10 Band (2x2) *	K <sub>2</sub> O	10 Band (Starter)*		
Chloride	0-6" 22 lb/ac 6-24" 96 lb/ac	*****	Cl		Cl		Cl			
Sulfur		*****	S	0	S	0	S	0		
Boron	0.8 ppm	*****	B	0	B	0	B	0		
Zinc	0.36 ppm	*****	Zn	2 Band (Trial)	Zn	2 Band	Zn	2 Band (Trial)		
Iron	24.0 ppm	*****	Fe	0	Fe	0	Fe	0		
Manganese	1.0 ppm	*****	Mn	0	Mn	0	Mn	0		
Copper	1.12 ppm	*****	Cu	0	Cu	0	Cu	0		
Magnesium	913 ppm	*****	Mg	0	Mg	0	Mg	0		
Calcium	5517 ppm	*****	Lime		Lime		Lime			
Sodium	35 ppm	*****								
Org. Matter	2.6 %	*****								
Carbonate (CCE)	0-6" 0.37 mmho/cm 6-24" 0.68 mmho/cm	*****	Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
Soil Salts		*****	0-6" 7.9 6-24" 8.0		35.9 meq	% Ca	% Mg	% K	% Na	% H
						(65-75)	(13-20)	(1-7)	(0-5)	(0-5)
						76.8	21.2	1.6	0.4	

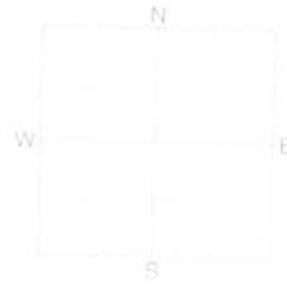
General Comments: Texture is not estimated on high pH soils.  
 Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 44 K2O = 26 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID 101  
 SAMPLE ID  
 FIELD NAME *Chris*  
 COUNTY  
 TWP 5-4E RANGE  
 SECTION 29 QTR SE ACRES 160  
 PREV. CROP *Wheat-Spring*



SUBMITTED FOR:  
 THOMAS REUTTER

BOX 1160  
 GRUNTHAL, MB ROA 0R0

SUBMITTED BY: PR2421  
 PRAIRIE SKY AVIATION  
 2 MI SOUTH ON 59  
 BOX 309  
 NIVERVILLE, MB ROA 1E0

REF # 17341709 BOX # 0  
 LAB # NW97184

Date Sampled 09/29/2017

Date Received 10/04/2017

Date Reported 10/6/2017

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
Nitrate	0-6"	24 lb/ac	Oats		Corn-Grain		Wheat-Spring	
	6-24"	15 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL	
	0-24"	39 lb/ac	120 BU		150 BU		70 BU	
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
Olsen		8 ppm	Band		Band		Band	
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION
Phosphorus			N	B1	N	141	N	150
Potassium		383 ppm	P <sub>2</sub> O <sub>5</sub>	31 Band *	P <sub>2</sub> O <sub>5</sub>	53 Band *	P <sub>2</sub> O <sub>5</sub>	41 Band *
Chloride	0-6"	34 lb/ac	K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	10 Band (2x2) *	K <sub>2</sub> O	10 Band (Starter)*
	6-24"	66 lb/ac	Cl		Cl		Cl	
Sulfur			S	0	S	0	S	0
Boron		1.2 ppm	B	0	B	0	B	0
Zinc		0.60 ppm	Zn	2 Band (Trial)	Zn	2 Band	Zn	2 Band (Trial)
Iron		42.8 ppm	Fe	0	Fe	0	Fe	0
Manganese		2.2 ppm	Mn	0	Mn	0	Mn	0
Copper		2.04 ppm	Cu	0	Cu	0	Cu	0
Magnesium		1445 ppm	Mg	0	Mg	0	Mg	0
Calcium		6417 ppm	Lime		Lime		Lime	
Sodium		55 ppm						
Org Matter		6.1 %						
Carbonate(CEC)								
Sol Salts	0-6"	0.79 mmho/cm	Soil pH		Buffer pH		Cation Exchange Capacity	
	6-24"	0.75 mmho/cm	5-5 7.4	5-24 8.2	45.3 meq		% Base Saturation (Typical Range)	
						% Ca	% Mg	% K
						(65-75)	(15-20)	(2-7)
						70.8	26.6	2.2
								0.5
								(0-5)

