



TECHNICAL REVIEW COMMITTEE

A TECHNICAL REVIEW REPORT

PREPARED FOR

**THE RURAL MUNICIPALITY
OF PORTAGE LA PRAIRIE**

**NORTHERN BREEZE COLONY
FARMS LTD.**

W 1/2 35-13-6 WPM

TRC 12-081

April 20, 2021

A. INTRODUCTION – THE TEAM

The Technical Review Committee (TRC) is supported by the following department personnel:

Agriculture and Resource Development (ARD)

- Aggregate Resource Planner
- Agricultural Engineer
- Business Development Specialist
- Crown Lands Manager
- Fish Habitat Specialist
- Groundwater Specialist
- Habitat Mitigation and Wildlife Land Specialist
- Land-Water Specialist
- Livestock Environment Specialist
- Nutrient Management Specialist
- Veterinarians

Conservation and Climate (CC)

- Environmental Engineer
- Environment Officer
- Water Rights Licensing Technologist

Infrastructure (MI)

- Senior Development Review Technologist
- Senior Flood Protection Planning Officer

Municipal Relations (MR)

- Community Planners

And any other specialist or department that may have an interest, which may be consulted during the process.

THE TECHNICAL REVIEW COMMITTEE (TRC) REPORT

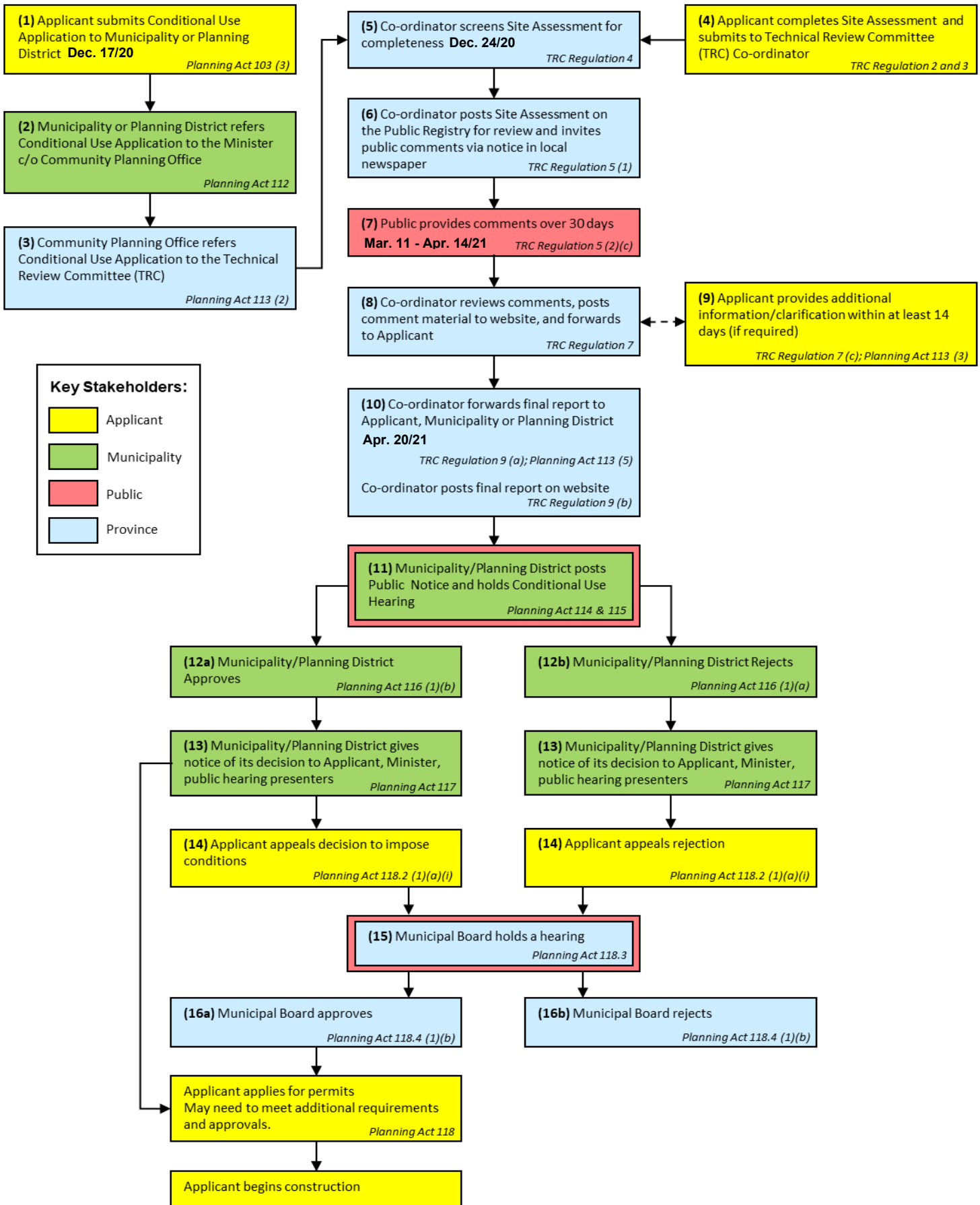
Purpose of TRC Reports

To provide objective, credible, technically-based assessments that:

- a) Enable municipal councils or planning districts to make informed Conditional Use Permit decisions;
- b) Create a common stakeholder understanding of a livestock proposal, potential impacts and related regulatory requirements and safeguards;
- c) Provide a vehicle/forum that enables the sharing of public concerns and proponent responses;
- d) Offer recommendations to both municipal councils, planning districts and proponents; and
- e) Represents the fulfillment of the TRC's role as per 116(1)(b)(i) of *The Planning Act* – to determine, based on available information, that the proposed operation will not create a risk to health, safety or the environment, or that any risk can be minimized through the use of appropriate practices, measure and safeguards.

