

# SITE ASSESSMENT

FOR LARGE LIVESTOCK OPERATION PROPOSALS  
(300 ANIMAL UNITS OR MORE)



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## 1.0 Purpose

The establishment or expansion of a livestock operation that has 300 Animal Units or more is subject to Part 7 of [The Planning Act](#). When such proposals are considered a conditional use by a municipal council or planning district board, approval of a conditional use permit is required. This includes a review by the Technical Review Committee (TRC) appointed by the Minister of Indigenous and Municipal Relations. The [Technical Review Committee Regulation](#) requires a site assessment be undertaken by the proponent to help the committee complete its review and allow the public affected by the livestock operation to comment on the proposal.

## 2.0 Assistance

For assistance in completing the Site Assessment Form, the following resources are available:

- [Glossary of Terms](#) for definitions
- [Manitoba Agriculture](#) for animal unit and suitable spread field acreage calculations
- [Manitoba Sustainable Development](#) for information on regulatory requirements
- Government agencies to obtain any required reports. For example, a Conservation Data Centre report is required as per Section 12.0 of the Site Assessment
- Contact the [Technical Review Coordination Unit](#) for additional help.

### 3.0 Description of Livestock Operation

Operation legal name, if other than the owner's name:

Waldheim Colony

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Operation location (project site)<sup>1</sup>:

NE 20-10-3W

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Rural Municipality (RM):

Cartier

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Legal description: quarter, section, township, range, meridian or river lot(s):

NE 20-10-3W

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Manitoba Premises Identification Number:

44039-6

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Municipal Tax Roll Number(s):

0075800.000

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Illustrate the location of the operation (project site) on a map. (See [Location Map](#) for example).

 *Location Map Attached*

### 4.0 Nature of Project<sup>2</sup>

Please indicate if the proposal is for a new or expanding livestock operation. If the operation is expanding, please identify when the operation was established.

- New Operation  
 Expansion of Existing Operation

Date Established: 1935

Describe what is being proposed:

It is proposed to expand chicken production from the current 9,000 layers and 6,400 pullets to

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20,000 layers and 20,000 pullets, respectively. The existing dairy operation will be discontinued.

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# R.M. OF CARTIER



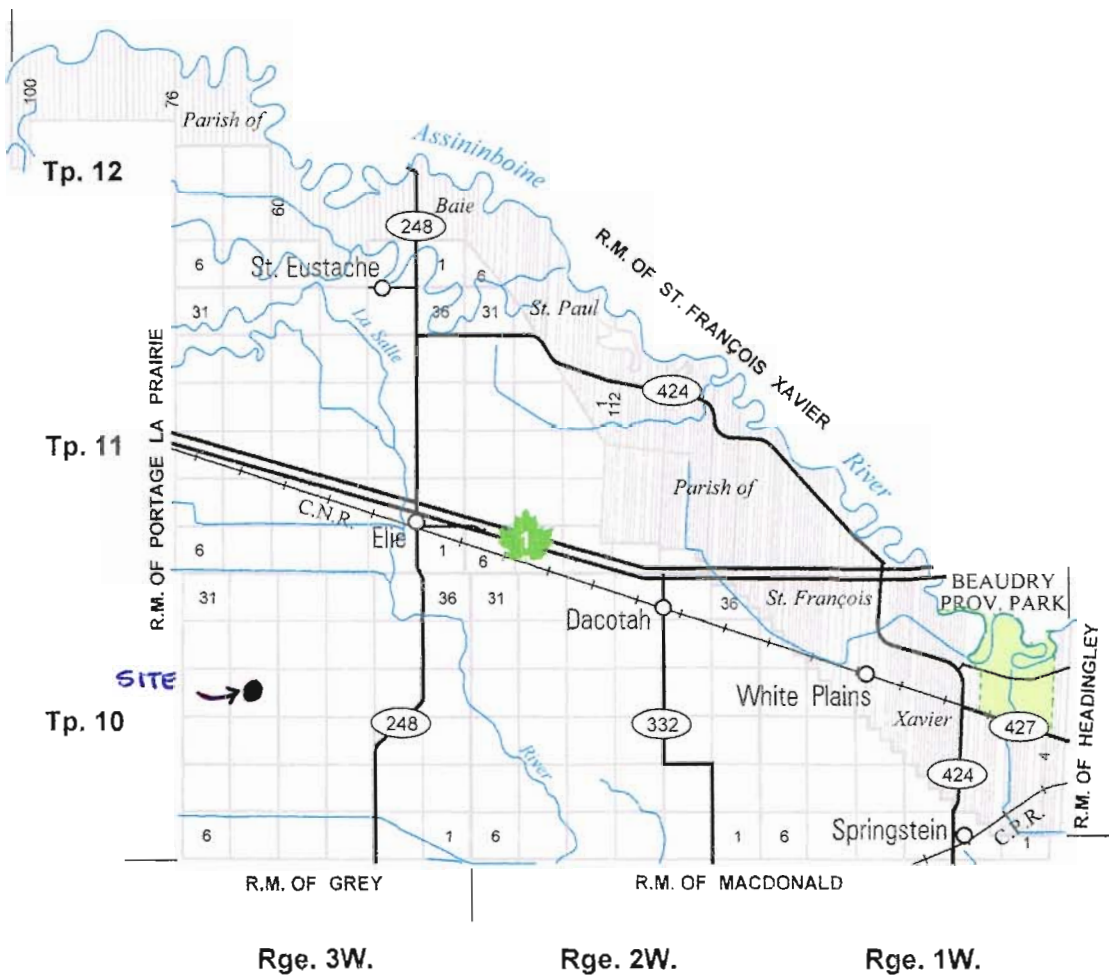
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SCALE IN KILOMETRES

PROVINCE OF MANITOBA  
INFRASTRUCTURE  
HIGHWAY PLANNING AND DESIGN BRANCH  
GEOGRAPHIC & RECORDS MANAGEMENT SECTION  
WINNIPEG  
JANUARY 1, 2015

REVISED: APRIL 2015

## LEGEND

TRANS-CANADA HIGHWAY .....		ACCESS ROADS .....	
PROVINCIAL ROADS .....		RAILWAYS .....	



State if any existing buildings will be replaced or demolished. If existing buildings will be reused or expanded, state how they will be reused or expanded.

The existing dairy and poultry buildings will be used for other miscellaneous and non-livestock purposes.

### 5.0 Current and Proposed Type and Size of Operation<sup>3</sup>

Using the Manitoba Agriculture [Animal Units Calculator](#), indicate the total number of animals and animal units for each animal category associated with the current and proposed operation (if applicable).

**Table 5-1: Current and Proposed Operation Animal Unit Summary**

Animal Categories (Column B from Animal Units Calculator)	Current Operation		Proposed Operation	
	Current Number of Animals (Column D)	Current Number of Animal Units (Column E)	Proposed Number of Animals (Column F)	Proposed Number of Animal Units (Column G)
Mature cows (lactating and dry) and bulls	80	108	0	0
Sows - Farrow to Finish	600	750	600	750
Broilers	4,000	20	4,000	20
Layers	9,000	75	20,000	166
Pullets	3,200	11	20,000	66
	<b>Total Current</b>	<b>964</b>	<b>Total Proposed</b>	<b>1,002</b>

 Manitoba Agriculture Animal Units Calculator attached

### 6.0 Animal Confinement<sup>4</sup>

Based on the nature of the proposed project indicate the type of animal confinement. (Note: Please check more than one category if applicable)

- Animal Confinement Facility** – means a barn or an outdoor area where livestock are confined by fences or other structures, and includes a seasonal feeding area but does not include a feedlot or a grazing area.

# Animal Units Calculator

A	B	C	Current Operation		Proposed Operation	
			D	E	F	G
Operation Type	Animal Categories	Animal Units per Head	Current Number of Animals <sup>1</sup>	Current Animal Units	Proposed Number of Animals <sup>2</sup>	Proposed Number of Animal Units
Dairy <sup>3</sup>	Mature cows (lactating and dry) including associated livestock	2		-		-
	Mature cows (lactating and dry)	1.35	80	108		-
	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	600	750	600	750
	Sows - farrow to weaning (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	4,000	20	4,000	20
	Roasters	0.01		-		-
	Layers	0.0083	9,000	75	20,000	166
	Pullets	0.0033	3,200	11	20,000	66
	Broiler breeder pullets	0.0033		-		-
	Broiler breeder hens	0.01		-		-
	Turkeys	0.01		-		-
Horses	Mares	1.333		-		-
	Heavy Toms	0.02		-		-
	Heavy Hens	0.01		-		-
Sheep	Ewes	0.2		-		-
	Feeder lambs	0.063		-		-
Other Livestock	Type:			-		-
	Type:			-		-
			Total Current:	864	Total Proposed:	1,002

**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





**Confined Livestock Area**<sup>5</sup> – means an outdoor, non-grazing area where livestock are confined by fences or other structures, and includes a feedlot, paddock, corral, exercise yard, holding area and hoop structures.

**Other** (Describe what is being proposed)

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Does the operation currently use a confined livestock area:

Yes

No

If yes, what is the current capacity (livestock places and animal units)? \_\_\_\_\_

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To ensure the proposed livestock operation can be built in a way the environment is protected, a permit is required for construction and expansion of confined livestock area(s) for operations with 300 Animal Units or more. Permits are required by the [Livestock Manure and Mortalities Management Regulation \(M.R. 42/98\)](#), under [The Environment Act](#).

A permit under the [Livestock Manure and Mortalities Management Regulation \(M.R. 42/98\)](#) is not required for an indoor housing area or barn unless there is a manure storage facility within the building (an under barn storage capable of storing manure for 30 days or more).

Note that agricultural buildings such as barns over 600 meters (6,458 sq ft) require a building permit from the Fire Commissioner's Office under *The Building and Mobile Home Act* and the Manitoba Building Code.

Show all existing, proposed buildings and additions to existing buildings on the project site plan. See [Project Site Plan example](#) and the [Project Site Plan Guide](#) for help creating your site plan<sup>6</sup>.

*Project Site Plan attached*

## 7.0 Water

### 7.1 Project Sites Unsuitable for Development

To protect water quality, the [Nutrient Management Regulation \(M.R. 62/2008\)](#), under *The Water Protection Act*, prohibits the construction or expansion of nutrient generating facilities in Nutrient Management Zone 4 (Agriculture Capability Class 6, 7 and unimproved organic soils) and Nutrient Buffer Zones. Nutrient generating facilities include barns, confined livestock areas and manure storage facilities.

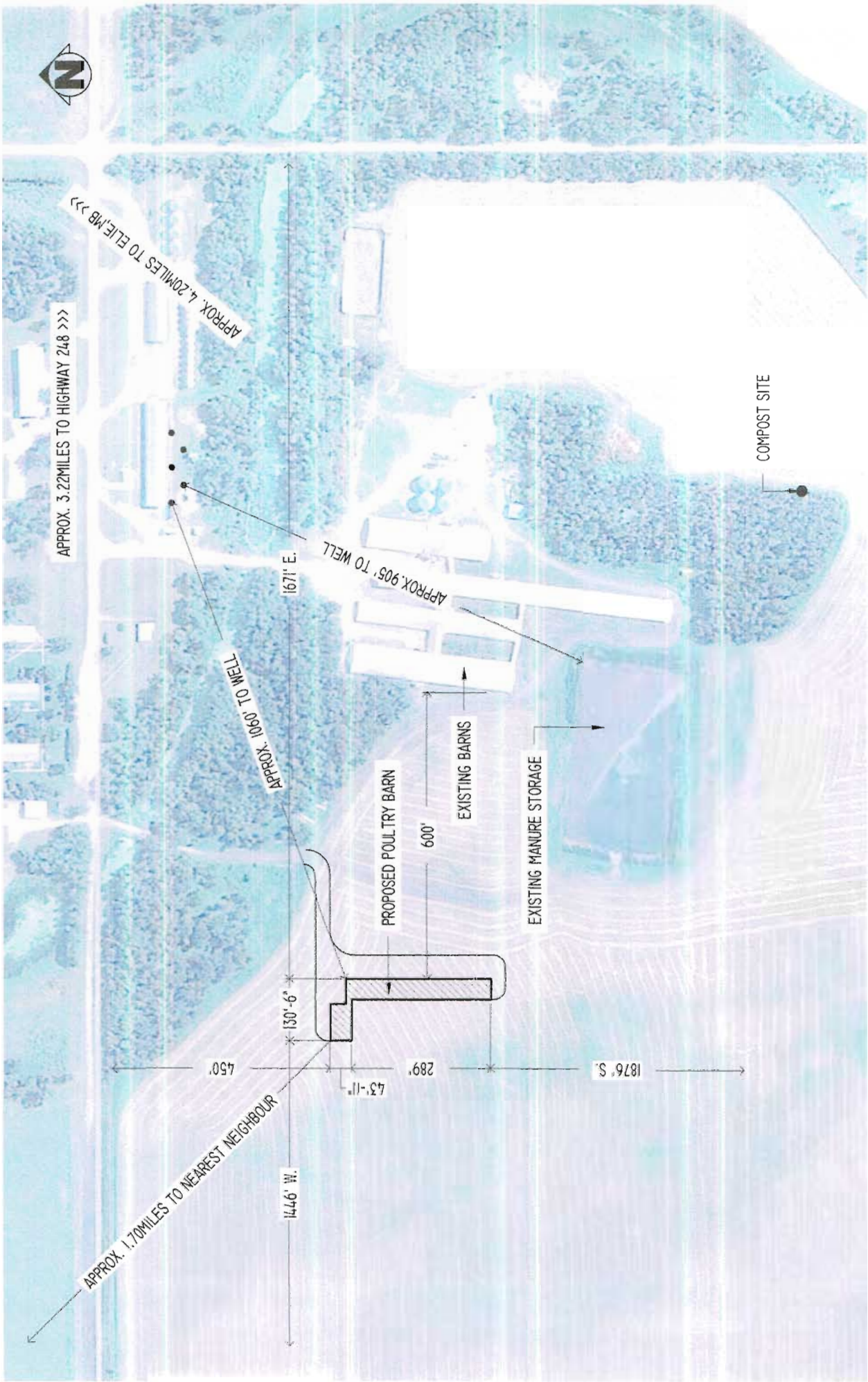
A [Nutrient Buffer Zone](#), as defined in section 3(3) of the regulation, includes areas of land along water bodies such as rivers, lakes, streams and drains.