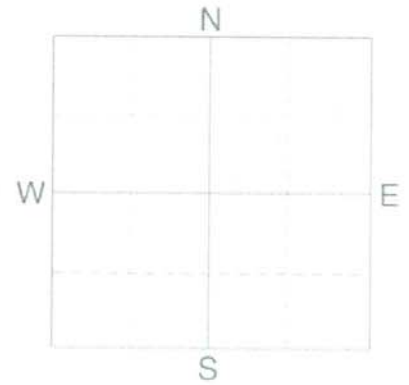
General Comments: Clays/Clay Loams (CEC range = 30+) (Fine)  
 Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 50 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 44 K2O = 36 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **NE-31-5-4E**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **5-4E** RANGE  
 SECTION **31** QTR **NE** ACRES **160**  
 PREV. CROP



**SUBMITTED FOR:**  
**THOMAS REUTTER**

**SUBMITTED BY:** PR2421  
**PRAIRIE SKY AVIATION**  
**2 MI SOUTH ON 59**  
**BOX 309**  
**NIVERVILLE, MB** **ROA 1E0**

REF # **18804363** BOX # **5550**  
 LAB # **NW28792**

Date Sampled **07/03/2018**

Date Received **07/05/2018**

Date Reported **7/6/2018**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice				
		Very Low	Low	Med	High	Wheat-Spring			Soybeans			Canola-bu				
Nitrate	0-6"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL				
	6-24"	*****				60 BU			40 BU			40 BU				
Olsen Phosphorus	0-24"	*****				SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES				
		*****				Band			Band			Band				
Potassium	18 ppm	*****				LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION			
Chloride	474 ppm	*****				N	70		N	***		N	48			
Sulfur	0-6"	*****				P <sub>2</sub> O <sub>5</sub>	15	Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	16	Band *	P <sub>2</sub> O <sub>5</sub>	14	Band *		
	6-24"	*****				K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	0		K <sub>2</sub> O	0			
Boron	1.3 ppm	*****				Cl			Cl			Cl				
Zinc	1.13 ppm	*****				S	0		S	0		S	10	Band		
Iron	24.9 ppm	*****				B	0		B	0		B	0			
Manganese	1.9 ppm	*****				Zn	0		Zn	0		Zn	0			
Copper	1.43 ppm	*****				Fe	0		Fe	0		Fe	0			
Magnesium	1549 ppm	*****				Mn	0		Mn	0		Mn	0			
Calcium	6313 ppm	*****				Cu	0		Cu	0		Cu	0			
Sodium	56 ppm	*****				Mg	0		Mg	0		Mg	0			
Org. Matter	8.0 %	*****				Lime			Lime			Lime				
Carbonate(CCE)		*****				Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)				
Sol. Salts	0-6"	*****				Buffer pH										
	6-24"	*****				0-6" 7.7			45.9 meq		(65-75)	(15-20)	(1-7)	(0-5)	(0-5)	
		*****				6-24" 8.2					68.7	28.1	2.6	0.5		

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

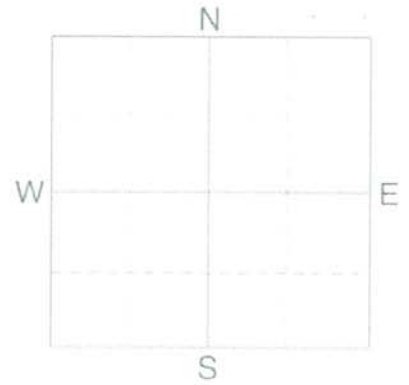
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID **NW-28-5-4E**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **5-4E** RANGE  
 SECTION **28** QTR **NW** ACRES **110**  
 PREV. CROP