Should the municipal council provide conditional approval of the proposal, the project proponent may be required to obtain various permits and licenses from the province to address in greater detail environmental aspects of the proposal. As of November 1, 2019, a proponent may appeal a municipal council's rejection of their application or appeal a condition imposed related to municipal council's approval. Appeals are made to the Municipal Board.

Livestock Technical Review Process (November 1, 2019)



B. DESCRIPTION OF PROPOSED LIVESTOCK OPERATION

Further information can be found at https://www.gov.mb.ca/mr/livestock/public_registries.html

Applicant: Northern Breeze Colony Farms Ltd.

Site Location: W ½ 35-13-6 WPM. Refer to map below.

Proposal: To expand sows: farrow/finish from existing 600 to 720 and add 12,000 layers. 9,000 turkeys (two batches of 4,500 turkeys per year) pre-existing will remain as is. The total animal units will increase from 795 to 1,045.

This will involve the following:

- Construction of new layer barn.
- Concrete and steel tank manure storage for hogs.
- Permanent solid manure storage facility for layers.
- Field manure storage for turkeys.
- Consuming a maximum of 22,361 imperial gallons of water per day from existing wells and surface water.
- Composting mortalities.
- Truck haul routes as shown in map below.







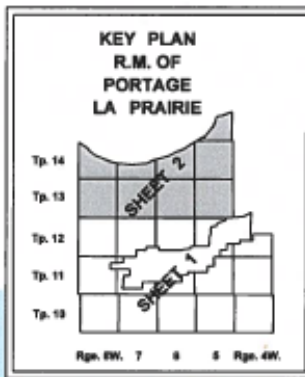
R.M. OF PORTAGE LA PRAIRIE

0 5
SCALE IN KILOMETRES

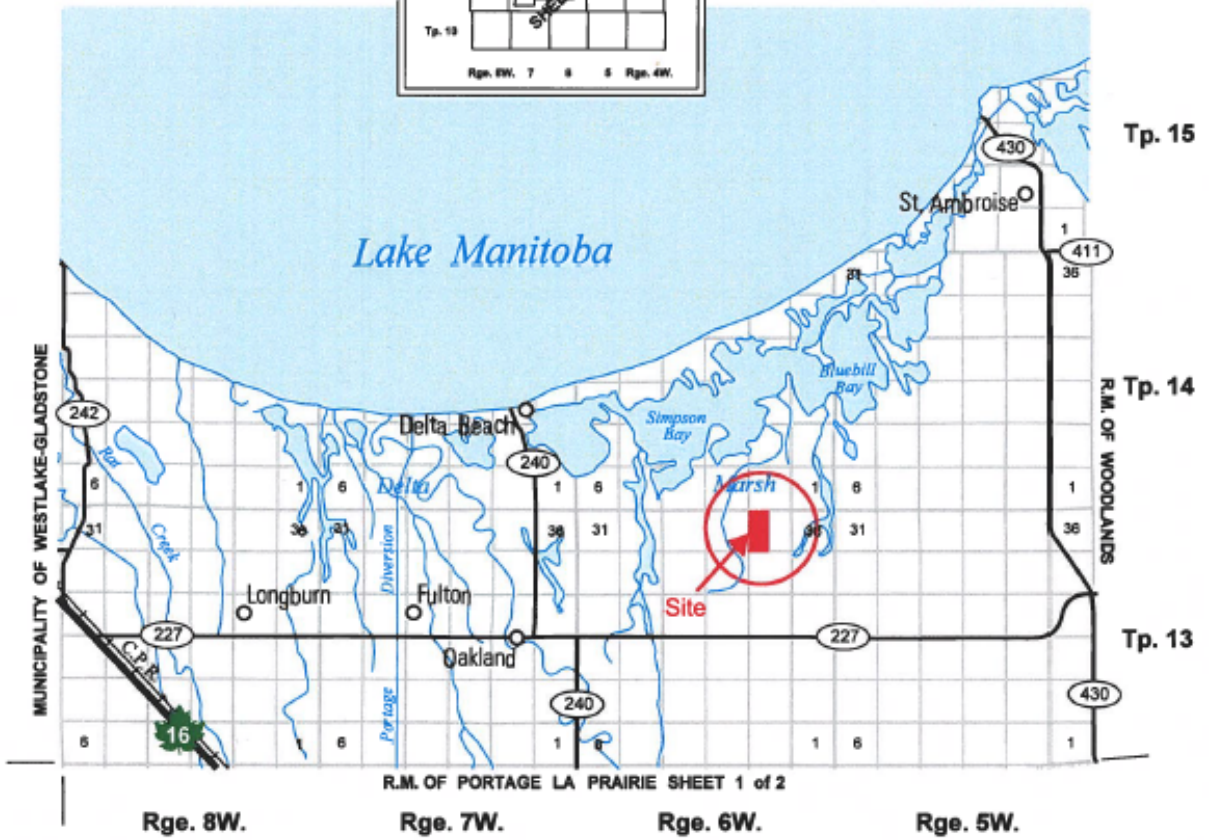
PROVINCE OF MANITOBA
INFRASTRUCTURE
HIGHWAY PLANNING AND DESIGN BRANCH
GEOGRAPHIC & RECORDS MANAGEMENT SECTION
WINNIPEG
JANUARY 1, 2015