The proposed indoor housing area, barn, confined livestock area and/or manure storage facility:

will

will not

be located within Nutrient Management Zone 4 (Class 6, 7 and unimproved organic soils) or any Nutrient Buffer Zone.



PROJECT NAME	WALDHEIM COLONY POULTRY BARN	BUILDING AREA	N/A
SHEET TITLE	SITE PLAN NE 20-10-3W	DRAWN BY	R. FLORES SOUTH-MAN ENGINEERING
DATE DRAWN	MARCH 2017	DRAWING SCALE	N.T.S.
THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.		SHEET NUMBER	SP-1



Determine the agriculture capability class(es), including their limitations, of the soils for the project site.

Individuals with GIS mapping software can access information through [Manitoba Land Initiative](#) (MLI) website. In addition, information from MLI can also be viewed on Google Earth. Both the download for Google Earth and the registration for MLI are free.

Click [here](#) for instructions under the MLI website.

## 7.2 Water Source<sup>7</sup>

To be sustainable, a livestock operation must have access to a sufficient quantity and quality of water for livestock.

Water source for operation:

- |   |   |
|---|---|
| <input type="checkbox"/> Pipeline (public)                | <input type="checkbox"/> Water cooperative        |
| <input type="checkbox"/> Proposed well                    | <input checked="" type="checkbox"/> Existing well |
| <input type="checkbox"/> River                            | <input type="checkbox"/> Lake                     |
| <input type="checkbox"/> Dugout - dimensions: ___x___x___ |   |

If using an existing well, provide a copy of the water well log<sup>8</sup> and logs for other wells on the property. Logs can be obtained from Manitoba Sustainable Development by calling (204) 945-6959 in Winnipeg; 1-800-214-6497 toll free.

## 7.3 Source Water Analysis Reports

Annual [livestock source water quality monitoring reports](#) must be submitted to Manitoba Sustainable Development for any operations of 300 Animal Units or more.

Has the operation submitted an annual source water monitoring report?

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> N/A (new operation or existing operation <300 AU currently) |
| <input type="checkbox"/> No             |  |

If yes, please indicate year of last submission: 2017

Will livestock have direct access to surface water (not including dugouts)?

- |                              |  |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|

If yes, identify the name of the surface water feature:

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List any steps that will be taken to prevent direct access of livestock to the water body:

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LOCATION: NE20-10-3W

Well\_PID: 60105  
Owner: WALDHIEM COLONY  
Driller: Paddock Drilling Ltd.  
Well Name: WEST WELL  
Well Use: PRODUCTION  
Water Use: Livestock  
UTMX: 584147.179  
UTMY: 5522972.53  
Accuracy XY: UNKNOWN  
UTMZ:  
Accuracy Z:  
Date Completed: 1987 Sep 28

WELL LOG

From (ft.)	To (ft.)	Log
0	6.0	SANDY BROWN CLAY
6.0	18.0	MEDIUM FINE BROWN SAND
18.0	19.0	CLAY

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	11.0	casing	30.00			CORRUGATED	
FIBERGLASS							
11.0	18.0	perforations	30.00		0.040	SAW CUT	
FIBERGLASS							
0	19.0	gravel pack					WASHED

S.

Top of Casing: 1.0 ft. below ground

PUMPING TEST

Date: 1987 Sep 28  
Pumping Rate: 36.0 Imp. gallons/minute  
Water level before pumping: 8.0 ft. below ground  
Pumping level at end of test: 15.0 ft. below ground  
Test duration: 1 hours, minutes  
Water temperature: ?? degrees F

REMARKS

N. SIDE COULEE PUMP TEST IS RECOVERY EC=18508 FE=0.68 HARD=528  
SULFATE=350,N=1.0

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LOCATION: NE20-10-3W

Well\_PID: 140822  
Owner: WALDHEIM CCLONY  
Driller: Paddock Drilling Ltd.  
Well Name: WELL#3  
Well Use: PRODUCTION  
Water Use: Livestock  
UTMX: 584147.179  
UTMY: 5522972.53  
Accuracy XY: 5 GENERAL [1KM-8KM] [WITHIN TOWNSHIP]  
UTMZ:  
Accuracy Z:  
Date Completed: 2006 Sep 08

WELL LOG

From (ft.)	To (ft.)	Log
0	1.0	TOPSOIL
1.0	8.0	SOFT BROWN CLAY
8.0	18.0	MEDIUM BROWN SAND, CLEAN
18.0	20.0	STIFF CLAY

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	9.0	CASING	30.00			CORRUGATED	
FIBERGLASS							
9.0	19.0	PERFORATIONS	30.00		0.040	SAW CUT	
FIBERGLASS							
8.0	19.0	GRAVEL PACK					WASHED SAND
6.0	8.0	CASING GROUT					BENTONITE
0	6.0	GRAVEL PACK					WASHED SAND

Top of Casing: 1.0 ft. above ground

PUMPING TEST

Date: 2006 Sep 08  
Pumping Rate: 36.0 Imp. gallons/minute  
Water level before pumping: 9.0 ft. below ground  
Pumping level at end of test: 15.0 ft. below ground  
Test duration: 1 hours, minutes  
Water temperature: ?? degrees F

REMARKS

FURTHEST WEST, S SIDE OF QUONSET, PUMP TEST IS RECOVERY

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LOCATION: NE20-10-3W

Well\_PID: 140818  
Owner: WALDHEIM COLONY  
Driller: Paddock Drilling Ltd.  
Well Name: WELL #2  
Well Use: PRODUCTION  
Water Use: Livestock  
UTMX: 584147.179  
UTMY: 5522972.53  
Accuracy XY: 5 GENERAL [1KM-8KM] [WITHIN TOWNSHIP]  
UTMZ:  
Accuracy Z:  
Date Completed: 2006 Sep 01

WELL LOG

From (ft.)	To (ft.)	Log
0	1.0	TOPSOIL
1.0	8.0	SOFT BROWN CLAY
8.0	16.0	MEDIUM BROWN SAND
16.0	20.0	STIFF GREY

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	9.0	CASING	30.00			CORRUGATED	
FIBERGLASS							
9.0	19.0	PERFORATIONS	30.00		0.040	SAW CUT	
FIBERGLASS							
8.0	19.0	GRAVEL PACK					WASHED SAND
6.0	8.0	CASING GROUT					BENTONITE
0	6.0	GRAVEL PACK					WASHED SAND

Top of Casing: 1.0 ft. above ground

PUMPING TEST

Date: 2006 Sep 01  
Pumping Rate: 33.0 Imp. gallons/minute  
Water level before pumping: 9.0 ft. below ground  
Pumping level at end of test: 16.0 ft. below ground  
Test duration: 1 hours, minutes  
Water temperature: ?? degrees F

REMARKS

SAM OR STEVE WALDNER, CENTRE HOLE ALONG S SIDE OF QUONSET, PUMP TEST IS RECOVERY

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LOCATION: NE20-10-3W

Well\_PID: 140819  
Owner: WALDHEIM COLONY  
Driller: Paddock Drilling Ltd.  
Well Name: WELL #1  
Well Use: PRODUCTION  
Water Use: Livestock  
UTMX: 584147.179  
UTMY: 5522972.53  
Accuracy XY: 5 GENERAL [1KM-8KM] [WITHIN TOWNSHIP]  
UTMZ:  
Accuracy Z:  
Date Completed: 2006 Sep 01

WELL LOG

From (ft.)	To (ft.)	Log
0	1.0	TOPSOIL
1.0	8.0	SOFT BROWN CLAY
8.0	16.0	MEDIUM BROWN SAND, CLEAN
16.0	20.0	STIFF CLAY

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	9.0	CASING	30.00			CORRUGATED	
FIBERGLASS							
9.0	19.0	PERFORATIONS	30.00		0.040	SAW CUT	
FIBERGLASS							
8.0	19.0	GRAVEL PACK					WASHED
SAND							
6.0	8.0	CASING GROUT					
BENTONITE							
0	6.0	GRAVEL PACK					WASHED
SAND							

Top of Casing: 1.0 ft. above ground

PUMPING TEST

Date: 2006 Sep 01  
Pumping Rate: 33.0 Imp. gallons/minute  
Water level before pumping: 89.0 ft. below ground  
Pumping level at end of test: 16.0 ft. below ground  
Test duration: 1 hours, minutes  
Water temperature: ?? degrees F

REMARKS

FURTHEST EAST, S SIDE OF QUONSET, PUMP TEST IS RECOVERY

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LOCATION: NE20-10-3W

Well\_PID: 60106  
Owner: WALDHIEM CCLONY  
Driller: Paddock Drilling Ltd.  
Well Name: EAST WELL  
Well Use: PRODUCTION  
Water Use: Domestic, Livestock  
UTMX: 584147.179  
UTMY: 5522972.53  
Accuracy XY: UNKNOWN  
UTMZ:  
Accuracy Z:  
Date Completed: 1987 Sep 28

WELL LOG

From (ft.)	To (ft.)	Log
0	6.0	BROWN CLAY
6.0	12.0	MEDIUM FINE BROWN SAND
12.0	18.0	MEDIUM FINE GREY BROWN SAND
18.0	20.0	GREY SAND, WOOD AND OTHER ORGANICS

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	11.0	casing	30.00			CORRUGATED	
11.0	18.0	perforations	30.00		0.040	SAW CUT	
0	20.0	gravel pack					WASHED

S.

Top of Casing: 1.5 ft. below ground

PUMPING TEST

Date: 1987 Sep 28  
Pumping Rate: 30.0 Imp. gallons/minute  
Water level before pumping: 9.0 ft. below ground  
Pumping level at end of test: 16.0 ft. below ground  
Test duration: 1 hours, minutes  
Water temperature: ?? degrees F

REMARKS

N. SIDE COULEE PUMP TEST IS RECOVERY EC=2500MM, FE=0.3 MG/L,  
SULFATE=330 MG/L, N=1.0 MG/L HARD=79 GPG

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## 7.4 Water Requirements

Protecting the interests of domestic users and the environment, in addition to existing licensees, is the intended purpose of the water rights licensing scheme.

In order to protect the sustainability of water sources, all operations using more than 25,000 litres (5,499 imperial gallons) per day must possess a Water Rights License required by the [Water Rights Regulation](#) (MR 126/87) under *The Water Rights Act*.

For more information on the Water Rights Licensing process, contact the Water Use Licensing Section at (204) 945-3983 in Winnipeg; 1-800-214-6497 toll free.

### Water Use<sup>9</sup>

To calculate the total water use for non-dairy operations, go to the [Water Requirement Calculator](#).

For dairy operations, go to the [Dairy Barn Water Requirement Estimator](#).

Maximum daily use for the operation:	31,048
<input checked="" type="checkbox"/> imperial gallons	<input type="checkbox"/> litres
Maximum annual use for the operation:	11,332,338
<input checked="" type="checkbox"/> imperial gallons	<input type="checkbox"/> cubic decameters

*Water Requirement Calculator attached*

*Dairy Barn Water Requirement Estimator attached*

## 7.5 Groundwater (Contamination Risk Protection)

Improper storage and handling of manure or mortalities increases the risk of contaminating groundwater. Beneficial management practices (BMP), mitigation measures and requirements for the permit process reduce this risk. Soil testing, manure management planning and proper engineering, along with construction and management of manure storage structures, reduce the risk of contaminating groundwater.

All unused or abandoned well(s) on site and spread fields should be properly sealed and a seal well report filed with the Groundwater Management Section of Manitoba Sustainable Development. Information on well sealing is available from Manitoba Sustainable Development at (204) 945-6959 or refer to the [technical information document](#). It is recommended that all but the most basic wells should be sealed by a well drilling professional.

# 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.)		5	9	-
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)	90		6.5	585
Dry Sow/Boar	550		4	2,200
Feeder	6,120		3	18,360
Nursery (33 lb.)	2,520		2	5,040
<b>Chickens</b>				
Broilers	4,000		0.035	140
Roasters/Pullets	20,000		0.04	800
Layers	20,000		0.055	1,100
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>28,225</b>
<b>*** TOTAL with 10% wash water</b>				<b>31,048</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.

Enter this number on page 7 of Application Form.

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

**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
31,048	11,332,338	IG
128,311	46,833,460	litres
0.128	47	cubic decametres (dam <sup>3</sup> )

Enter this number on page 7 of Application Form.

Conversion Factor: 1 IGPM = 4.546 l/m

Check off the mitigation measures used for the existing components of the operation that may pose a risk of contamination. Also check off any measures that may be used with the proposed components for this expansion, if applicable:

	Existing	Proposed	Not Applicable
Manure is stored in a storage facility built by permit or is registered by Manitoba Sustainable Development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storage includes leak detection system	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Earthen storage has between 400 and 500 days storage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steel/concrete tank has between 250 and 500 days storage	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Manure storage facility meets required setbacks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Field storage (solid manure) locations are changed annually	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Field storage meets required setbacks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All fields to receive manure are soil tested annually for nitrate-N and Olsen phosphorus	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All manure is applied according to a registered manure management plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Licensed commercial manure applicator is used to apply manure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operator applies manure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Abandoned wells have been properly sealed	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Other:

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## 7.6 Building in Flood Areas:

The [Livestock Manure and Mortalities Management Regulation](#) prohibits an operator from constructing a manure storage facility within the boundaries of the 100-year flood plain elevation. [Manure storage facilities](#) that are constructed with protection for a flood-water level at least 0.6 meters higher than the 100-year flood water level are exempt.

The [Designated Flood Area Regulation](#) under *The Water Resources Administration Act* requires a Designated Flood Area Permit before a proposed structure (such as a barn) can be built within a Designated Flood Area

The flood protection level for structures located within a Designated Flood Area is the site specific design flood level plus freeboard, as provided by the Hydraulic Forecasting Branch of Manitoba Infrastructure. Contact the Hydrologic Forecasting Branch at (204) 945-2121 in Winnipeg; 1-800-214-6497 toll free, for more information.

The proposed site:

is

is not

located in a Designated Flood Area: [Upper Red River Valley Designated Flood Area](#) or [Lower Red River Designated Flood Area](#).

*Note:* At the time of permit issuance, verification is needed to ensure any proposed structure(s) are located within the 100-year flood plain elevation; or at an elevation set by Manitoba Infrastructure.