**SUBMITTED FOR:**  
**THOMAS REUTTER**

**SUBMITTED BY:** PR2421  
**PRAIRIE SKY AVIATION**  
**2 MI SOUTH ON 59**  
**BOX 309**  
**NIVERVILLE, MB** ROA 1E0

REF # **18804365** BOX # **5568**  
 LAB # **NW28790**

Date Sampled **07/03/2018**

Date Received **07/05/2018**

Date Reported **7/6/2018**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		Very Low	Low	Med	High								
Nitrate	0-6"	12 lb/ac				Wheat-Spring		Soybeans		Canola-bu			
	6-24"	24 lb/ac	*****			YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24"	36 lb/ac				60 BU		40 BU		40 BU			
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
						Band		Band		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen	16 ppm	*****			N	126	N	***	N	104		
Potassium		562 ppm	*****			P <sub>2</sub> O <sub>5</sub>	19	P <sub>2</sub> O <sub>5</sub>	19	P <sub>2</sub> O <sub>5</sub>	18		
							Band *		Band *		Band *		
Chloride						K <sub>2</sub> O	10	K <sub>2</sub> O	0	K <sub>2</sub> O	0		
							Band (Starter)*						
Sulfur	0-6"	8 lb/ac	*****			Cl		Cl		Cl			
	6-24"	18 lb/ac	*****			S	7	S	7	S	17		
Boron		1.2 ppm	*****				Band (Trial)		Band (Trial)		Band		
Zinc		1.33 ppm	*****			B	0	B	0	B	0		
Iron		28.9 ppm	*****			Zn	0	Zn	0	Zn	0		
Manganese		1.8 ppm	*****			Fe	0	Fe	0	Fe	0		
Copper		1.66 ppm	*****			Mn	0	Mn	0	Mn	0		
Magnesium		1598 ppm	*****			Cu	0	Cu	0	Cu	0		
Calcium		6648 ppm	*****			Mg	0	Mg	0	Mg	0		
Sodium		49 ppm	*****			Lime		Lime		Lime			
Org. Matter		7.8 %	*****										
Carbonate(CCE)													
Sol. Salts	0-6"	0.54 mmho/cm	*****			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	6-24"	0.65 mmho/cm	*****			0-6" 7.7		48.2 meq	% Ca	% Mg	% K	% Na	% H
						5-24" 8.2			(65-75) 68.9	(15-20) 27.6	(1-7) 3.0	(0-5) 0.4	(0-5)

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Band guidelines will build P & K test levels to the medium range over many years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

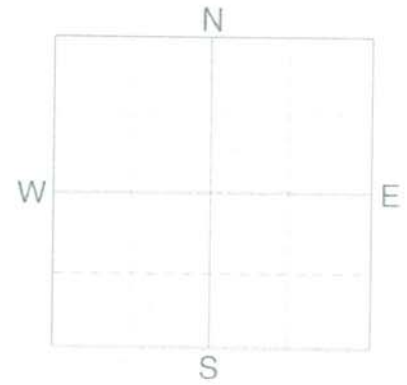




Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **NW 5-6-4E**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **6-4E** RANGE  
 SECTION **5** QTR **NW** ACRES **160**  
 PREV. CROP



SUBMITTED FOR:  
**THOMAS REUTTER**

SUBMITTED BY: **PR2421**  
**PRAIRIE SKY AVIATION**  
**2 MI SOUTH ON 59**  
**BOX 309**  
**NIVERVILLE, MB** ROA **1E0**