LEGEND

TRANS-CANADA HIGHWAY		ACCESS ROADS	
PROVINCIAL ROADS		RAILWAYS	

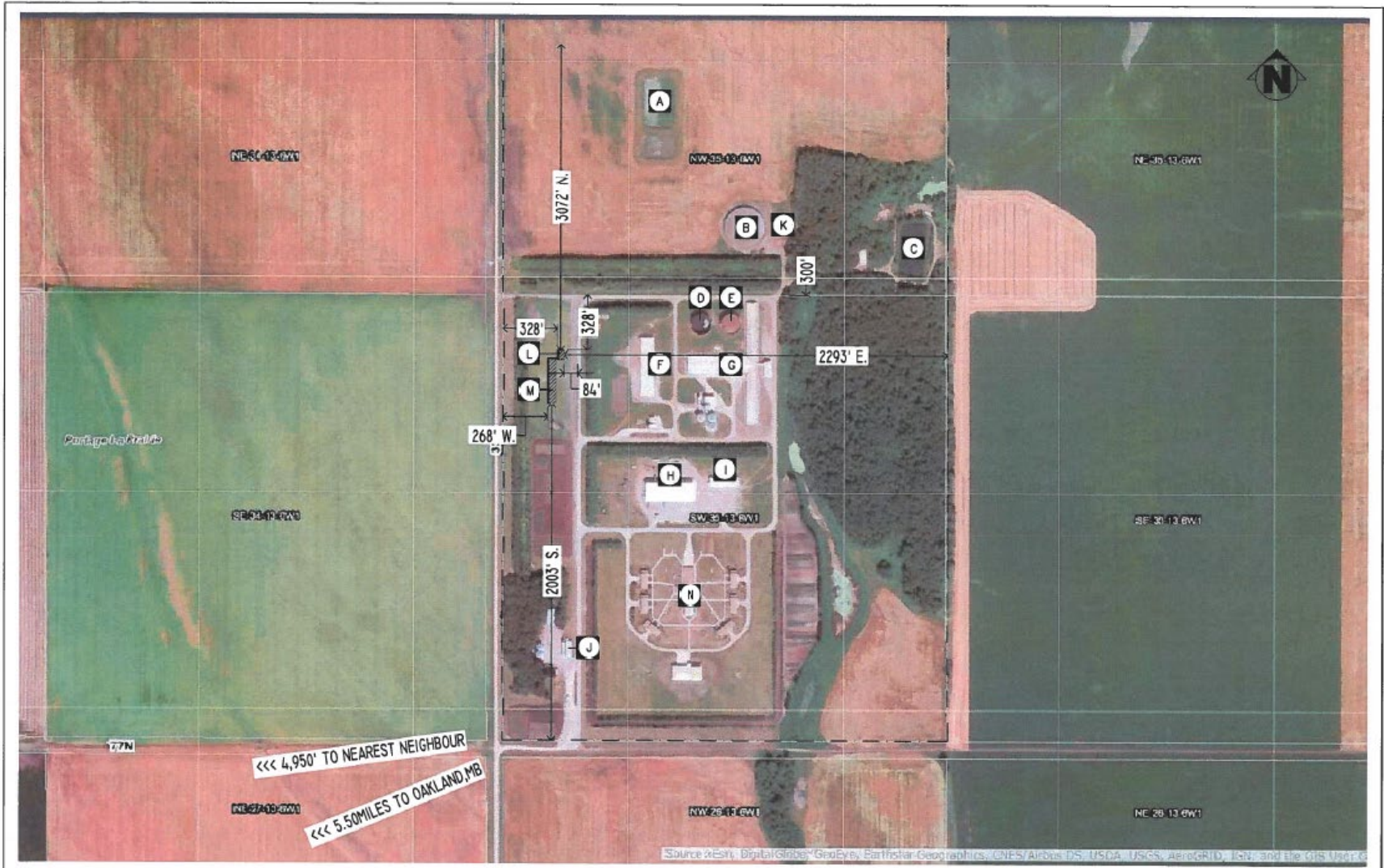


Northern Breeze Colony Farms Ltd.
W1/2 35-13-6W
RM of Portage La Prairie



R.M. OF PORTAGE LA PRAIRIE SHEET 1 of 2

SHEET 2 of 2

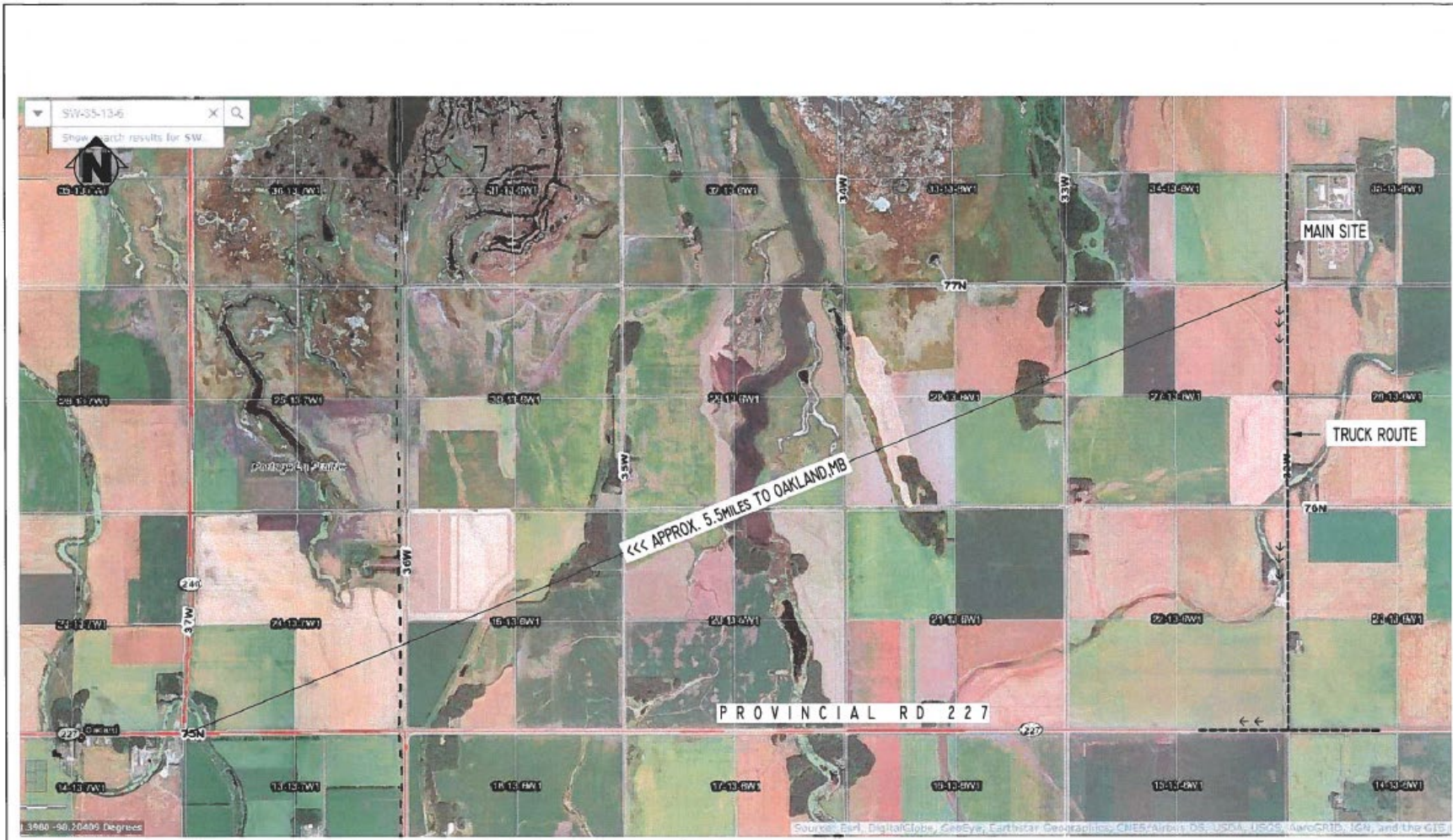


ALPHABETICAL NOTES APPLY ONLY TO THIS SHEET

- | | | |
|--------------------------------|------------------------------|--|
| A DOMESTIC LAGOON; | F TURKEY BARN; | K COMPOST SITE; |
| B CONCRETE TANK; | G HOG BARN; | L NEW MANURE STORAGE (38'x60'); |
| C DUGOUT; | H FARM SHOP; | M NEW LAYER BARN (50'x270'); |
| D SLURRYSTORE (UNUSED); | I ELECTRIC/CARPENTER; | N RESIDENTIAL DEVELOPMENT; |
| E SLURRYSTORE; | J EQUIPMENT STORAGE; | |



PROJECT NAME NORTHERN BREEZE COLONY SW 35-13-6W		BUILDING AREA N/A	
SHEET TITLE SITE PLAN		DRAWN BY R. FLORES SOUTH-MAN ENGINEERING	
DATE DRAWN MARCH 2020		DRAWING SCALE SCALED TO FIT	SHEET NUMBER SP-1
THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.			