## 7.7 Watershed Management Planning

Integrated watershed management planning is a co-operative effort by local residents, stakeholders and governments to create a long term plan to manage water and land-based activities for watersheds.

What are the names of the watershed and sub-watershed where the livestock operation and the fields identified for manure application are located?

Name of watershed(s): Assiniboine

Name of sub-watershed(s): La Salle River Watershed - La Salle Redboine Conservation District

Name of Integrated Watershed Management Plan for the proposed project site, if applicable:

For more on Integrated Watershed Management Planning, call Watershed Planning and Programs at (204) 945-7408 in Winnipeg; 1-800-214-6497 toll free.

## 8.0 Manure

The [Livestock Manure and Mortalities Management Regulation](#) (M.R. 42/98) sets requirements for the use, management and storage of livestock manure in agricultural operations, to ensure it is handled in an environmentally sound manner. For more information on this, call Manitoba Sustainable Development at (204) 945-4384 in Winnipeg.

Improper storage, handling and/or land application of manure can contaminate water and soil, as well as potentially cause unacceptable odours for neighbours. The following is used to assess the manure management system.

### 8.1 Manure Type

The type of manure generated and used by the operation influences storage, handling and land application options available.

What type(s) of manure will be generated?

Solid

Semi-solid

Liquid

### 8.2 Manure Volume or Weight

Manure production can be estimated using the [Manure Production Calculator](#). The sizing of the manure storage is the responsibility of the operator and must be constructed in accordance with the [Livestock Manure and Mortalities Management Regulation](#). Design and construction of a manure storage facility is dependent on the type of structure; earthen manure storage facilities must have between 400 and 500 days capacity, a steel or concrete storage tank must have between 250 and 500 days capacity. This ensures the facility has sufficient capacity eliminating the need for winter application of manure.

What will be the total volume or weight of manure generated annually by the livestock operation?

Liquid volume: 3,854,066 Imp Gal over 400 days  
**AND/OR**  
 Solid volume: 5,392 cft

 *Manure Production Calculator attached*

### 8.3 Manure Storage Type and Capacity

The type of storage system used will affect the capacity requirements for the manure storage facility or field storage area.

Is the operation planning to construct, modify or expand a manure storage facility or use an existing manure storage facility?

Construct

Expand

Modify

Use existing

Not applicable

Animal Type (A)	Animal Sub-type (B)	References (C)	Daily Manure Production			Production Period (Days) (G)	Number of Animals (Capacity) (H)	Total Manure Volume (ft³) (F×G×H)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)					
			Manure Type (D)	Default Manure Production (ft³/animal/day) (E)	Operation Manure Production (ft³/animal/day) (F)									
Animal Type	Type of Operation		Yearly Manure Production			Production Period (Days) (G)	Number of Birds (Capacity)	Total Manure Volume (ft³) (F×G×H)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)					
			Default Manure Production (ft³/year/bird space)	Operation Manure Production (ft³/year/bird space)	Operation Manure Production (ft³/year/bird space)									
Dairy (milk cows <sup>4</sup> and associated livestock)	Free Stall	Table 6, pg 59, FPGs for Dairy 1995	Semi-Solid <sup>5</sup>	3.5					0.0					
			Solid	3.4					0.0					
	Tie Stall		Liquid <sup>5</sup>	3.5					0.0					
			Semi-Solid <sup>5</sup>	3.6					0.0					
	Loose Housing		Solid	3.6					0.0					
			Liquid <sup>5</sup>	3.0										
	Beef	Milking Parlour Manure and Washwater		Liquid	0.5									
		Beef cows including associated livestock		Solid	1.2									
		Backgrounder (200 day)	pg 117, FPGs for Hogs 1998	Solid	0.73									
		Summer pasture / replacement heifers		Solid	0.85									
Feeder cattle			Solid	1.1										
Sows - farrow to finish (234 - 254 lbs)			Liquid	2.3	2.3	400.00	600	552,000.00	3,438,960.0					
Pigs	Sows - farrow to wean (up to 11 lbs)	MAFRI website, FPGs for Pigs 2007	Liquid	0.8				0.0						
	Sows - farrow to nursery (51 lbs)		Liquid	1				0.0						
	Weanings, Nursery (11 - 51 lbs)		Liquid	0.1				0.0						
	Grower / Finisher (51 - 249 lbs)		Liquid	0.25				0.0						
Chickens	Type of Operation		Yearly Manure Production			Production Period (Days)	Number of Birds (Capacity)	Total Manure Volume (ft³) (F×G×H)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)					
			Default Manure Production (ft³/year/bird space)							Operation Manure Production (ft³/year/bird space)				
			Broilers - floor <sup>6</sup>	1.23						1.23	400	4,000	5,392	
			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>	2.33						2.33	400	20,000	51,068	318,156.7
			Layers - floor <sup>7</sup>	1.68										
			Layers - solid pack <sup>9</sup>											
			Pullets - cage <sup>6</sup>	0.71						0.71	400	20,000	15,562	96,949.0
Turkeys	Type of Operation		Default Manure Production (ft³/year/bird space)			Operation Manure Production (ft³/year/bird space)								
			Pullets - floor <sup>6</sup>	0.75										
			Pullets - solid pack <sup>9</sup>											
			Broilers <sup>6</sup>	2.83										
Heavy toms <sup>6</sup>	5.58													
Heavy hens <sup>6</sup>	3.32													
							5,392	3,854,066						

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 250
- 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

What type of [manure storage](#) will be used by the operation?

- |   |  |
|---|--|
| <input type="checkbox"/> Concrete tank(s) manure storage facility   | <input type="checkbox"/> Molehill manure storage facility            |
| <input checked="" type="checkbox"/> Earthen manure storage facility | <input type="checkbox"/> Steel tank(s) manure storage facility       |
| <input type="checkbox"/> Engineered solid manure storage facility   | <input type="checkbox"/> Under-barn concrete manure storage facility |
| <input type="checkbox"/> Field storage                              |  |

If the proposed operation or expansion will utilize an existing manure storage facility for the new manure, indicate the construction permit number or facility registration number:

LR-015-003

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Provide the dimensions of the existing and/or proposed manure storage facilities that will be used to store manure from the proposed operation or expansion. (See [Existing and Proposed Manure Storage Facility Dimensions Table](#).)

*Existing and Proposed Manure Storage Facility Dimensions Table attached*

If an existing manure storage facility that will be used to store any of the manure from the proposed expansion has a leak detection system (monitoring wells or sump pit), annual sampling and reporting to Manitoba Sustainable Development is required. Has the system been sampled and results submitted to Manitoba Sustainable Development?  Yes

No

Not applicable

If yes, please indicate year of last submission: 2017

If a manure storage facility is proposed in a geologically sensitive area, a leak detection system may be required.

For more information on obtaining a manure storage facility permit, please contact Manitoba Sustainable Development, Environmental Approvals Branch at (204) 945-5081.

#### 8.4 Odour Control Measures (project site)

Barns and manure storage facilities can be significant sources of livestock odours. The use of manure storage covers and shelterbelts can reduce this, particularly for neighbours in the vicinity of the operation.

What odour control measures are you planning to use?

Manure storage cover:

- Yes  No  Not Applicable

If yes, type of cover: \_\_\_\_\_

Shelterbelt planting:

- Yes  No  Existing shelterbelt



## 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	240 ft	415 ft	16 ft	3 ft	1:3.5	1:4.5	590
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Circular Tank	Diameter	Height	Depth (Above Grade)				
	ft	ft	ft				

Permit/Registration # \_\_\_\_\_ LR-015-003 \_\_\_\_\_

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

**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)*.**



Other measure (specify):

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## 8.5 Manure Treatment

### Pig operations:

Under *The Environment Act*, the director must not issue a permit for the modification, expansion, or construction of a manure storage facility accommodating an increase in the number of animal units for **pigs**, unless the manure is treated using anaerobic digestion or another environmentally sound treatment that is similar to, or better than, anaerobic digestion, according to Manitoba Sustainable Development. Environmentally sound treatment has been defined in the Hog Production Pilot project. For more information on new or expanding hog operations and the requirements of the Hog Production Pilot project, please contact the Manitoba Pork Council.

Under the Hog Production Pilot project, in addition to existing regulatory requirements, new and expanding pig operations must:

- Subject the manure to treatment using anaerobic digestion or mechanical or gravity separation including multi-celled manure storage structures and settling tanks;
- Have access to sufficient suitable land to accommodate all of the phosphorus generated by the operation;
- Maintain soils below 60 ppm Olsen P; and
- Inject or immediately incorporate pig manure on tilled land. Perennial forages, in-season applications and no-till lands are excluded.

New and expanding pig operations should also consider odour control practices.

If this Site Assessment is for a **pig** operation, does your proposal meet all the criteria outline in the Hog Production Pilot Protocol?

Yes

No

If this Site Assessment is for a **pig** operation, have you included a letter from the Manitoba Pork Council under the Hog Production Pilot Protocol?

Yes

No

Letter from Manitoba Pork Council attached (if applicable)

### Manure treatment:

Is manure treatment proposed for the operation?

Yes

No

If yes, please describe treatment process, including intended end use of treated manure:

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Some manure treatment systems will trigger the requirement for an Environment Act License depending on the type of treatment or intended use of the treated products. The requirement for a license is determined by Manitoba Sustainable Development during their review of the permit application for the construction, modification or expansion of a manure treatment facility.

If treated manure is directed to a retailer, additional approvals may be required in advance of establishing the treatment process. Producers should note that no discharge or burning of treated manure products is allowed.

Manitoba Sustainable Development may require additional supporting documentation to be completed by the operator with respect to the treatment facility. Please contact (204) 945-4384 to determine what information will be required.

#### 8.6 Manure Application Method

The [Livestock Manure and Mortalities Management Regulation](#) requires the registration of annual manure management plans for new or expanding operations with 300 Animal Units or more.

Does the operation currently file an annual [Manure Management Plan](#) (MMP) with Manitoba Sustainable Development?

Yes

N/A (new operation or existing operation <300 AU currently)

No

If yes, please indicate most recent MMP Registration #: 2017-439

Manure application methods and the season in which manure is applied affect odour, nutrient availability, crop response, land base requirements and the risk of water contamination.

Proposed application method:

Broadcast

Injection

Broadcast and incorporate within 48 hours

### 8.7 Land Available for Manure Application

Using the [Manure Application Field Characteristics Table](#) provide the information requested.

Total land available for manure application: 2452 acres

#### Suitable Land:

Sufficient suitable land must be available for all of the manure generated by the operation that is to be land applied. Suitable land can be owned, leased or under agreement.

Under the [Livestock Manure and Mortalities Management Regulation](#) and the [Nutrient Management Regulation](#), application of nutrients is not permitted on Agriculture Capability Class 6, 7 and unimproved organic soils (Nutrient Management Zone 4) and within Nutrient Buffer Zones. In addition, only fields with less than 60 parts per million (ppm) Olsen phosphorus (P) in the top six inches (15 centimeters) of soil will be considered suitable.

The Nutrient Buffer Zones and manure application setback requirements are outlined in the Nutrient Management Regulation (62/2008) and the Livestock Manure and Mortalities Management Regulation (42/98). They have been consolidated in the [Setback Requirements from Water Features Table](#).

Have the setback areas for all water features been observed and excluded from land base calculations for this operation?

Yes

No

Total suitable area available for manure application: 2383 acres

For all suitable lands, copies of soil test reports that are no more than 12 months old and that demonstrate that soil phosphorus levels are below 60 ppm Olsen P in the top six inches (15 centimeters) of soil must be included with this submission.

*Manure Application Field Characteristics Table attached*

*Soil test reports for the required land base for manure application attached*

### 8.8 Land Required for Manure Application

Long term land base requirements for manure application are calculated based on estimates of the quantity of nutrients (nitrogen and phosphorus) excreted by livestock and the utilization or removal of nutrients by the proposed crops.

The quantity of nitrogen and phosphorus excreted by the livestock depends on the type, number and size of livestock, the quantity and availability of nitrogen and phosphorus fed to the livestock, the amount retained by the livestock and the amount contained in milk and eggs.

The utilization of nitrogen and removal of phosphorus by crops depends on the crops grown and the historical crop yield averages. (See [Crop Rotation Table](#)).





**MANURE APPLICATION FIELD CHARACTERISTICS TABLE**

Field	Legal Description	Rural Municipality	O/C/I/A	Total Acreage	Setbacks, including features	Net Acreage for Manure Application	Agriculture Capability Class and Subclass	Soil Phosphorus (ppm Olsen P) 0-6 inches	Development Plan Designation	Zoning
1	SW 29-10-3W	Carlier	O	125	Property line and river course	122	2W-3W	22	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
2	NW 21-10-3W	Carlier	O	140	Property line and river course	139	2W, 3W, 3NW	31	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
3	NE 16-10-3W	Carlier	O	160	Property line	158	2W, 3W, 3NW	13	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
4	E1/2 19-10-3W	Carlier	O	320	Property line	316	2W, 3W, 3NW	31	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
5	SE 1/2 NE 21-10-3W	Carlier	O	240	Property line and river course	237	2W, 3W, 3NW	27	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
6	SE 1/2 NE 27-10-3W	Carlier	O	240	Property line and river course	236	2W, 3W, 3NW	44	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
7	SE 17-10-3W	Carlier	O	160	Property line and drain	150	2W, 3W, 3NW	14	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
8	N1/2 29-10-3W	Carlier	O	350	Property line	346	2W, 3W	28	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
9	SW 1/2 NW 22-10-3W	Carlier	O	237	Property line and river course	231	3W-3NW	14	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
10	SE 20-10-3W	Carlier	O	160	Property line & Bush	138	2W, 3W, 3NW	22	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
11	SW 20-10-3W	Carlier	O	160	Property line	158	2W, 3W, 3NW	26	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
12	SW 28-10-3W	Carlier	O	160	Property line and river course	152	2W-3W	49	BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
13										
14										
15										
16										
17										
18										
19										
20										

**Total Net Acreage for Manure Application: 2,383**

- 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).