REF # **18804364** BOX # **5568**  
 LAB # **NW28791**

Date Sampled **07/03/2018**

Date Received **07/05/2018**

Date Reported **7/6/2018**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Low	Low	Med	High									
Nitrate	0-6" 13 lb/ac	*****				Wheat-Spring		Canola-bu		Soybeans				
	6-24" 21 lb/ac					YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 34 lb/ac					60 BU		40 BU		40 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
		Band		Band		Band		Band		Band				
		LB/ACRE		APPLICATION		LB/ACRE		APPLICATION		LB/ACRE		APPLICATION		
Phosphorus	Olsen 14 ppm	*****				N	128	N	106	N	***			
Potassium	497 ppm	*****				P <sub>2</sub> O <sub>5</sub>	23 Band *	P <sub>2</sub> O <sub>5</sub>	22 Band *	P <sub>2</sub> O <sub>5</sub>	22	Band *		
Chloride						K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
Sulfur	0-6" 10 lb/ac 6-24" 18 lb/ac	*****				Cl		Cl		Cl				
Boron	1.1 ppm	*****				S	7 Band (Trial)	S	17 Band	S	7	Band (Trial)		
Zinc	0.99 ppm	*****				B	0	B	0	B	0			
Iron	28.6 ppm	*****				Zn	2 Band (Trial)	Zn	2 Band (Trial)	Zn	2	Band (Trial)		
Manganese	1.5 ppm	*****				Fe	0	Fe	0	Fe	0			
Copper	1.56 ppm	*****				Mn	0	Mn	0	Mn	0			
Magnesium	1710 ppm	*****				Cu	0	Cu	0	Cu	0			
Calcium	6795 ppm	*****				Mg	0	Mg	0	Mg	0			
Sodium	47 ppm	*****				Lime		Lime		Lime				
Org. Matter	7.4 %	*****				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)						0-6" 7.7	Buffer pH	49.7 meq	% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 0.56 mmho/cm 6-24" 0.49 mmho/cm	*****				6-24" 8.3			(65-75) 68.4	(15-20) 28.7	(1-7) 2.6	(0-5) 0.4	(0-5)	

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 36 K2O = 18 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

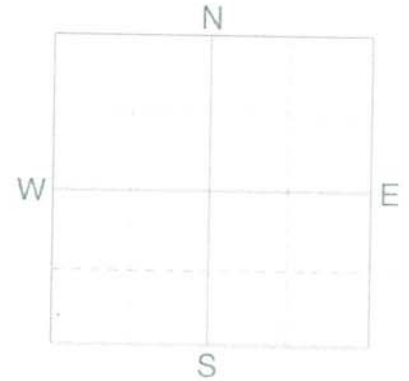
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 35 K2O = 60 AGVISE Band guidelines will build P & K test levels to the medium range over many years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.



Soil Analysis by Agvise Laboratories  
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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **SW-28-5-4E**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **5-4E** RANGE  
 SECTION **28** QTR **SW** ACRES **100**  
 PREV. CROP



**SUBMITTED FOR:**  
**THOMAS REUTTER**

**SUBMITTED BY:** PR2421  
**PRAIRIE SKY AVIATION**  
**2 MI SOUTH ON 59**  
**BOX 309**  
**NIVERVILLE, MB** ROA 1E0

REF # **18804362** BOX # **5568**  
 LAB # **NW28789**

Date Sampled **07/03/2018**

Date Received **07/05/2018**

Date Reported **7/6/2018**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Very Low	Low	Med	High									
Nitrate	0-6"	11 lb/ac				Wheat-Spring		Canola-bu		Soybeans				
	6-24"	30 lb/ac				YIELD GOAL		YIELD GOAL		YIELD GOAL				
Olsen Phosphorus	0-24"	41 lb/ac				60 BU		40 BU		40 BU				
						SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
Potassium						Band		Band		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Chloride						N	121	N	99	N	***			
						P <sub>2</sub> O <sub>5</sub>	29 Band *	P <sub>2</sub> O <sub>5</sub>	28 Band *	P <sub>2</sub> O <sub>5</sub>	27 Band *			
Sulfur	0-6"	8 lb/ac				K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	0	K <sub>2</sub> O	0			
	6-24"	24 lb/ac				Cl		Cl		Cl				
Boron		1.1 ppm				S	7 Band (Trial)	S	17 Band	S	7 Band (Trial)			
Zinc		1.00 ppm				B	0	B	0	B	0			
Iron		25.6 ppm				Zn	2 Band (Trial)	Zn	2 Band (Trial)	Zn	2 Band (Trial)			
Manganese		1.4 ppm				Fe	0	Fe	0	Fe	0			
Copper		1.58 ppm				Mn	0	Mn	0	Mn	0			
Magnesium		1529 ppm				Cu	0	Cu	0	Cu	0			
Calcium		6200 ppm				Mg	0	Mg	0	Mg	0			
Sodium		38 ppm				Lime		Lime		Lime				
Org.Matter		7.4 %				Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)						Buffer pH				% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6"	0.57 mmho/cm				0-6"	7.7	45.2 meq	68.6	(15-20)	28.2	(1-7)	2.8	(0-5)
	6-24"	0.66 mmho/cm				6-24"	8.2							