PROJECT NAME NORTHERN BREEZE COLONY SW 35-13-6W		BUILDING AREA N/A
SHEET TITLE TRUCK HAUL ROUTE		DRAWN BY R. FLORES SOUTH-MAN ENGINEERING
DATE DRAWN MARCH 2020	DRAWING SCALE SCALED TO FIT	SHEET NUMBER SP-3
THIS DRAWING IS THE PROPERTY OF SOUTH-MAN ENGINEERING, WINNIPEG, MANITOBA, CANADA.		

C. SITE ASSESSMENT OVERVIEW

Provincial Technical Overview of TRC 12-081 – Northern Breeze Colony Farms Ltd.				
Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
1	Submitted complete site assessment	X	Technical Review Committee Regulation 119/2011 requires an applicant to submit a completed site assessment.	MR
2	Clearly identified the current and proposed type and number of animals and animal units	X	Northern Breeze Colony Farms Ltd is currently seeking Conditional Use approval to expand an existing 600 sow (farrow to finish) operation to 720 sows (farrow to finish). This is equivalent to 900 animal units (AU). At the same time, they are seeking approval to build a new 12,000 layer operation (100 AU). The existing 9,000 turkey operation (45 AU) will remain as-is. The total AU for the Colony is 1045.	ARD ¹
3	Project clearly defined as:	X	The project is clearly defined as an animal confinement facility.	CC
	<u>animal confinement facility</u>	X	The construction of a new layer barn will be added to the existing operation. The proposed new layer barn is in excess of 6,458 sq. ft. (600 sq.m). Therefore, a building permit will be required from the Inspection and Technical Services Branch (Municipal Relations) under <i>The Building and Mobile Home Act</i> and the Manitoba Building Code. https://firecomm.gov.mb.ca/itsm_main.html	MR
4	Identified all existing and proposed buildings and structures and related separation distances	X	The proposal complies with all separation distance requirements in the RM of Portage la Prairie Zoning By-law No.3096.	MR
5	Demonstrated project site is not located within Nutrient Management Zone N4 or any Nutrient Buffer Zone	X	The project site is not located within Nutrient Management Zone N4 or any Nutrient Buffer Zone.	ARD ²

¹ Agri-Resource Branch

² Water Science and Watershed Management Branch

Provincial Technical Overview of TRC 12-081 – Northern Breeze Colony Farms Ltd.

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
6	Identified suitable water source: Existing well and surface water and a water consumption rate of 22,361 imperial gallons per day	X	This project currently holds a valid Water Rights Licence issued under <i>The Water Rights Act</i> ; however due to the increase in water demand to support the expansion, an amendment application to the Licence will be required.	CC
7	Proposed project site meets development plan, zoning by-law	X	<p><i>The Planning Act</i> requires that development plans must include a livestock operation policy that guides zoning by-laws dealing with livestock operations.</p> <p><i>The Planning Act</i> requires municipalities to issue development permits for any development on a site. All development must comply with the Zoning By-law and Development Plan. Any proposed development that does not meet the separation distances or setbacks requires Council approval and a public process to vary those requirements.</p> <p>Designation The proposed livestock operation, located in the SW ¼ 35-13-6 WPM in the RM of Portage la Prairie, is designated Agricultural Area (Portage la Prairie Planning District Development Plan By-law No.02-2018) and the proposal complies with Development Policies 17.13-17.17 (Livestock Policies).</p> <p>Zoning The proposed site is zoned “Agricultural” Zone (RM of Portage la Prairie Zoning By-law No.3096) and has a minimum site area requirement of 80 acres with a minimum site width requirement of 300 feet.</p> <p>The proposed project complies with the RM of Portage la Prairie Zoning By-law.</p> <p>Note: Zoning By-law No. 3096 was approved on April 14, 2015 to allow existing operations with more than 300 AU to expand as a Conditional Use in the “Agricultural” Zone.</p>	MR

Provincial Technical Overview of TRC 12-081 – Northern Breeze Colony Farms Ltd.

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
8	Identified any unsealed abandoned wells on the project site or spread fields	X	<p>The proposal identifies that the water use for the proposed livestock operation is from the existing two wells and a dug out located at SE 28-13-6W, NW 21-13-6W and NW 35-13-6W, respectively. The provincial water well database contains information for wells associated with the proposed livestock operation. The database indicates that there are wells present within the spread field locations. If any of these wells are in use then a minimum buffer as outlined in regulations (<i>Environment Act</i>, Livestock Manure and Mortalities Management Regulation) must be maintained during spreading. These wells should be located and properly sealed if they are still present and not in use and a sealed well report must be filed with the Groundwater Management Section of Agriculture and Resource Development for each well sealed. Information on well sealing and well sealing reports are available from Agriculture and Resource Development (204-945-6959) or: https://gov.mb.ca/water/groundwater/wells_groundwater/index.html.</p> <p>All but the most basic wells should be sealed by a well drilling professional. A list of currently licensed well drilling professionals can also be accessed from the above web page.</p>	ARD ³
9	Identified suitable manure storage methods	X	<p>A permit to construct the proposed manure storage facility must be obtained, prior to initiating any of the construction work, in accordance with the Livestock Manure and Mortalities Management Regulation. An application for a permit to construct the manure storage facility must be submitted to Environmental Approval Branch of Conservation and Climate (EABDirector@gov.mb.ca). Design guidelines and application forms are available at: https://www.gov.mb.ca/sd/waste_management/livestock_program/index.html.</p>	CC
10	Identified acceptable manure application methods	X	<p>The proponent must submit and adhere to a manure management plan approved for the facility per the Livestock Manure and Mortalities Management Regulation (MR 42/98).</p>	CC
11	Mortalities disposal methods identified as composting	X	<p>The proponent has indicated that mortalities dealt with composting. This considered acceptable under the Livestock Manure and Mortalities Management Regulation. More specific information is included in the Livestock Manure and Mortalities Management Regulation and at: https://www.gov.mb.ca/sd/waste_management/livestock_program/index.html</p>	CC