MANURE APPLICATION FIELD CHARACTERISTICS TABLE



Field	Legal Description	Rural Municipality	O/C/L/A	Total Acreage	Setbacks, including features	Net Acreage for Manure Application	Agriculture Capability Class and Subclass	Soil Phosphorus (ppm Olsen P) 0-6 inches	Development Plan Designation	Zoning
1	N1/2 17-10-3W	Carlier	O	320	Property line	316	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
2	S1/2 33-1-3W	Carlier	L	262	Property line	256	2W and 3W		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
3	N of NE 23-9-2W	Macdonald	L	25	Property line and provincial road	24	2W and 3W		BY-LAW NO. 210: GZ	BY-LAW NO. 1526: AG
4	NW 23-9-2W	Macdonald	L	40	Property line and bush	39	2W		BY-LAW NO. 210: GZ	BY-LAW NO. 1526: AG
5	NE 6-10-1W	Carlier	O	160	Property line	158	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
6	SE+NE1/2 7-10-1W	Carlier	O	240	Property line and watercourse	237	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
7	NW 26-9-2W	Macdonald	O	105	Property line	103	2W, 3W and 2D		BY-LAW NO. 210: GZ	BY-LAW NO. 1526: AG
8	SE 6-10-1W	Carlier	O	147	Property line	145	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
9	S of NE 23-9-2W	Macdonald	L	117	Property line and provincial road	115	2W and 3W		BY-LAW NO. 210: GZ	BY-LAW NO. 1526: AG
10	NE 20-10-3W	Carlier	O	105	Property line and fence/road easement	102	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
11	NW 20-10-3W	Carlier	O	160	Property line	158	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
12	NE 32-10-2W	Carlier	L	130	Property line and dump site	128	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
13	NW 28-10-3W	Carlier	O	160	Property line	158	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
14	N1/2 13-9-3W	Grey	O	260	Property line and provincial road and dump site	255	2W and 3W		BY-LAW NO. 299: A	BY-LAW NO. 503: AG
15	N1/2 13-9-3W	Grey	O	320	Property line	316	2W and 3W		BY-LAW NO. 299: A	BY-LAW NO. 503: AG
16	SE 34-9-1E	Macdonald	L	156	Property line and provincial road	154	2W, 3W and 3NW		BY-LAW NO. 210: GZ	BY-LAW NO. 1526: AG
17	NE 27-9-1E	Macdonald	L	152	Property line and provincial road	150	2W, 3W and 3NW		BY-LAW NO. 210: GZ	BY-LAW NO. 1526: AG
18	NE 4-11-3W	Carlier	O	160	Property line	158	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
19	SE 4-11-3W	Carlier	O	160	Property line	158	2W, 3W and 3NW		BY-LAW NO. 1-2016: AG	BY-LAW NO. 1620-11: AG
20	NE1/2 19-9-3W	Grey	O	80	Property line	78	2W and 3W		BY-LAW NO. 299: A	BY-LAW NO. 503: AG

Total Net Acreage for Manure Application:

3,210

*Additional acres available but not qualified by soil test*

- 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).





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	NE 18-9-3W	Grey	O	120	Property line	118	2W and 3W		BY-LAW NO. 259: A	BY-LAW NO. 503: AG
2	N1/2 20-9-3W	Grey	O	320	Property line and residential	310	2W and 3W		BY-LAW NO. 259: A	BY-LAW NO. 503: AG
3	NW+SW 18-10-3W	Carlier	L	120	Property line	118	2W, 3W, 3NW		BY-LAW NO. 1, 2016: AG	BY-LAW NO. 1620-11: AG
4										
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16										
17										
18										
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20										
Total Net Acreage for Manure Application:						546				

*Additional acres available but not qualified by soil test*

- 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). Enter the total acreage for the parcel.
- D. 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).
- E. 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.
- F. Enter the agriculture capability class and subclass ratings for the acreage available for manure application.
- G. 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.
- H. Indicate the Development Plan and its by-law number in addition to the map designation for each field (ex. By-law #1/2008: AG).
- I. 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).
- J.

"Certain Areas":

The [Livestock Manure and Mortalities Management Regulation](#) requires the proponent demonstrate sufficient land is available, to the satisfaction of the director, in order to implement an appropriate manure management plan before Manitoba Sustainable Development will issue a permit for a manure storage facility or confined livestock area. Sufficient suitable land must be available for the manure nitrogen and phosphorus that will land applied.

"Certain Areas" are defined by the [Livestock Manure and Mortalities Management Regulation](#) (M.R. 42/98) as areas where the amount of phosphorus in the manure produced annually by livestock in an area of not less than 93.24 km<sup>2</sup> is greater than two times the annual crop removal rate of P<sub>2</sub>O<sub>5</sub> in that area.

In "certain areas" it is Manitoba Sustainable Development's policy to consider a manure storage facility permit if the operation can demonstrate it has access to sufficient suitable land, within a reasonable distance<sup>10</sup>, to apply manure at a rate equivalent to one times the crop removal rate of phosphorus. In areas which are not considered to be "certain areas", Manitoba Sustainable Development may consider a manure storage facility or confined area permit, subject to all applicable legislation, if the operation demonstrates it has access to sufficient suitable land to apply manure at a rate equivalent to two times the crop removal rate of phosphorus.

Currently the rural municipalities of Hanover and La Broquerie are considered to be "certain areas". A livestock operation is considered to be located within a "certain area" if any part of the operation is located within the defined area. This may include, but not limited to, barn(s), confined livestock area(s), field storage location(s), manure storage facility(ies), and/or spread field(s).

is the livestock operation located in "certain areas" (i.e. Hanover or La Broquerie)?  
 Yes  
 No

Land Base Requirement Calculation:

it is recommended that proponents use Manitoba Agriculture's Land Base Calculator to calculate the minimum area required for manure application and contact Manitoba Agriculture at (204) 945-3869 in Winnipeg for assistance with the land base calculator prior to submitting their site assessments.

*Table 8-1: Land Base Requirements*

Total acres required for crop utilization of the manure	1338	acres
Total acres required for two times crop P <sub>2</sub> O <sub>5</sub> removal <sup>a</sup>	1539	acres
Total acres required for one times crop P <sub>2</sub> O <sub>5</sub> removal <sup>b,c</sup>	3077	acres

<sup>a</sup>All operations must demonstrate sufficient suitable land for crop N utilization and two times crop P<sub>2</sub>O<sub>5</sub>.

<sup>b</sup>Due to high livestock density and reduced land availability for manure application, all livestock operations proposed in "certain areas" (i.e. Hanover and La Broquerie) must demonstrate

Therefore, to remain environmentally sustainable over a long-term planning horizon of 25 years or more, phosphorus applications from applied manure and other nutrient sources such as commercial fertilizers must be balanced with crop removal to avoid further build-up in soils. Consequently, sufficient land must be available in relatively close proximity to the operation so that manure can be applied at no more than one times the crop removal rate.

It should be noted that soil-test phosphorus levels of 60 ppm Olsen P or greater are agronomically very high and at these levels most crops will not benefit from additional phosphorus beyond starter phosphorus. As phosphorus levels build up in soils, the concentration of phosphorus in runoff to waterways increases.

Over the short-term for fields with low phosphorus, regulations allow manure to be applied to meet the nitrogen requirements of the crop. This often results in over-application of phosphorus and a build-up of phosphorus in soils. When soil test phosphorus levels reach 60 ppm Olsen P, manure application rates must consider how much phosphorus will be removed in the harvested portion of the crop. At 60 ppm, but less than 120 ppm Olsen P, the amount of phosphorus that can be applied cannot exceed twice (two times) what the crop can remove in order to slow the build-up of soil phosphorus. Once soil test phosphorus levels reach 120 ppm Olsen P, applications of phosphorus are restricted to no more than what the crop can remove (one times) in order to stop further soil test phosphorus build-up. At 180 ppm Olsen P, no additional phosphorus may be applied.

The Government of Manitoba has included phosphorus as a nutrient by which applications of manure, synthetic fertilizer and municipal waste sludge to agricultural lands may be limited.

**8.10 Long-Term Environmental Sustainability**

- has not been identified
- has been identified to meet nitrogen utilization
- has been identified for two times the crop removal rate of phosphorus
- has been identified for one times the crop removal rate of phosphorus (for pig operations and operations in "certain areas" [i.e. Hanover and La Broquerie])

By comparing the total suitable land available for manure application with the land required for manure application, state whether sufficient suitable land for manure application:

**8.9 Land Base Requirement Summary**

- Crop Rotation Table attached*
  - Manitoba Agriculture's Land Base Calculator attached*
- Under the Hog Production Pilot Project, pig operations must also demonstrate enough land to sufficient suitable land to balance phosphorus over the long-term (one times crop P<sub>2</sub>O<sub>5</sub>).  
 balance phosphorus over the long-term (one times crop P<sub>2</sub>O<sub>5</sub>).

**CROP ROTATION TABLE**



A	B	C	D	E
Expected Crops in the Rotation	Acres	Historical Yield	Units	Source of Yield Information
Canola	261	35	bu/acre	MASC
Spring Wheat	158	49.9	bu/acre	MASC
Corn	316	113.1	bu/acre	MASC
Barley	152	76.7	bu/acre	MASC
Winter Wheat	733	79	bu/acre	MASC
Soybeans	763	38.8	bu/acre	MASC
<b>Total Net Acreage for Manure Application</b>	<b>2,383</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. The total of column B should add up to Total Net Acreage for Manure Application provided in the Manure Application Field Characteristic Table.
- C. 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.



**Colour Conventions:**

Farm specific data can be entered in the yellow cells of each tab. Where appropriate, default values have been provided but can be changed.

Calculated values are shown in the green cells of each tab.

The land base requirements for nitrogen (N) and phosphorus (P2O5) are provided in the amber cells on tab 4.

**Data Entry and Tab Information:**

Enter all of the livestock for your farm and associated data in the yellow cells under tabs 1a to 1e.

Enter all of the crop rotation data on tab 2. Long-term crop yield averages using MASc records are required for Provincial Technical Review Site Assessments. Total nitrogen (N) and total phosphorus (P2O5) excreted by the livestock are summarized on tab 3. Nutrient excretion, crop nutrient use and acres required for nitrogen (N) and phosphorus (P2O5) are summarized on tab 4.

**For assistance, contact:**

Clay Sawka, Nutrient Management Specialist, MAFRD, (204) 750-3066  
Petra Loro, Livestock Environment Specialist, MAFRD, (204) 945-3869

Last revised January 27, 2016

Pig/Operation Type	Storage Type	Ventilation	Annual Numbers (Pitches)	Weight In (lb)	Weight Out (lb)	Average Annual Yr (lb)	Days on Feed per Cycle (days)	Number of Cycles for the Place per Year (days)	Feed Consumed Per Pig Per Day (kg/day)	Protein %	N Excreted Per Herd Adjusted for Storage N (lb/yr/herd)	Phosphorus Content of Feed (M)	P2O5 Excreted Per Herd Per Year (lb/yr/herd)
Gestating Sow	Liquid Uncovered Earthen	30%	447	630	539	121	3	2.3	14%	0	0.53%	0	
Nursing Sow	Liquid Uncovered Earthen	30%	539	539	539	21	15.2	6.5	20%	0	0.53%	0	
Nursing Litter	Liquid Uncovered Earthen	30%	3.1	13.6	6	21	15.2	0	n/a	0	0	0	
Live Cull Sow	Liquid Uncovered Earthen	30%	630	630	630	14	26.1	2.3	14%	0	0.46%	0	
Bred Gill	Liquid Uncovered Earthen	30%	340	447	384	121	3	2.3	14%	0	0.53%	0	
Gillie (Purchased)	Liquid Uncovered Earthen	30%	290	340	315	28	13.0	3.2	16%	0	0.46%	0	
Boars (Purchased)	Liquid Uncovered Earthen	30%	270	680	465	365	1	2.5	14%	0	0.46%	0	
Weanlings	Liquid Uncovered Earthen	30%	13.6	61.6	36	52	6.9	0.7	20%	0	0.54%	0	
Growers/Finishers	Liquid Uncovered Earthen	30%	61.6	280	171	112	3	2.8	16%	0	0.46%	0	
Sows, farrow to 6.2 kg	Liquid Uncovered Earthen	30%	n/a	n/a	n/a	305	1	n/a	n/a	0	n/a	0	
Sows, farrow to 28 kg	Liquid Uncovered Earthen	30%	n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0	
Sows, farrow to finish	Liquid Uncovered Earthen	30%	600	n/a	n/a	365	1	n/a	n/a	170173	n/a	89992	

Last Revised April 13, 2016

Note: Broiler capacity based on 1 flock of 4000 birds per year for colony's own use.