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 36 K2O = 18 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

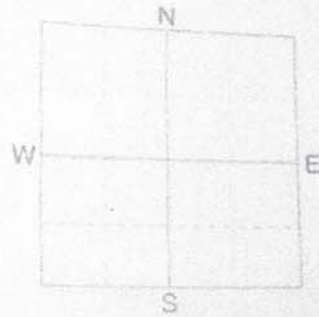
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 35 K2O = 60 AGVISE Band guidelines will build P & K test levels to the medium range over many years. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.



Analysis by Agvise Laboratories  
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### SOIL TEST REPORT

FIELD ID 238  
 SAMPLE ID  
 FIELD NAME *Catteler*  
 COUNTY  
 TWP 5-4E RANGE  
 SECTION 23 QTR NW ACRES 40  
 PREV. CROP *Wheat-Spring*



SUBMITTED FOR:  
**HEUTTER FARMS**  
 BOX 156  
 GRUNTHAL, MB ROA 0R0

SUBMITTED BY: PR2421  
**PRAIRIE SKY AVIATION**  
 2 MI SOUTH ON 59  
 BOX 309  
 NIVERVILLE, MB ROA 1E0

REF # 18790858 BOX # 0  
 LAB # NW59357

Date Sampled 08/31/2016 Date Received 09/01/2016 Date Reported 9/7/2016

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Nitrate	0-6"	16 lb/ac	Canola-bu		Corn-Grain		Wheat-Spring			
	6-24"	54 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24"	70 lb/ac	60 BU		150 BU		70 BU			
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Band		Band		Band			
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen	44 ppm	N	140	N	110	N	119		
Potassium		355 ppm	P <sub>2</sub> O <sub>5</sub>	10 Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	15 Band (2x2)*	P <sub>2</sub> O <sub>5</sub>	15 Band (Starter)*		
Chloride			K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (2x2)*	K <sub>2</sub> O	10 Band (Starter)*		
			Cl		Cl		Cl			
Sulfur	0-6"	120 +lb/ac	S	10 Band	S	0	S	0		
	6-24"	360 +lb/ac	B	0	B	0	B	0		
Boron		6.9 ppm	Zn	0	Zn	0	Zn	0		
Zinc		2.18 ppm	Fe	0	Fe	0	Fe	0		
Iron		29.8 ppm	Mn	0	Mn	0	Mn	0		
Manganese		3.4 ppm	Cu	0	Cu	0	Cu	0		
Copper		1.91 ppm	Mg	0	Mg	0	Mg	0		
Magnesium		1575 ppm	Lime		Lime		Lime			
Calcium		6347 ppm								
Sodium		907 ppm								
Org.Matter		7.5 %								
Carbonate(CCE)										
			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
						% Ca	% Mg	% K	% Na	% S
			0-6" 8.0		49.7 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
			6-24" 8.2			63.8	26.4	1.8	7.9	
Sol. Salts	0-6"	1.48 mmho/cm								
	6-24"	4.29 mmho/cm								

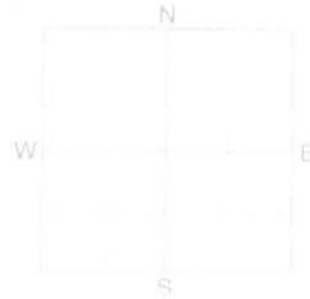
General Comments: Texture is not estimated on high pH soils. Moderate sodium levels may cause soil dispersion, poor water movement and reduced yields.  
 Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P = 54 K2O = 27 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P = 44 K2O = 26 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories  
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 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **7**  
 SAMPLE ID  
 FIELD NAME *Horse Barn*  
 COUNTY  
 TWP **5-5E** RANGE  
 SECTION **19** QTR **NW** ACRES **140**  
 PREV. CROP **Corn-Grain**