³ Water Science and Watershed Management Branch

Provincial Technical Overview of TRC 12-081 – Northern Breeze Colony Farms Ltd.

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
12	Proposed suitable setback distances from water and property lines for manure, livestock and mortalities	X	<p>The existing composting site is located closer to south property line (92 m) where there is a roadside ditch. As the minimum required setback distance is 100m, measures will be taken to relocate the composting area to outside the minimum setback distances in the near future.</p> <p>All other setback distances meet minimum requirements set out in the Livestock Manure and Mortalities Management Regulation MR 42/98.</p>	CC
13	Indicated if proposed project site is within designated flood area or is otherwise at risk of flooding	X	<p>This site is at flood risk during the design flood event. The applicant has confirmed that parts of the site were inundated during the June 13, 2011 flood event.</p> <p>The Flood Protection Level for this site is 249.94 metres (820 feet) CGVD28. Any new construction should be built so that the main floor elevation is at or above the flood protection level.</p>	MI
14	Proposed acceptable odour control measures	X	<p>The proponent has indicated that there is an existing shelterbelt. Should odour become a problem for neighbouring residents, there is a complaints process under <i>The Farm Practices Protection Act</i>. A person who is disturbed by any odour, noise, dust, smoke or other disturbance resulting from an agricultural operation may make a complaint, in writing, to the Manitoba Farm Industry Board. The Act is intended to provide for a quicker, less expensive and more effective way than lawsuits to resolve nuisance complaints about farm practices. It may create an understanding of the nature and circumstances of an agricultural operation, as well as bring about changes to the mutual benefit of all concerned, without the confrontation and the expense of the courts.</p>	ARD ⁴
		X	<p>Section 116(1) of <i>The Planning Act</i> allows municipal councils to require a manure storage cover and the planting of a shelter belt as a condition of approval.</p> <p>Note: The proponent indicates that there is an existing shelterbelt.</p>	MR

⁴ Agri-Resource Branch

Provincial Technical Overview of TRC 12-081 – Northern Breeze Colony Farms Ltd.

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
15	Proposed sufficient and suitable land for manure spreading with minimum setbacks from water sources	X	The required land base for Northern Breeze Colony Farms Ltd is 1,767 acres. Northern Breeze Colony Farms Ltd has exceeded the land requirement by demonstrating that they have access to 3,273 suitable acres with soil tests. They have demonstrated access to an additional 2,843 acres without soil tests, for a total land base of 6,116 acres. Additional information is provided in Appendix A.	ARD⁵
		X	During manure spreading, setback distances to all groundwater and surface water features as prescribed under the Livestock Manure and Mortalities Management Regulation should be considered as a minimum distance.	CC
16	Indicated if spread fields are located in the Red River Valley Special Management Area or any other regularly inundated area	X	The proponent has indicated that spread fields are not located within the Red River Valley Special Management Area or any other regularly inundated area.	CC
17	Proposed spread fields that meet development plan and zoning by-law requirements	X	<p>Development Plan The proposed spread fields, all located in the RM of Portage la Prairie, are all designated Agricultural Area (Portage la Prairie Planning District Development Plan By-law No.02-2018) and meet the Development Plan requirements.</p> <p>Zoning The proposed spread fields, all located in the RM of Portage la Prairie, are all zoned Agricultural General “AG” Zone (RM of Portage la Prairie Zoning By-law No.3096) and meet the Zoning By-law requirements.</p>	MR

⁵ Agri-Resource Branch

Provincial Technical Overview of TRC 12-081 – Northern Breeze Colony Farms Ltd.