Species / Commodity	Type of Operation	Storage Type	Volatilization	Bird Places	Weight in (lb)	Weight Out (lb)	Average Weight (lb)	Days on Feed	Cycles per year	N Excreted lb/brook/yr	P205 Excreted lb/brook/yr
Chickens	Broilers	Liquid Uncovered Ea. hen	30%	4000	0.05	4.36	2.20	33	1	185	185
Chickens	Broiler Breeder Pullets	Field Storage	40%	0	0.05	4.40	2.23	140	2	0	0
Chickens	Broiler Breeder Hens	Field Storage	40%	0	4.40	8.67	6.53	273	1	0	0
Eggs	Layer Pullets	Liquid Uncovered Ea. hen	30%	20000	0.05	3.04	1.94	133	2	6321	6203
Eggs	Layer Hens	Liquid Uncovered Ea. hen	30%	20000	3.03	3.74	3.39	355	1	19133	18176
Eggs	Broiler Pullets	Liquid Covered	10%	0	0.05	3.04	1.94	133	2	0	0
Eggs	Broiler Hens	Liquid Covered	10%	0	3.03	3.74	3.38	351	1	0	0
Turkey	Broiler Hens (0-9 wks)	Field Storage	40%	0	0.06	12.39	6.22	63	4	0	0
Turkey	Hens (0-11 wks)	Field Storage	40%	0	0.06	16.46	8.26	77	3.5	0	0
Turkey	Heavy Hens (0-14 wks)	Field Storage	40%	0	0.06	21.19	10.62	96	3	0	0
Turkey	Light Toms (0-12 wks)	Field Storage	40%	0	0.06	21.19	10.62	84	3	0	0
Turkey	Toms (0-13 wks)	Field Storage	40%	0	0.06	26.84	13.45	91	2.5	0	0
Turkey	Heavy Toms (0-15 wks)	Field Storage	40%	0	0.06	30.29	15.18	105	2.5	0	0
Turkey	Breeding Hens (0-30 wks)	Field Storage	40%	0	0.06	26.95	13.51	210	1	0	0
Turkey	Breeding Hens (30-60 wks)	Field Storage	40%	0	26.95	24.95	25.95	210	1	0	0
Turkey	Breeding Tom Grower (0-18 wks)	Field Storage	40%	0	0.06	33.92	16.99	126	2	0	0
Turkey	Breeding Tom Grower (0-30 wks)	Field Storage	40%	0	0.06	50.69	25.47	210	1	0	0
Turkey	Breeding Tom (30-60 wks)	Field Storage	40%	0	50.69	61.86	56.38	210	1	0	0

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

Species	Animal Category/Operation type	N	(lb/year)	P205	
Pigs	Gestating Sow	0	0	0	
	Nursing Sow	0	0	0	
	Nursing Litter	0	0	0	
	Live Cull Sows	0	0	0	
	Bred Gilts	0	0	0	
	Gilts	0	0	0	
	Boars	0	0	0	
	Weanlings	0	0	0	
	Growers/finishers	0	0	0	
	Sows, farrow to 5 kg	0	0	0	
	Sows, farrow to 23 kg	0	0	0	
	Sows, farrow to finish	0	170173	89992	
Beef	Mature Cows (>2 years old)	0	0	0	
	Bred Heifer (14 mo - 2 years)	0	0	0	
	Replacement Heifers (7 mo-14 mo)	0	0	0	
	Unweaned Calves (0-7 mo)	0	0	0	
	Bulls	0	0	0	
	Mature Cows and Bred Heifers, plus associated livestock	0	0	0	
	Feedlot Cattle - long keep	0	0	0	
	Feedlot Cattle - short keep	0	0	0	
	Backgrounders - pasture	0	0	0	
	Backgrounders - confined	0	0	0	
Dairy	Lactating cow	0	0	0	
	Dry cow	0	0	0	
	Calf, 0-3 months	0	0	0	
	Calf, 4-13 months	0	0	0	
	Replacements, >13 months	0	0	0	
	Mature Cows, plus assoc livestock	0	0	0	
	Sheep	Ewes	0	0	0
		Replacement Ewes	0	0	0
		Rams	0	0	0
		Lambs	0	0	0
Ewes, plus assoc livestock		0	0	0	
Feeder		0	0	0	
Chickens	Broilers	186	195	186	
	Broiler Breeder Pullets	0	0	0	
	Broiler Breeder Hens	0	0	0	
Layers	Layer Pullets	6203	6321	6203	
	Layer Hens	18778	19133	18778	
	Breeder Pullets	0	0	0	
	Breeder Hens	0	0	0	
Turkeys	Broiler Hens (0-9 wks)	0	0	0	
	Hens (0-11 wks)	0	0	0	
	Heavy Hens (0-14 wks)	0	0	0	
	Light Toms (0-12 wks)	0	0	0	
	Toms (0-13 wks)	0	0	0	
	Heavy Toms (0-15 wks)	0	0	0	
	Breeding Hen Growers (0-30 wks)	0	0	0	
	Breeding Hens (30-60 wks)	0	0	0	
	Breeding Tom Grower (0-18 wks)	0	0	0	
	Breeding Tom Grower (0-30 wks)	0	0	0	
Breeding Tom (30-60 wks)	0	0	0		
<b>Total</b>		<b>195823</b>	<b>195823</b>	<b>115160</b>	

Nutrients Excreted		lbs
Nitrogen		195823
P205		115160
Crop Nutrient Use		lb/ac
Nitrogen Uptake		146.4
P205 Removal		37.4
Land Base Requirements		acres
Acres for Nitrogen Uptake		1338
Acres for 2 x P205 Removal		1539
Acres for 1 x P205 Removal		3077

3077

I acknowledge that up to \_\_\_\_\_ acres (one times crop P<sub>2</sub>O<sub>5</sub> removal from table above) may be required for the long term environmental sustainability of the operation.

## 9.0 Mortalities (Dead Animal) Disposal

The [Livestock Manure and Mortalities Management Regulation](#) establishes requirements for the use, management and storage of livestock mortalities in agricultural operations. This helps ensure livestock mortalities are handled in an environmentally sound manner. Winter application, between November 10 of one year and April 10 of the following, of composted mortalities is prohibited.

Type of Disposal:

- Rendering
- Composting
- Burial
- Incineration (in approved incinerator only)

Does the proposal include a permanent site for composting mortalities?  
 Yes  No

If yes, a permit to construct a manure treatment facility is required if the composting process utilizes a substantial amount of manure (>15% by weight) as a primary substrate. Please contact Manitoba Sustainable Development at (204) 945-5081 for more information.

## 9.1 Mass Mortalities

A plan for mass mortalities is in place

What steps will be taken in the case of mass mortalities?

Manitoba Sustainable Development will be contacted in the event of mass mortalities

in the future. Burial on site or removal to an approved landfill site will be the preferred

method of disposal.



**10.0 Project Site Description: Land Use Planning Considerations**

For assistance contact your [Community and Regional Planning Regional Office](#).

**10.1 Development Plan and Zoning Bylaw**

The Planning District or Municipal Development Plan and Zoning By-law adopted under [The Planning Act](#), set policy and regulations for the use and development of land. A proposed livestock operation must comply with the requirements of both documents. In the absence of such documents, the [Provincial Planning Regulation](#) under [The Planning Act](#) applies.

**10.2 Development Plan**

Every Development Plan must contain a livestock operation policy (LOP) that identifies areas where new or expanded livestock operations may be allowed. It must also set general standards for the location and setback of livestock operations. Identifying the Development Plan's land use designation and policies (for the planning district or municipality that affect the site) will help confirm the project site's compliance. The Development Plan designations for the spread fields (if something other than agricultural) will indicate the potential loss of the fields in the future due to possible development.

**Table 10-1: Development Plan**

White Horse Plains Planning District	1-2016	Rural General Policy Area	3.1.18	Livestock operation policies – quote supportive policy numbers	Other Development Plan policies – quote supportive policy numbers	1.3.2 Goal 2, 3.1.8, 3.1.9	Non-supportive Development Plan policies
--------------------------------------	--------	---------------------------	--------	--	---	----------------------------	--

- The Development Plan livestock operation policies support the size and location of the proposed operation.
- The Development Plan designations support the long term use of the proposed spread fields.

**10.3 Zoning By-law**

Identifying the zoning for the project site, the proposed spread fields and the related zoning provisions, helps determine the project's compliance and the minimum separation distances needed between the operation and property boundaries and other natural features and land uses. The Zoning By-law contains specific regulations that govern location and setback of livestock operations.

Identify the minimum project site requirements stated in the Zoning By-law.

**Table 10-2: Zoning By-law**

Minimum Zoning By-Law Site Requirements	Project Site Dimensions	Minimum Site Area	Minimum Site Width	Minimum Front Yard	Minimum Side and Rear Yard
80 acres	160 acres	2,640 ft	600 ft	450 ft	1,446 ft Side & 1,876 ft Rear
				125 ft	50 ft

If any project (front, side or rear) yard site dimensions are less than the Zoning By-law minimum, a Variation Order from the Municipality will be required.

**10.4 Separation Distances (Zoning By-law or Provincial Planning Regulation)<sup>11</sup>**

Using the proposed size of the operation (see [Animal Units Calculator](#)) and the type of animal housing and manure storage facility, complete the following table.

Indicate the distance from:

- A. earthen manure storage facility OR B. feedlot and
- C. animal confinement facility OR D. non-earththen manure storage facility...

**Table 10-3: Separation Distances**

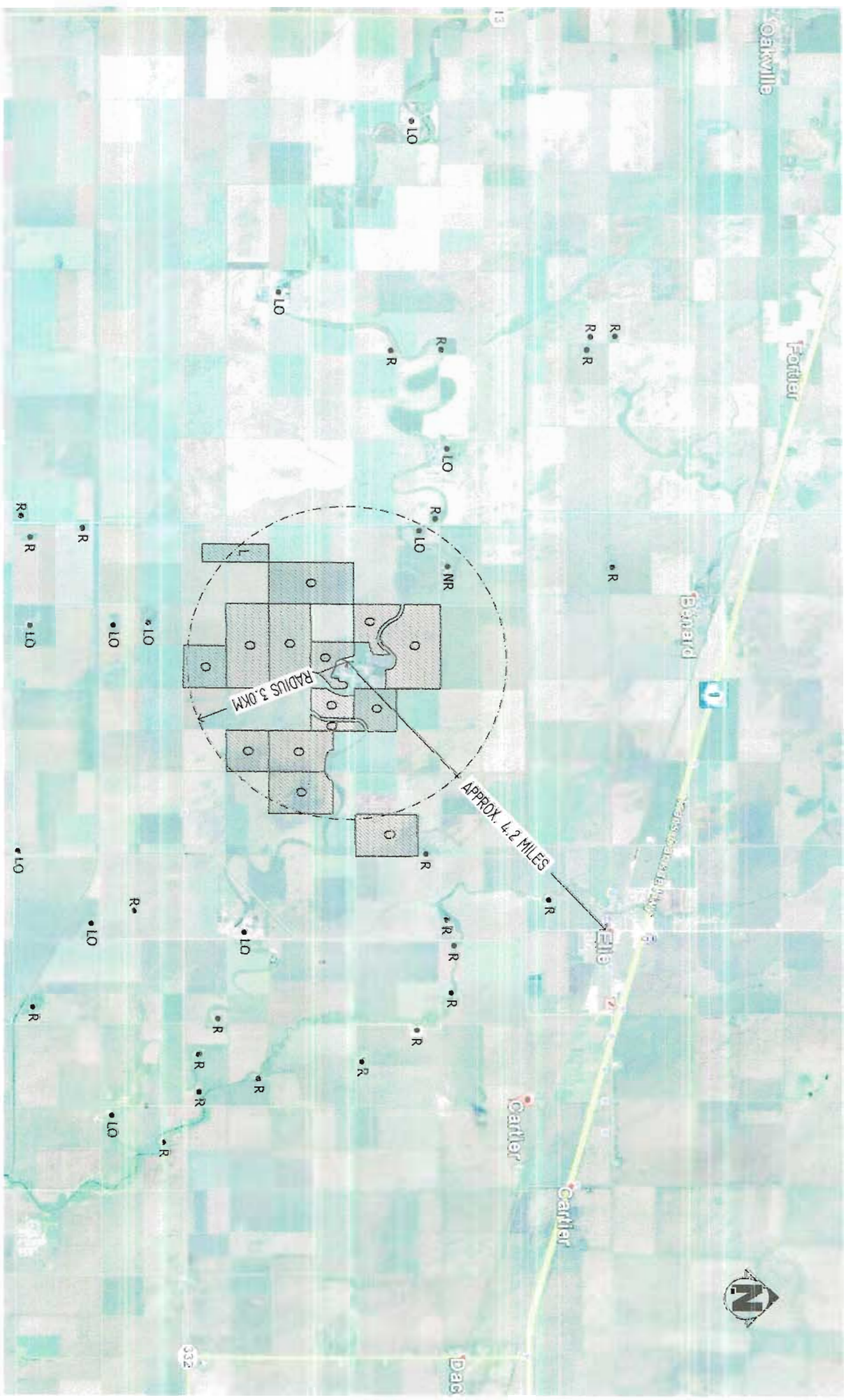
If land use feature is less than the minimum separation distance required in the Zoning By-law or Provincial Planning Regulation	Provide actual distance	Provide location or name of feature (e.g. Red River)	Indicate minimum separation distance required in the Zoning By-law or Provincial Planning Regulation (if applicable)		Check appropriate box(es)		... to the following land use features (if applicable)								
			<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> C <input type="checkbox"/> D	Residence/dwelling	Designated area <sup>12</sup> (non-agricultural)		Livestock operation	Other significant features/land uses						
Residence in SE 31-10-3W	7,720 ft		<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> C <input type="checkbox"/> D	2,264 ft	1,132 ft	Residence/dwelling	9,055 ft	6,037 ft	21,757 ft	Elie, Manitoba				
SW-36-10-4W	15,252 ft		<input type="checkbox"/> A <input type="checkbox"/> B	<input type="checkbox"/> C <input type="checkbox"/> D	N/A	N/A	Livestock operation	N/A	N/A	N/A					

In cases where minimum separation distances are not stated in the Zoning By-law or Development Plan, the minimum separation distances in the Provincial Planning Regulation apply. If any separation distance is less than the Zoning By-law minimum, a Variation Order will be required from the Municipality.

Indicate on a Land Use and Spread Field Map (See [Land Use and Spread Field Map Example](#)):

- a) location of the project site, location and ownership of spread fields
- b) land uses and significant features including dwellings
- i) within a 1 mile radius of the project site
- ii) within and adjacent to each spread field.





**LEGEND:**

- LO - LIVESTOCK OPERATIONS
  - 0 - SPREAD FIELDS (OWNED)
  - L - LEASED/AGREEMENT
  - R - RESIDENCE
  - NR - NEAREST NEIGHBOR (1.70MILES)
  - 3KM NOTIFICATION AREA
- FOR THE PUBLIC CONDITIONAL USE HEARING



PROJECT NAME WALDHEIM COLONY POULTRY BARN		BUILDING AREA N/A	
SHEET TITLE LAND USE & SPREAD FIELD MAP NE 20-10-3W		DRAWN BY R. FLORES SOUTH-MAN ENGINEERING	
DATE DRAWN MARCH 2017	DRAWING SCALE N.T.S.	SHEET NUMBER SP-2	

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10.5 Buffer Area from Crown Lands

Indicate in the table below if the proposed [livestock operation](#) (project site and spread fields) is located within 1 mile of any designated parcel of Crown land which would include: Provincial Park, Wildlife Management Area, Ecological Reserve, Provincial Forest, and Wildlife Refuge/Sanctuary. If applicable, also indicate the name of the Designated Crown Land.

Please complete the following table.