SUBMITTED FOR:  
**THOMAS REUTTER**

BOX **1160**  
 GRUNTHAL, MB ROA **0R0**

SUBMITTED BY: **PR2421**  
**PRAIRIE SKY AVIATION**  
**2 MI SOUTH ON 59**  
 BOX **309**  
 NIVERVILLE, MB ROA **1E0**

REF # **17341705** BOX # **0**  
 LAB # **NW97204**

Date Sampled **09/29/2017**

Date Received **10/04/2017**

Date Reported **10/6/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
			Corn-Grain		Oats		Alfalfa			
			YIELD GOAL		YIELD GOAL		YIELD GOAL			
			150 BU		120 BU		4 Tons			
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Band		Band		Band			
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Nitrate	0-6" 18 lb/ac 6-24" 48 lb/ac	*****	N 114		N S4		N 0			
Phosphorus	Olsen 39 ppm	*****	P <sub>2</sub> O <sub>5</sub> 15	Band (2x2) *	P <sub>2</sub> O <sub>5</sub> 15	Band (Starter) *	P <sub>2</sub> O <sub>5</sub> 15	Band (Starter) *		
Potassium	142 ppm	*****	K <sub>2</sub> O 33	Band *	K <sub>2</sub> O 34	Band *	K <sub>2</sub> O 87	Band *		
Chloride			Cl		Cl		Cl			
Sulfur	0-6" 38 lb/ac 6-24" 108 lb/ac	*****	S 0		S 0		S 0			
Boron	1.1 ppm	*****	B 0		B 0		B 1	Broadcast		
Zinc	5.05 ppm	*****	Zn 0		Zn 0		Zn 0			
Iron	15.0 ppm	*****	Fe 0		Fe 0		Fe 0			
Manganese	1.5 ppm	*****	Mn 0		Mn 0		Mn 0			
Copper	0.9 ppm	*****	Cu 0		Cu 0		Cu 0			
Magnesium	487 ppm	*****	Mg 0		Mg 0		Mg 0			
Calcium	3713 ppm	*****								
Sodium	86 ppm	*****								
Org. Matter	3.9 %	*****								
Carbonate(CCE)										
	0-6" 0.28 mmho/cm 6-24" 0.32 mmho/cm	*****	Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
						% Ca	% Mg	% K	% Na	% H
			0-6" 8.0		23.4 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
			6-24" 8.4			79.5	17.4	1.6	1.6	

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

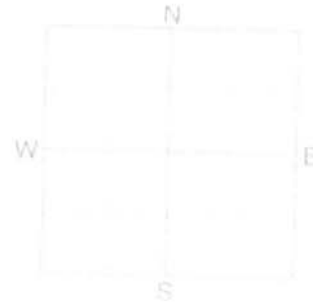
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 40 K2O = 200 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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

### SOIL TEST REPORT

FIELD ID 6  
 SAMPLE ID  
 FIELD NAME F-9-F3  
 COUNTY  
 TWP 5-5E RANGE  
 SECTION 20 QTR SW&NW ACRES 65  
 PREV. CROP Corn-Grain