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
18	Proposed acceptable manure transportation methods	X	The transport of livestock manure is subject to Section 9 of the Livestock Manure and Mortalities Management Regulation. The proponent has indicated a dragline for hogs and solid spreader for turkeys/layers will be used as means of manure transportation. This is considered acceptable under the Livestock Manure and Mortalities Management Regulation.	CC
		X	Please be advised that any structures placed within the controlled area of PR 227 and PR 240 (125 feet from the edge of the right-of-way) require a permit from our office. The contact is Sheena del Rosario at (204) 583-2433 or Sheena.Delrosario@gov.mb.ca . The placement of temporary draglines or any other temporary machinery/equipment for manure application within the right-of-way of PR 227 and PR 240 requires permission from our regional office in Portage. Please contact the Regional Planning Technologist, Denise Stairs at (204) 871-2239 or Denise.Stairs@gov.mb.ca . In addition, please notify the Regional Planning Technologist for the placement of temporary draglines or other temporary equipment for manure application within the controlled area of PR 227 and PR 240 (125 feet from the edge of the right-of-way).	MI
19	Identified suitable trucking routes and access points	X	The proposed truck haul route utilizes a municipal road connecting onto PR 227. We do not anticipate any significant increase in use.	MI
20	Identified proposed trucking routes – local roads	X	The proposed site is accessed directly by a municipal road, 32 nd RDW leading onto PR 227. As per Section 116(2) of <i>The Planning Act</i> , municipalities as a condition of approval may require proponent to enter into a development agreement regarding the condition and upkeep of local roads used as truck haul routes.	MR

Provincial Technical Overview of TRC 12-081 – Northern Breeze Colony Farms Ltd.

Item No.	Provincial Requirements	Confirmed	Related Provincial Safeguards	Dept.
21	Known rare species will not be impacted on new site/lands	X	<p>The information provided in the assessment suggest that there will not be any conflicts with species protected under the <i>Endangered Species and Ecosystems Act</i> and/or <i>Species at Risk Act</i>, or designated as rare or uncommon by the Manitoba Conservation Data Centre (MBCDC). This review is based on existing data known to the MBCDC of the Wildlife and Fisheries Branch at the time of the review. These data are dependent on the research and observations of our scientists and reflects our current state of knowledge. An absence of data does not confirm the absence of any rare or endangered species. Many areas of the province have never been thoroughly surveyed, however, and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should, therefore, not be regarded as a final statement on the occurrence of any species of concern. All future observations of rare or endangered species made by the proponent should be reported to the MBCDC for further review.</p> <p>The Wildlife and Fisheries Branch appreciates the “Strategy to avoid Eastern Wood-Pewee’s habitat destruction” provided by the proponent.</p>	ARD ⁶

Provincial Departments: Agriculture and Resource Development (ARD), Conservation and Climate (CC), Infrastructure (MI), Municipal Relations (MR)

⁶ Wildlife and Fisheries Branch

D. PUBLIC COMMENTS

No public comments received.

E. CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The information contained in the Site Assessment submitted by the proponent generally meets provincial requirements. In addition, based on available information it has been determined that the proposed operation will not create a risk to health, safety or the environment, or that any risk can be minimized through the use of appropriate practices, measures and safeguards.

Recommended Actions to Council

1. As per Section 114(1) of *The Planning Act*, at least 14 days before the date of the hearing, Council must:
 - a) send notice of the hearing to
 - i. the applicant,
 - ii. the Minister (c/o the Portage Community Planning Office),
 - iii. all adjacent planning districts and municipalities, and
 - iv. every owner of property located within three kilometres of the site of the proposed livestock operation, even if the property is located outside the boundaries of the planning district or municipality;and
 - b) post a copy of the notice of hearing on the affected property in accordance with Section 170 of *The Planning Act*.
2. Council should specify the type(s) of operation, legal land location, number of animals in each livestock category and total animal units in its Conditional Use Order.
3. As per Section 117 of *The Planning Act*, Council must send a copy of its Conditional Use Order to
 - a) the applicant,
 - b) the Minister (c/o the Portage Community Planning Office), and
 - c) every person who made representation at the hearing.
4. Councils are requested to include in their resolution and/or Conditional Use Order, notification that the applicant may appeal council's decision to reject the application or appeal a condition imposed by council related to its approval as per Section 118.2 of *The Planning Act*.
 - As per Section 118.2(2)(b), an applicant may appeal the following decisions of a board or council to the Municipal Board:

for an application for approval of a conditional use made in respect of a large-scale livestock operation,

 - (i) a decision to reject the application,
 - (ii) a decision to impose conditions.

5. As per Section 118, no development or expansion of a livestock operation that is the subject of an application under this Division may take place until
 - (a) the application is approved and the applicant complies, or agrees to comply, with any condition imposed on the approval under this Division; and
 - (b) the applicant obtains every approval, including any permit or licence, required under an Act, regulation or by-law in respect of the proposed operation or expansion, and complies with, or agrees to comply with, any condition attached to the approval.
6. Council is welcome to contact Manitoba Conservation and Climate, Environmental Approvals Branch or Regional Environmental Compliance and Enforcement staff with respect to the Livestock Manure and Mortalities Management Regulation (M.R. 42/98) including compliance and enforcement issues.

Recommended Actions to Proponent

1. That any additional measures identified through subsequent provincial licencing or permitting in order to minimize any identified risks to health, safety and the environment be undertaken.
2. That as per Section 118.2(2)(b), an applicant may appeal the following decisions of a board or council to the Municipal Board:
 - (i) a decision to reject the application,
 - (ii) a decision to impose any condition on the approval.