Table 10-4: Buffer Areas

Type of Designated Crown Land	Distance from perimeter of Designated Crown Land	Name of Designated Crown Land (e.g. Spruce Woods Provincial Park)
Provincial Park	<input type="checkbox"/> 1 mile or less <input type="checkbox"/> Greater than 1 mile	Beaudry Provincial Park
Wildlife Management Area	<input type="checkbox"/> 1 mile or less <input type="checkbox"/> Greater than 1 mile	N/A
Ecological Reserve	<input type="checkbox"/> 1 mile or less <input type="checkbox"/> Greater than 1 mile	N/A
Provincial Forest	<input type="checkbox"/> 1 mile or less <input type="checkbox"/> Greater than 1 mile	N/A
Wildlife Refuge/Sanctuary	<input type="checkbox"/> 1 mile or less <input type="checkbox"/> Greater than 1 mile	N/A

If any Crown land parcel is to be utilized as part of the proposed planned works where the proposed works will involve the installation of infrastructure (e.g., pipe/hose) that will be placed on the surface of the land, the appropriate Crown land disposition may be required (e.g., General Permit/Work Permit<sup>14</sup>). The proponent is encouraged to contact the Regional Lands Manager with Manitoba Sustainable Development for further discussion. Contact the Crown Lands and Property Agency at <http://clp.gov.mb.ca> or toll free at 1-866-210-9589 or 1-204-239-3510.

10.6 Setback Distances

Use the following table to indicate setback distances, as required under the [Livestock Manure and Mortalities Management Regulation \(M.R. 42/98\)](#).

**Table 10-5: Setback Distances**

Feature	Structures	Minimum setback distance required (m)	Actual Setback distance (m)	Provide location or name of feature (e.g. Red River)
Surface watercourses, sinkholes, spring or well	Manure storage facility	100 m	240 m	Scott Coulee to N watercourse
	Field storage	100 m	100 m	Scott Coulee watercourse
	Composting site	100 m	120 m	Scott Coulee watercourse to SE
	Confined livestock area	100 m	N/A	N/A
Property Line	Manure storage facility	100 m	275 m & 320 m	N and E property lines, respectively
	Composting site	100 m	370 m & 211 m	S and E property lines, respectively
	Confined livestock area	100 m	N/A	N/A

If any setback distances have not been met, please provide explanation below:

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11.0 Truck Haul Routes and Access Points<sup>15</sup>

One consideration with new or expanding livestock operations is the potential impact on existing public roads (municipal and provincial), access and the need for improvements or mitigation. Complete the following table.

Table 11-1: Truck Haul Routes and Access Points

Vehicle Type	Estimated Average Number of Times per Day Accessing		Provincial Trunk Highway (PTH)	Provincial Road (PR)	Access from PTH/PR onto site will mainly require a Left or Right Hand Turn		Access onto PTH/PR from site will mainly require a Left or Right Hand Turn		Provincial Trunk Highway (PTH)	Provincial Road (PR)	Tractor Trailer	Other, specify Feed manufactured on site
	Estimated Average Number of Times per Day Accessing	Day Accessing			Left	Right	Left	Right				
Truck	2											
Tractor Trailer	1											

Identify what roads and access points will be used for the proposed operation? (See [Truck Haul Routes and Access Points Map](#) for an example).

Truck Haul Routes and Access Point Map attached

12.0 Conservation Data Centre Report

A Conservation Data Centre Report must be requested and the response attached to this site assessment. The request may be submitted electronically at: [www.gov.mb.ca/conservation/cdc](http://www.gov.mb.ca/conservation/cdc).

Were rare species identified in the Conservation Data Centre Report?  Yes  No



PROJECT NAME WALDHEIM COLONY POULTRY BARN	BUILDING AREA N/A
SHEET TITLE TRUCK HAUL ROUTE NE 20-10-3W	DRAWN BY R. FLORES SOUTH-MAN ENGINEERING
DATE DRAWN MARCH 2017	DRAWING SCALE N.T.S.
SHEET NUMBER SP-3	

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**Waldheim Colony**

1 message

**Friesen, Chris (SD)** <Chris.Friesen@gov.mb.ca>

Mon, Mar 6, 2017 at 11:00 AM

To: "desalegn.southmaneng@gmail.com" &lt;desalegn.southmaneng@gmail.com&gt;

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](tel:204-945-7747).

Chris Friesen  
Coordinator  
Manitoba Conservation Data Centre  
[204-945-7747](tel:204-945-7747)  
[chris.friesen@gov.mb.ca](mailto:chris.friesen@gov.mb.ca)  
<http://www.manitoba.ca/conservation/cdc/>

-----Original Message-----

From:

Sent: February-24-17 11:45 AM

To: Friesen, Chris (SD)

Subject: WWW Form Submission

Below is the result of your feedback form. It was submitted by WWW Information Request () on Friday,

February 24, 2017 at 11:45:17

---

DocumentID: Manitoba\_Conservation

Project Title: Waldheim Colony

Date Needed: 2017/03/06

Name: Desalegn Edossa

Company/Organization: Soth-Man Engineering

Address: 15-1599 Dugald Rd

Phone: (204) 668-9652

Fax: (204) 668-9204

Email: [desalegn.southmaneng@gmail.com](mailto:desalegn.southmaneng@gmail.com)

Project Description: The information will be used to determine the impacts on species by a proposed livestock operation. It is proposed to expand chicken production: layers from 9,000 to 20,000 and pullets from 6,400 to 20,000.

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

Format Requested: Microsoft Word Document as email attachment.

Location: NE 20-10-3W in the RM of Cartier.

action: Submit

---



### 13.0 Supporting Documents

Check the supporting documents included in this submission:

- Contact Information and Privacy and Publication Notice
- Location Map (shows proposed project within rural municipality)
- Project Site Plan (proposed operation showing current and proposed structures)
- Animal Units Calculator
- Water Requirement Calculator
- Dairy Barn Water Requirement Estimator
- Manure Production Calculator
- Existing and Proposed Manure Storage Facility Dimension Tables (if applicable)
- Manure Treatment Supporting Documentation (if applicable)
- Manure Application Field Characteristics Table
- Crop Rotation Table
- Recent manure application field soil sample results (Olsen Phosphorus – ppm at 0-6 inch depth)
- Manitoba Agriculture Land Base Calculator
- Letter from the Manitoba Pork Council under the Hog Production Pilot Protocol (pigs only)
- Land Use and Spread Field Map (location and ownership of operation, location and distance to non-agricultural uses, development plan designation, zoning for project site and spread fields)
- Truck Haul Routes and Access Points Map (with routes and access points on municipal/provincial roads and/or provincial trunk highways)
- Response from the Conservation Data Centre
- Other, please specify:

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### 15.0 Declaration

I do hereby verify that the information contained in the Site Assessment, and all required Supporting Documents, are accurate and complete to my knowledge.

Date: 2017/03/21  
(YYYY/MMM/DD)

Name: Peter Grieger  
(Please Print Clearly)

Signature:  South-Man Engineering

Notes

---

<sup>1</sup> Identifying the location of the project is needed to determine the compliance with zoning and other by-laws. The inclusion of a location map helps to identify the project site within the municipality.

<sup>2</sup> Indicating if the operation is new or expanding helps determine what regulation requirements are needed to be met for the proposal.

<sup>3</sup> The regulatory requirements such as municipal by-laws and provincial regulations will vary with type and size of a livestock operation.

<sup>4</sup> The regulatory requirements such as provincial regulations will vary with the type of housing.

<sup>5</sup> Confined livestock areas most commonly refer to outdoor, open livestock facilities such as beef feedlots or cow-calf operation facilities ("open confined livestock areas"). The LMMMR includes covered structures, open to the elements, used for the rearing of livestock that feature a floor design that constitutes an effective water barrier, such as concrete ("Covered Confined Livestock Areas"). For example biotech shelters for feeder pig production and hoop structures.

<sup>6</sup> The site plan is needed to ensure that required yard and other requirements can be met. Noting other features such as dwellings, shelterbelts, water source locations, drainage patterns, access points and the property dimensions enable the applicant to ensure proper site planning and sufficient separation distances between features to meet provincial regulations.

<sup>7</sup> The province regulates the use of surface and ground water. Identifying the source of water will be required for resource management and licensing purposes.

<sup>8</sup> A water well log is a report completed by the well driller after the construction of the well. Copies of the report are left with the well owner, the well drilling contractor and the Water Science and Management Branch of Manitoba Sustainable Development. Water well logs provide useful information on the geology of the well site and can be used to assess the potential vulnerability of the site to groundwater contamination.

<sup>9</sup> The Province regulates the use of surface and ground water. Identifying the amount of water needed will be required for resource management and licensing purposes.

<sup>10</sup> New or expanding livestock operations **in certain areas** must have access to additional lands suitable for the application of livestock manure located within a reasonable distance, in the opinion of the director of Manitoba Sustainable Development. Reasonable distance is considered to be within a 10 mile radius of the operation for liquid manure. If land is identified beyond the 10 mile radius, a producer must submit a plan to the director of Manitoba Sustainable Development for approval describing the action taken and proposed to be taken to achieve and maintain soil phosphorus levels below 60 ppm.

If a plan is required, the proponent may attach the acceptance letter from the director of Manitoba Sustainable Development in an appendix to the Site Assessment as supporting documentation, demonstrating compliance with section 12.2(1) of the Livestock Manure and Mortalities Management Regulation (M.R. 42/98). For more information, contact Manitoba Sustainable Development at (204) 945-4384.

<sup>11</sup> "Agricultural operations are a source of traffic, noise, dust and odours. One of the key elements to successful siting of a livestock operation is to observe appropriate separation distances between potentially conflicting land uses. This is particularly important for the effective dispersion and dilution of odours from pig production facilities. When deciding where to build a new livestock operation, it is best to choose a site with as few neighbours as possible."

Section 6.2 Setbacks and Other Steps to Avoid Conflicts - Farm Practice Guidelines for Pig Producers in MB (April 2007)

Identifying the distance to the nearest land use features such as a neighbouring agricultural operation or non-agricultural designated uses ( such as residential or recreational designated areas in the Development Plan), sensitive areas such as wildlife management areas or critical habitat, individual dwellings and various water bodies and drains

enable the applicant to ensure that minimum separation distances are maintained between those various uses and the proposed animal confinement facility and manure storage facilities.

<sup>12</sup> Is an area identified on a Development Plan Map based on its current or future use?

<sup>13</sup> The mapping of the project site, neighbouring designated residential areas, individual residences and surface water features enables the applicant to describe the geographic setting and general suitability of the area for the project. This may also assist the applicant in determining appropriate setbacks for field storage of manure, composting manure, and composting mortalities. By identifying a 3-kilometer area around the project site, the applicant is made aware of all land owners that will be notified regarding the public Conditional Hearing that will take place as part of the review process.

<sup>14</sup> If undesignated Crown lands will be used for manure spreading purposes; including the laying of pipe, including draglines, or clearing activity, it will require the proponent to obtain a Crown Lands General Permit disposition that will authorize the use and access of the subject Crown Land(s).

Any clearing activity, related construction activity, or works associated with the manure spreading application will also require the appropriate permitting under applicable legislation (e.g., The Crown Lands Act, The Forestry Act etc. Please contact the Regional Lands Manager or Conservation Officer for additional information.

<sup>15</sup> Identifying truck haul routes and access points on municipal and Provincial Roads and/or Provincial Trunk Highways assists the province and municipality in planning and identifies any potential required access permits. The information also allows other stakeholders to determine potential impacts on existing roads and adjacent land uses.

# MMPP - Variety Yield Data Browser

This page contains content imported from our previous website and does not scale well on mobile devices with small screens. Check back soon for this content to be re-written for mobile devices.

## MMPP Variety Yield Data Browser - (Query Help)

Save Raw Data New Search

Summary Raw Data

### Search Summary

Your selected search:

- Region(s) Selected: CARTIER
- Crop(s) Selected: ARGENTINE CANOLA
- Variety(s) Selected: All
- Period Selected: 2006 to 2016

This search returned 243 records from the MASC database, summarized below:

Sum of Farm Varieties:	1,276 farms
Total Acres:	358,257 acres
Yield per Acre:	35.0 Bushels / acre (0.793 tonnes / acre)

View Raw Data

Save Raw Data New Search



# Manitoba Agricultural Services Corporation

## MMPP - Variety Yield Data Browser

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### MMPP Variety Yield Data Browser - (Query Help)

[Summary](#) | [Raw Data](#) | [Save Raw Data](#) | [New Search](#)

#### Search Summary

Your selected search:

- Region(s) Selected: CARTIER
- Crop(s) Selected: RED SPRING WHEAT
- Variety(s) Selected: All
- Period Selected: 2006 to 2016

This search returned 96 records from the MASC database, summarized below:

Sum of Farm Varieties:	795 farms
Total Acres:	245,440 acres
Yield per Acre:	49.9 Bushels / acre (1,358 tonnes / acre)

[View Raw Data](#) | [Save Raw Data](#) | [New Search](#)



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[Save Raw Data](#) | [New Search](#)

**MMPP Variety Yield Data Browser - (Query Help)**

[Summary](#) | [Raw Data](#)

**Search Summary**

Your selected search:

- Region(s) Selected: CARTIER
- Crop(s) Selected: GRAIN CORN
- Variety(s) Selected: All
- Period Selected: 2006 to 2016

This search returned 66 records from the MASC database, summarized below:

Sum of Farm Varieties:	103 farms
Total Acres:	19,938 acres
Yield per Acre:	113.1 Bushels / acre (2.872 tonnes / acre)

[View Raw Data](#)

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## MMPP Variety Yield Data Browser - (Query Help)

Summary

Raw Data

### Search Summary

Your selected search:

Region(s) Selected: CARTIER

Crop(s) Selected: BARLEY

Variety(s) Selected: All

Period Selected: 2006 to 2016

This search returned 53 records from the MASC database, summarized below:

Sum of Farm Varieties: 190 farms

Total Acres: 86,472 acres

Yield per Acre: 76.7 Bushels / acre (1,671 tonnes / acre)

View Raw Data

Save Raw Data

New Search

Save Raw Data

New Search



# MMPP - Variety Yield Data Browser

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## MMPP Variety Yield Data Browser - (Query Help)

Save Raw Data | New Search

Summary | **Raw Data**

### Search Summary

Your selected search:  
 Region(s) Selected: CARTIER  
 Crop(s) Selected: SOYBEANS  
 Variety(s) Selected: All  
 Period Selected: 2006 to 2016

This search returned 209 records from the MASC database, summarized below:

Sum of Farm Varieties:	662 farms
Total Acres:	170,402 acres
Yield per Acre:	38.8 Bushels / acre (1.056 tonnes / acre)