SUBMITTED FOR:  
 THOMAS REUTER

BOX 1160  
 GRUNTHAL, MB ROA 0R0

SUBMITTED BY: PR2421

PRAIRIE SKY AVIATION  
 2 MI SOUTH ON 59  
 BOX 309

NIVERVILLE, MB ROA 1E0

REF # 17341706 BOX # 0  
 LAB # NW97195

Date Sampled 09/29/2017

Date Received 10/04/2017

Date Reported 10/6/2017

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Depth	Concentration		Yield Goal	Suggested Guidelines	Yield Goal	Suggested Guidelines	Yield Goal	Suggested Guidelines		
0-6"	39 lb/ac		Corn-Grain		Oats		Wheat Spring			
6-24"	69 lb/ac		YIELD GOAL		YIELD GOAL		YIELD GOAL			
			150 BU		120 BU		70 BU			
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Band		Band		Band			
			LB/ACRE APPLICATION		LB/ACRE APPLICATION		LB/ACRE APPLICATION			
			N 72		N 12		N 81			
			P <sub>2</sub> O <sub>5</sub> 15 Band (2x2) *		P <sub>2</sub> O <sub>5</sub> 15 Band (Starter) *		P <sub>2</sub> O <sub>5</sub> 15 Band (Starter) *			
			K <sub>2</sub> O 43 Band *		K <sub>2</sub> O 43 Band *		K <sub>2</sub> O 38 Band *			
			Cl		Cl		Cl			
			S 0		S 0		S 0			
			B 0		B 0		B 0			
			Zn 0		Zn 0		Zn 0			
			Fe 0		Fe 0		Fe 0			
			Mn 0		Mn 0		Mn 0			
			Cu 0		Cu 0		Cu 0			
			Mg 0		Mg 0		Mg 0			
			Lime		Lime		Lime			
			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
			0-6" 8.4		35.1 meq	% Ca (65-75)	% Mg (15-20)	% K (1-7)	% Na (0-5)	% H (0-5)
			6-24" 8.5			73.0	24.5	0.9	1.6	

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

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 60 K2O = 41 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 30 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P205 = 44 K2O = 26 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Desalegn Edossa  
<desalegn.southmaneng@gmail.com>

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## Reutter Dairy

1 message

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**Friesen, Chris (SD)** <Chris.Friesen@gov.mb.ca> Thu, Jun 7, 2018 at 10:28 AM  
To: "desalegn.southmaneng@gmail.com" <desalegn.southmaneng@gmail.com>

Desalegn

Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's rare species database and found no occurrences at this time for your area of interest.

The information provided in this letter is based on existing data known to the Manitoba Conservation Data Centre at the time of the request. These data are dependent on the research and observations of CDC staff and others who have shared their data, and reflect our current state of knowledge. An absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present; in many areas, comprehensive surveys have never been completed. Therefore, this information should be regarded neither as a final statement on the occurrence of any species of concern, nor as a substitute for on-site surveys for species as part of environmental assessments.

Because the Manitoba CDC's Biotics database is continually updated and because information requests are evaluated by type of action, any given response is only appropriate for its respective request. Please contact the Manitoba CDC for an update on this natural heritage information if more than six months pass before it is utilized.

Third party requests for products wholly or partially derived from Biotics must be approved by the Manitoba CDC before information is released. Once approved, the primary user will identify the Manitoba CDC as data contributors on any map or publication using Biotics data, as follows as: Data developed by the Manitoba Conservation Data Centre; Wildlife & Fisheries Branch, Manitoba Sustainable Development.

This letter is for information purposes only - it does not constitute consent or

approval of the proposed project or activity, nor does it negate the need for any permits or approvals required by the Province of Manitoba.

We would be interested in receiving a copy of the results of any field surveys that you may undertake, to update our database with the most current knowledge of the area.

If you have any questions or require further information please contact me directly at (204) 945-7747.

Chris Friesen  
Coordinator  
Manitoba Conservation Data Centre  
204-945-7747  
chris.friesen@gov.mb.ca  
<http://www.manitoba.ca/sd/cdc/>

——Original Message——

From:  
Sent: June-01-18 9:37 AM  
To: Friesen, Chris (SD) <Chris.Friesen@gov.mb.ca>  
Subject: Spam: WWW Form Submission

Below is the result of your feedback form. It was submitted by WWW Information Request () on Friday, June 1, 2018 at 09:37:24

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DocumentID: Manitoba\_Conservation

Project Title: Reutter Dairy

Date Needed: 2018/06/14

Name: Desalegn Edossa

Company/Organization: South-Man Engineering

Address: 15-1599 Dugald Rd.

City: winnipeg

Province/State: Manitoba

**Phone: 2046689652**

**Email: desalegn.southmaneng@gmail.com**

**Project Description: The information will be used to determine the impacts on species by a proposed expansion of livestock operation.**

**Information Requested: Would like to know if there are any species at risk or endangered in region that may be impacted by the proposed expansion of livestock operation.**

**Format Requested: Microsoft Word Document as email attachment.**

**Location: SW 19-5-5E in the RM of Hanover**

**action: Submit**

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