F. TECHNICAL REVIEW COMMITTEE MEMBERS

Name	Department	Title <i>Branch</i>	Contact
Don Malinowski	Municipal Relations	Senior Planner <i>Community Planning Branch</i>	204-945-8353
Petra Loro	Agriculture and Resource Development	Agri-Ecosystems Specialist – Livestock Environment <i>Lands Branch</i>	204-918-0325
Barsha Sagan	Conservation and Climate	Environmental Engineer <i>Environmental Approvals</i>	204-795-7175
Jeff DiNella	Infrastructure	Senior Development Review Technologist <i>Highway Planning and Design Branch</i>	204-945-2664

Appendix A

Lands Branch ARD – Land Requirements

Northern Breeze Colony Farms Ltd has met the land requirements for 720 sows (farrow to finish), 12,000 layers and 9,000 turkeys as follows:

In areas of lower livestock intensity such as the RM of Portage La Prairie, it is currently the Province of Manitoba's policy to require sufficient suitable land for all of the nitrogen and half of the phosphorus generated by the livestock. This policy assumes that more land is available in the region to balance manure phosphorus with crop phosphorus removal, should it be necessary in the future.

Typical, modern feeding practices for pig production were used to estimate nutrient excretion for Northern Breeze Colony Farms Ltd. Realistic, long-term 10-year crop yields from the Manitoba Agricultural Services Corporation (MASC) for the RM of Portage La Prairie were used to estimate crop nitrogen uptake and phosphorus removal rates for the crop rotation specified in the proposal.

Land suitability is determined using soil testing for phosphorus and soil survey to establish the agriculture capability. All of the lands with soil tests were below 60 ppm Olsen P, as required to be considered suitable. Detailed soil survey is available to determine the agriculture capability of the land. The agriculture capability of the land with soil tests included in the proposal is primarily Class 1 to 3 (prime agricultural land) with small areas of Class 5. The main limitations are lack of moisture (M), salinity (N) and wetness (W).

The required land base for Northern Breeze Colony Farms Ltd is 1,767 acres. Northern Breeze Colony Farms Ltd has exceeded the land requirement by demonstrating that they have access to 3,273 suitable acres with soil tests. They have demonstrated access to an additional 2,843 acres without soil tests, for a total land base of 6,116 acres.

Water Branch ARD

Proper nutrient management applications that avoid excess loss of nutrients to surface waters are needed on lands receiving manure in southern Manitoba because long-term trend analysis of total phosphorus and total nitrogen has shown significant increases in these nutrients in the Assiniboine and Red rivers (Jones and Armstrong 2002).

The proponent is planning to apply manure in fall. Liquid manure will be injected and solid manure incorporated within 48 hours. Injection and incorporation are both practices which reduce the risk to surface water when compared to surface broadcast alone.

For most crops, manure contains an excess of phosphorus (P) compared to nitrogen (N) and as a result, application at N-based rates causes a buildup of soil P. Practices which reduce N losses from the manure improve the N:P ratio in the manure and help slow P buildup when manure is applied at N-based rates. The proponent is planning to apply liquid manure with full injection that will reduce N losses compared to other application methods. Incorporation of solid manure will also reduce the N losses from the solid manure compared to broadcast without incorporation applications.

The proponent has acknowledged the setback areas for all water features have been observed and excluded from land base calculations. Setbacks should be clearly communicated to and observed by those involved in manure application to minimize the risk of nutrients entering surface and groundwater.

Manitoba has included phosphorus as a nutrient by which fertilizer application through manure, synthetic fertilizer, and municipal waste sludge to agricultural lands may be limited. To remain environmentally sustainable over a long-term planning horizon of 25 years or more, the proponent must be able to balance phosphorus inputs from applied manure and other nutrient sources such as commercial fertilizers with crop removal rates to avoid further build-up in soils. Consequently, sufficient land base must be available such that manure can be applied at no more than 1 times crop P removal rates (P balance). For long-term planning purposes, the proponent needs to have sufficient land available to ensure that manure can be applied at 1 times crop P removal. The proponent acknowledges that 3,535 acres may be required for the long-term environmental sustainability of the operation. The proponent has identified 3,273 acres for manure application with a potential for an additional 2,843 acres once soils are tested. Application to meet crop N requirements is estimated to use 1,756 acres. Application at 2 times the crop removal of P is estimated to use 1,767 acres (3,535 acres is estimated to achieve P balance [phosphorus removal equal to phosphorus application] with current crop choices and yield potential).

As phosphorus levels build up in soils, the concentration of phosphorus in runoff to surface waters increases. It is important to rotate manure application across all spread fields and whenever possible focus manure applications on fields with low Olsen-P soil test levels so as to prevent excessive P buildup when applying manure at rates above P balance (P removal by harvested crops).

The soil test reports indicate elevated soil salinity in some spread fields and the soil survey map shows that saline soils are common in this area. Salinity is usually highly variable within a field and the more saline areas generally have reduced yields and are therefore prone to nutrient buildup when manure (or fertilizer) is applied at the same rate as more productive parts of the field. Saline areas that are less productive should be monitored for nutrient buildup and may require different management.

During manure spreading, setback distances to all groundwater features as prescribed under the Livestock Manure and Mortalities Management Regulation should be considered as a minimum distance.