View Raw Data

Save Raw Data | New Search





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

### SOIL TEST REPORT

FIELD ID Beef Shed  
 SAMPLE IC  
 FIELD NAME  
 COUNTY  
 TWP 10 RANGE 3W  
 SECTION 29 QTR SW ACRES 125  
 PREV. CROP Corn-Grain



SUBMITTED FOR:  
 Waldheim Colony

SUBMITTED BY: TE1677  
 TERRACO-ELIE  
 HWY 1 ONE MILE WEST  
 BOX 433  
 ELIE, MB R0H 0H0

REF # 1805224 BOX # 0  
 LAB # NW190884

Date Sampled

Date Received 11/23/2016

Date Reported 2/3/2017

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
			YIELD GOAL	YIELD GOAL	YIELD GOAL	YIELD GOAL	YIELD GOAL	YIELD GOAL		
SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Nitrate	0-6"	12 lb/ac								
	6-24"	30 lb/ac								
	0-24"	42 lb/ac								
Phosphorus	Cisen	22 ppm	P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>		P <sub>2</sub> O <sub>5</sub>			
Potassium		418 ppm	K <sub>2</sub> O		K <sub>2</sub> O		K <sub>2</sub> O			
Chloride			Cl		Cl		Cl			
Sulfur	0-6"	40 lb/ac	S		S		S			
	6-24"	360 lb/ac	B		B		B			
Boron			Zn		Zn		Zn			
Zinc		2.57 ppm	Fe		Fe		Fe			
Iron			Mn		Mn		Mn			
Manganese			Cu		Cu		Cu			
Copper			Mg		Mg		Mg			
Magnesium			Lime		Lime		Lime			
Calcium										
Sodium										
Org.Matter		5.1 %								
Carbonate(CCE)			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
						% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6"	0.67 mmho/cm	0-6"	7.7						
	6-24"	1.42 mmho/cm	6-24"	7.9						





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

### SOIL TEST REPORT

FIELD ID **Corner South**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **10** RANGE **3W**  
 SECTION **21** QTR **NE NW** ACRES **140**  
 PREV. CROP **Corn-Grain**

W E

SUBMITTED FOR:  
**Waldheim Colony**

SUBMITTED BY: **TE1677**  
**TERRACO-ELIE**  
**HWY 1 ONE MILE WEST**  
**BOX 433**  
**ELIE, MB** **ROH 0H0**

S

REF # **1805225** BOX # **0**  
 LAB # **NW190880**

Date Sampled

Date Received **11/23/2016**

Date Reported **2/3/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
Depth	Concentration		LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
			Barley-Feed		Canola-bu				
			YIELD GOAL		YIELD GOAL		YIELD GOAL		
			80 BU		40 BU				
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
			Band		Band				
Nitrate	0-6" 11 lb/ac 6-24" 39 lb/ac		N	90	N	90	N		
Phosphorus	Olsen 31 ppm		P <sub>2</sub> O <sub>5</sub>	15 Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	10 Band (Starter)*	P <sub>2</sub> O <sub>5</sub>		
Potassium	345 ppm		K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	0	K <sub>2</sub> O		
Chloride			Cl		Cl		Cl		
Sulfur	0-6" 14 lb/ac 6-24" 60 lb/ac		S	7 Band (Trial)	S	17 Band	S		
Boron			B		B		B		
Zinc	2.35 ppm		Zn	0	Zn	0	Zn		
Iron			Fe		Fe		Fe		
Manganese			Mn		Mn		Mn		
Copper			Cu		Cu		Cu		
Magnesium			Mg		Mg		Mg		
Calcium			Lime		Lime		Lime		
Sodium									
Org.Matter	4.1 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)		
Carbonate(CCE)			Buffer pH		% Ca	% Mg	% K	% Na	% H
			0-6" 7.5						
			6-24" 7.9						
Sol. Salts	0-6" 0.48 mmho/cm 6-24" 0.58 mmho/cm								

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 = 40 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 = 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)  
 No thwood: (701) 587-6010  
 Eason: (320) 843-4109

### SOIL TEST REPORT

FIELD ID Bellisle  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP RANGE  
 SECTION QTR NE 16- ACRES 160  
 10-3W  
 PREV. CROP Barley

W E

SUBMITTED FOR:  
**WALDHEIM COLONY FARMS LTD**  
 Box 322  
 Elie, MB ROH 0H0

SUBMITTED BY: PI2813  
**RICHARDSON PIONEER-STARBU**  
 RAILWAY AVE  
 BOX 130  
 STARBUCK, MB ROG 2PO

REF # 1609369 BOX # 0  
 LAB # NW56384

Date Sampled

Date Received 08/29/2016

Date Reported 2/13/2017

Nutrient In The Soil		Interpretation		1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Nitrate	0-6"	12 lb/ac	****	Corn-Grain		Corn-Grain		Corn-Grain			
	6-24"	6 lb/ac		YIELD GOAL		YIELD GOAL		YIELD GOAL			
				150 BU		160 BU		170 BU			
	0-24"	18 lb/ac		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
				Band/Maint.		Band/Maint.		Band/Maint.			
	Olsen	13 ppm		LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus				N	162	N	174	N	186		
Potassium		566 ppm		P <sub>2</sub> O <sub>5</sub>	60 Band *	P <sub>2</sub> O <sub>5</sub>	64 Band *	P <sub>2</sub> O <sub>5</sub>	68 Band *		
Chloride	0-24"	352 lb/ac		K <sub>2</sub> O	10 Band (2x2) *	K <sub>2</sub> O	10 Band (2x2) *	K <sub>2</sub> O	10 Band (2x2) *		
	0-6"	64 lb/ac		Cl	Not Available	Cl	Not Available	Cl	Not Available		
Sulfur	6-24"	360 +lb/ac		S	0	S	0	S	0		
Boron		1.7 ppm		B	0	B	0	B	0		
Zinc		1.20 ppm		Zn	0	Zn	2 Band (Trial)	Zn	2 Band (Trial)		
Iron		50.1 ppm		Fe	0	Fe	0	Fe	0		
Manganese		4.1 ppm		Mn	0	Mn	0	Mn	0		
Copper		2.85 ppm		Cu	0	Cu	0	Cu	0		
Magnesium		2219 ppm		Mg	0	Mg	0	Mg	0		
Calcium		5252 ppm		Lime		Lime		Lime			
Sodium		100 ppm									
Org.Matter		5.1 %									
Carbonate(CCE)		1.6 %									
Sol. Salts	0-6"	0.95 mmho/cm		Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	6-24"	1.97 mmho/cm		0-6" 7.4		46.6 meq	% Ca	% Mg	% K	% Na	% H
				6-24" 7.9			(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
							56.3	39.6	3.1	0.9	

General Comments: Soil Texture: Sand: 22.0 % Silt: 15.0 % Clay: 63.0 %. USDA Textural class: Clay.

Crop 1: \*\* Chloride yield data is limited for this crop. \* 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 = 60 K2O = 41 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: \*\* Chloride yield data is limited for this crop. \* 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 = 64 K2O = 43 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 3: \*\* Chloride yield data is limited for this crop. \* 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 = 68 K2O = 46 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

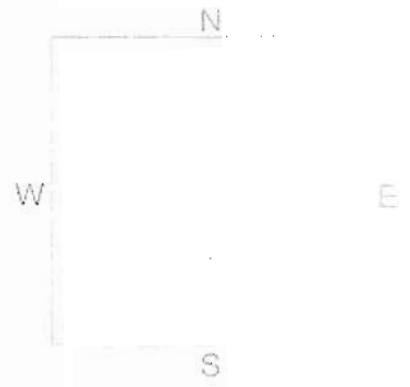




Soil Analysis by Agvise Laboratories  
 (http://www.agvise.com)  
 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID MILE WEST  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP RANGE  
 E1/2  
 SECTION QTR 19-10- ACRES 320  
 3W



SUBMITTED FOR:  
 WALDHEIM COLONY FARMS LTD  
 Box 322

Elie, MB R0H 0H0

SUBMITTED BY: PI2813  
 RICHARDSON PIONEER-STARBU  
 RAILWAY AVE  
 BOX 130  
 STARBUCK, MB ROG 2PO

REF # 1607848 BOX # 0  
 LAB # NW56388

Date Sample 1

Date Received 08/29/2016

Date Reported 2/13/2017

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
Depth	Concentration		Crop	Yield Goal	Crop	Yield Goal	Crop	Yield Goal		
0-6"	15 lb/ac	Low	Corn-Grain	140 BU	Corn-Grain	150 BU	Corn-Grain	165 BU		
6-24"	6 lb/ac		YIELD GOAL		YIELD GOAL		YIELD GOAL			
0-24"	21 lb/ac	Med	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES			
			Band/Maint.		Band/Maint.		Band/Maint.			
		High	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
			N 147		N 159		N 177			
		Low	P <sub>2</sub> O <sub>5</sub> 56	Band *	P <sub>2</sub> O <sub>5</sub> 60	Band *	P <sub>2</sub> O <sub>5</sub> 66	Band *		
			K <sub>2</sub> O 10	Band (2x2) *	K <sub>2</sub> O 10	Band (2x2) *	K <sub>2</sub> O 10	Band (2x2) *		
		Med	Cl	Not Available	Cl	Not Available	Cl	Not Available		
			S 0		S 0		S 0			
		High	B 0		B 0		B 0			
			Zn 0		Zn 0		Zn 0			
		Low	Fe 0		Fe 0		Fe 0			
			Mn 0		Mn 0		Mn 0			
		Med	Cu 0		Cu 0		Cu 0			
			Mg 0		Mg 0		Mg 0			
		High	Lime		Lime		Lime			
		Low	Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
						% Ca	% Mg	% K	% Na	% H
		Med	0-6" 7.4		45.2 meq	(65-75)	(15-20)	(1-7)	(0-5)	(0-5)
			6-24" 8.3			58.8	37.1	3.1	1.1	

General Comments: Clays/Clay Loams (CEC range = 30+) (Fine)

Crop 1: \*\* Chloride yield data is limited for this crop. \* 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 = 56 K2O = 38 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

Crop 2: \*\* Chloride yield data is limited for this crop. \* 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 = 60 K2O = 41 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.

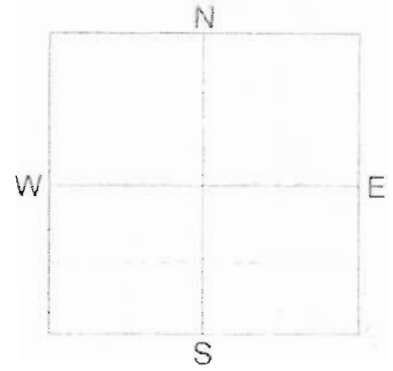
Crop 3: \*\* Chloride yield data is limited for this crop. \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 66 K2O = 45 AGVISE Band/Maintenance guidelines will build P & K test levels to the medium range over many years and then maintain them.



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

### SOIL TEST REPORT

FIELD ID **School West**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **10** RANGE **3W**  
 SECTION **21** QTR **SE +** ACRES **240**  
 PREV. CROP **Canola-bu** **S 1/2 NE**



SUBMITTED FOR:  
**Waldheim Colony**

SUBMITTED BY: **TE1677**  
**TERRACO-ELIE**  
**HWY 1 ONE MILE WEST**  
**BOX 433**  
**ELIE, MB** **ROH OH0**

REF # **1622471** BOX # **0**  
 LAB # **NW64420**

Date Sampled

Date Received **09/08/2016**

Date Reported **11/17/2016**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice		
		Low	Low	Med	High	Barley		Canola-bu		Wheat-Spring		
Nitrate	0-6"	11 lb/ac	.....	.....	.....	YIELD GOAL		YIELD GOAL		YIELD GOAL		
	6-24"					9 lb/ac	80 BU	40 BU	60 BU			
Nitrate	0-24"	20 lb/ac	.....	.....	.....	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		
						Band		Band		Band		
Phosphorus	Olsen	27 ppm	.....	.....	.....	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	
						N	104	N	120	N	142	
Potassium		588 ppm	.....	.....	.....	P <sub>2</sub> O <sub>5</sub>	15 Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	10 Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	15 Band (Starter)*	
						K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (Starter)*	
Sulfur	0-6"	30 lb/ac	.....	.....	.....	Cl		Cl		Cl		
	6-24"	84 lb/ac	.....	.....	.....	S	0	S	15 Band	S	0	
Boron			.....	.....	.....	B		B		B		
Zinc		2.80 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		6.1 %	.....	.....	.....	Soil pH		% Base Saturation (Typical Range)				
Carbonate(CCE)			.....	.....	.....	Buffer pH	Cation Exchange Capacity	% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6"	0.63 mmho/cm	.....	.....	.....	0-6"	7.4					
	6-24"	0.53 mmho/cm	.....	.....	.....	6-24"	8.2					

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 = 40 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 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

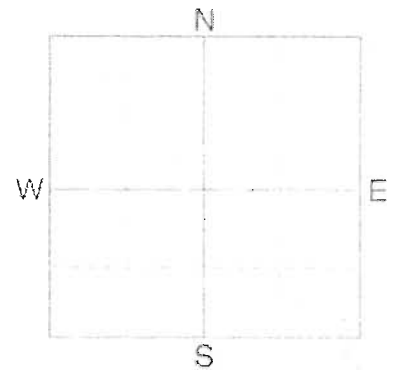




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### SOIL TEST REPORT

FIELD ID **Olsen**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **10** RANGE **3W**  
 SECTION **27** QTR **SE 4** ACRES **240**  
 PREV. CROP **Barley** **5 1/2 NE**



SUBMITTED FOR:  
**Waldheim Colony**

SUBMITTED BY: **TE1677**  
**TERRACO-ELIE**  
**HWY 1 ONE MILE WEST**  
**BOX 433**  
**ELIE, MB** **ROH OHO**

REF # **1622469** BOX # **0**  
 LAB # **NW64425**

Date Sampled

Date Received **09/08/2016**

Date Reported **11/17/2016**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		Low	Low	Med	High	Canola-bu			Wheat-Spring			Soybeans		
Nitrate	0-6"	12 lb/ac				YIELD GOAL			YIELD GOAL			YIELD GOAL		
	6-24"	9 lb/ac	****			40 BU			60 BU			40 BU		
	0-24"	21 lb/ac				SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
Olsen		44 ppm				Band			Band			Band		
Phosphorus			*****			LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION	
Potassium		796 ppm	*****			N	119		N	141		N	***	
Chloride			*****			P <sub>2</sub> O <sub>5</sub>	10	Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	15	Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	10	Band (Starter)*
Sulfur	0-6"	120 +lb/ac	*****			K <sub>2</sub> O	0		K <sub>2</sub> O	0		K <sub>2</sub> O	0	
Boron	6-24"	360 +lb/ac	*****			Cl			Cl			Cl		
Zinc		0.70 ppm	*****			S	10	Band	S	0		S	0	
Iron			*****			B			B			B		
Manganese			*****			Zn	2	Band (Trial)	Zn	2	Band (Trial)	Zn	2	Band (Trial)
Copper			*****			Fe			Fe			Fe		
Magnesium			*****			Mn			Mn			Mn		
Calcium			*****			Cu			Cu			Cu		
Sodium			*****			Mg			Mg			Mg		
Org.Matter		4.5 %	*****			Lime			Lime			Lime		
Carbonate(CCE)			*****			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)					
Sol. Salts	0-6"	0.94 mmho/cm	*****						% Ca	% Mg	% K	% Na	% H	
	6-24"	2.18 mmho/cm	*****			0-6" 7.7								
						6-24" 8.1								

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 = 36 K2O = 18 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 = 38 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: 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.

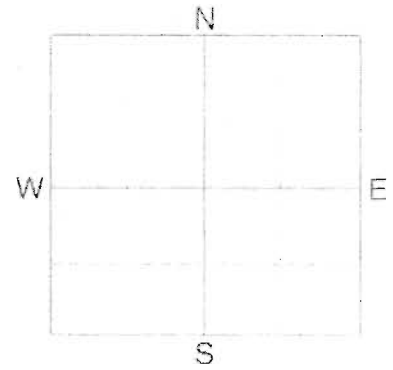




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### SOIL TEST REPORT

FIELD ID **Bernard**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **10** RANGE **3W**  
 SECTION **17** QTR **SE** ACRES **160**  
 PREV. CROP **Canola-bu** *less drain*



SUBMITTED FOR:  
**Waldheim Colony**

SUBMITTED BY: **TE1677**  
**TERRACO-ELIE**  
**HWY 1 ONE MILE WEST**  
**BOX 433**  
**ELIE, MB** **ROH OH0**

REF # **1622470** BOX # **0**  
 LAB # **NW64427**

Date Sampled

Date Received **09/08/2016**

Date Reported **11/17/2016**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		Low	Med	High	Barley			Wheat-Spring			Soybeans			
Nitrate	0-6"	18 lb/ac			YIELD GOAL			YIELD GOAL			YIELD GOAL			
	6-24"	12 lb/ac			80 BU			60 BU			40 BU			
	0-24"	30 lb/ac			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			
					Band			Band			Band			
					LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		
Phosphorus	<b>Olsen</b> 14 ppm				N	94		N	132		N	***		
Potassium	721 ppm				P <sub>2</sub> O <sub>5</sub>	21	Band *	P <sub>2</sub> O <sub>5</sub>	23	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	10	Band (Starter)*	K <sub>2</sub> O	0		
Sulfur	0-6" 28 lb/ac 6-24" 228 lb/ac				Cl			Cl			Cl			
Boron					S	0		S	0		S	5	Band (Trial)	
Zinc	1.58 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			% Base Saturation (Typical Range)						
Carbonate(CCE)					Buffer pH	Cation Exchange Capacity		% Ca	% Mg	% K	% Na	% H		
Sol. Salts	0-6" 0.59 mmho/cm 6-24" 0.59 mmho/cm				0-6" 7.2									
					6-24" 8.2									

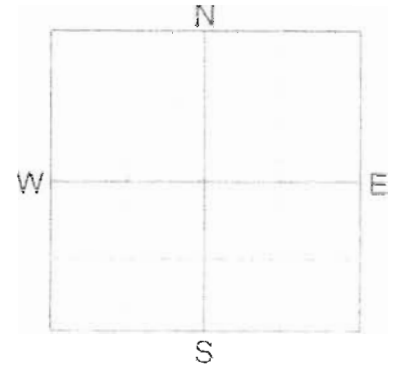
Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 40 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 2: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 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: 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.



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### SOIL TEST REPORT

FIELD ID Section  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP 10 RANGE 3W **350**  
 SECTION 29 QTR N 1/2 ACRES **303**  
 PREV. CROP Canola-bu



SUBMITTED FOR:  
**Waldheim Colony**

SUBMITTED BY: **TE1677**  
**TERRACO-ELIE**  
**HWY 1 ONE MILE WEST**  
**BOX 433**  
**ELIE, MB** **ROH OH0**

REF # **1622468** BOX # **0**  
 LAB # **NW64428**

Date Sampled \_\_\_\_\_ Date Received **09/08/2016** Date Reported **11/17/2016**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		Low Med High	Barley		Wheat-Spring		Soybeans	
	0-6" 12 lb/ac 6-24" 9 lb/ac	****	YIELD GOAL 80 BU		YIELD GOAL 60 BU		YIELD GOAL 40 BU	
	0-24" 21 lb/ac		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES	
Nitrate			Band		Band		Band	
			LB/ACRE APPLICATION		LB/ACRE APPLICATION		LB/ACRE APPLICATION	
Phosphorus	Olsen 28 ppm	*****	N 103		N 141		N ***	
Potassium	425 ppm	*****	P <sub>2</sub> O <sub>5</sub> 15 Band (Starter)*		P <sub>2</sub> O <sub>5</sub> 15 Band (Starter)*		P <sub>2</sub> O <sub>5</sub> 10 Band (Starter)*	
Chloride			K <sub>2</sub> O 10 Band (Starter)*		K <sub>2</sub> O 10 Band (Starter)*		K <sub>2</sub> O 0	
Sulfur	0-6" 60 lb/ac 6-24" 270 lb/ac	*****	Cl		Cl		Cl	
Boron			S 0		S 0		S 0	
Zinc	2.29 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 Buffer pH Cation Exchange Capacity		% Base Saturation (Typical Range)			
Carbonate(CCE)					% Ca	% Mg	% K	% Na % H
Sol. Salts	0-6" 0.56 mmho/cm 6-24" 0.64 mmho/cm	*****	0-6" 7.2					
			6-24" 8.2					

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 = 40 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 = 38 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 = 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.

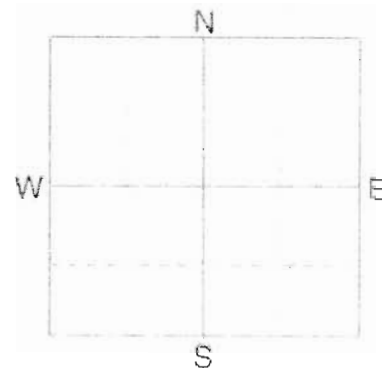




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### SOIL TEST REPORT

FIELD ID School East  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP 10 RANGE 3W  
 SECTION 22 QTR SW ACRES 237  
 PREV. CROP Soybeans + S<sup>1</sup>/<sub>2</sub> NW



SUBMITTED FOR:  
 Waldheim Colony

SUBMITTED BY: TE1677  
 TERRACO-ELIE  
 HWY 1 ONE MILE WEST  
 BOX 433  
 ELIE, MB ROH OH0

REF # 1701649 BOX # 0  
 LAB # NW104283

Date Sampled

Date Received 10/05/2016

Date Reported 11/17/2016

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		Low Med High	Barley		Canola-bu		Wheat-Spring				
	0-6" 10 lb/ac 6-24" 9 lb/ac	****	YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24" 19 lb/ac		80 BU		40 BU		60 BU				
Nitrate			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
			Band		Band		Band				
	Olsen 14 ppm		LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus			N 90		N 106		N 128				
Potassium	361 ppm		P <sub>2</sub> O <sub>5</sub> 21	Band *	P <sub>2</sub> O <sub>5</sub> 22	Band *	P <sub>2</sub> O <sub>5</sub> 23	Band *			
Chloride			K <sub>2</sub> O 10	Band (Starter)*	K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (Starter)*			
Sulfur	0-6" 120 +lb/ac 6-24" 360 +lb/ac		Cl		Cl		Cl				
Boron			S 0		S 10	Band	S 0				
Zinc	2.36 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	4.1 %		Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)				
Carbonate(CCE)			Buffer pH				% Ca	% Mg	% K	% Na	% H
	0-6" 1.47 mmho/cm 6-24" 1.31 mmho/cm		0-6" 7.2								
Sol. Salts			6-24" 8.3								

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 40 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 \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. 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 \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. 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.



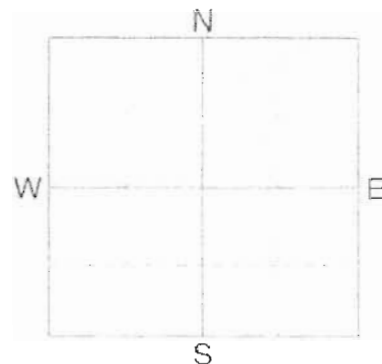




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### SOIL TEST REPORT

FIELD ID **Curry Claim**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **10** RANGE **3W**  
 SECTION **20** QTR **SW** ACRES **160**  
 PREV. CROP **Soybeans**



SUBMITTED FOR:  
**Waldheim Colony**

SUBMITTED BY: **TE1677**  
**TERRACO-ELIE**  
**HWY 1. ONE MILE WEST**  
**BOX 433**  
**ELIE, MB** **ROH OHO**

REF # **1701643** BOX # **0**  
 LAB # **NW104268**

Date Sampled

Date Received **10/05/2016**

Date Reported **11/17/2016**

Nutrient In The Soil			Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
			Low	Med	High	Barley			Canola-bu			Wheat-Spring			
	<b>0-6"</b>	<b>12 lb/ac</b>				YIELD GOAL			YIELD GOAL			YIELD GOAL			
	<b>6-24"</b>	<b>24 lb/ac</b>				<b>80 BU</b>			<b>40 BU</b>			<b>60 BU</b>			
	<b>0-24"</b>	<b>36 lb/ac</b>				SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			
Nitrate						Band			Band			Band			
	<b>Olsen</b>	<b>26 ppm</b>				LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		
Phosphorus						N	<b>73</b>		N	<b>89</b>		N	<b>111</b>		
Potassium		<b>591 ppm</b>				P <sub>2</sub> O <sub>5</sub>	<b>15</b>	Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	<b>10</b>	Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	<b>15</b>	Band (Starter)*	
Chloride						K <sub>2</sub> O	<b>10</b>	Band (Starter)*	K <sub>2</sub> O	<b>0</b>		K <sub>2</sub> O	<b>10</b>	Band (Starter)*	
Sulfur	<b>0-6"</b>	<b>28 lb/ac</b>				Cl			Cl			Cl			
	<b>6-24"</b>	<b>54 lb/ac</b>				S	<b>5</b>	Band (Trial)	S	<b>15</b>	Band	S	<b>5</b>	Band (Trial)	
Boron						B			B			B			
Zinc		<b>3.04 ppm</b>				Zn	<b>0</b>		Zn	<b>0</b>		Zn	<b>0</b>		
Iron						Fe			Fe			Fe			
Manganese						Mn			Mn			Mn			
Copper						Cu			Cu			Cu			
Magnesium						Mg			Mg			Mg			
Calcium						Lime			Lime			Lime			
Sodium															
Org.Matter		<b>5.3 %</b>				Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)			
Carbonate(CCE)						Buffer pH			% Ca	% Mg	% K	% Na	% H		
	<b>0-6"</b>	<b>0.95 mmho/cm</b>				0-6"	<b>7.2</b>								
Sol. Salts	<b>6-24"</b>	<b>0.75 mmho/cm</b>				6-24"	<b>8.0</b>								

Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P 205 = 38 K2O = 40 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 \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P 205 = 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 \* Nitrogen is credited 15 lbs for the previous crop. Nitrogen credits may need to be adjusted based on local conditions. Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P 205 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

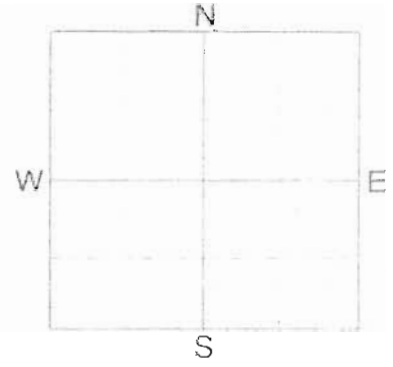




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### SOIL TEST REPORT

FIELD ID **Corner North**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **10** RANGE **3W**  
 SECTION **28** QTR **SW** ACRES **160**  
 PREV. CROP **Wheat-Spring** *deduct drain*



SUBMITTED FOR:  
**Waldheim Colony**

SUBMITTED BY: **TE1677**  
**TERRACO-ELIE**  
**HWY 1 ONE MILE WEST**  
**BOX 433**  
**ELIE, MB** **ROH 0H0**

REF # **1622528** BOX # **0**  
 LAB # **NW64424**

Date Sampled

Date Received **09/08/2016**

Date Reported **11/17/2016**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice	
		Low	Low	Med	High	Barley		Canola-bu		Soybeans	
						YIELD GOAL		YIELD GOAL		YIELD GOAL	
						80 BU		40 BU		40 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" 6 lb/ac 0-24" 20 lb/ac					N	104	N	120	N	***
Phosphorus	Olsen 49 ppm					P <sub>2</sub> O <sub>5</sub>	15	P <sub>2</sub> O <sub>5</sub>	10	P <sub>2</sub> O <sub>5</sub>	10
Potassium	529 ppm						Band (Starter)*		Band (Starter)*		Band (Starter)*
Chloride						K <sub>2</sub> O	10	K <sub>2</sub> O	0	K <sub>2</sub> O	0
Sulfur	0-6" 54 lb/ac 6-24" 192 lb/ac					Cl		Cl		Cl	
Boron						S	0	S	10	S	0
Zinc	2.95 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	5.9 %					Soil pH		% Base Saturation (Typical Range)			
Carbonate(CCE)						Buffer pH	Cation Exchange Capacity	% Ca	% Mg	% K	% Na
								% H			
Sol. Salts	0-6" 0.81 mmho/cm 6-24" 1.26 mmho/cm					0-6" 7.0 6-24" 7.9					

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 = 40 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. Soybeans may respond to nitrogen on fields testing less than 60 lb/ac with a limited soybean history.