

TECHNICAL REVIEW COMMITTEE

**A TECHNICAL REVIEW REPORT
PREPARED FOR**

**THE RURAL MUNICIPALITY
OF
GREY**

Divorne Farms Ltd

SE 08-08-06W

A faint, grayscale background image of a long, low farm building with a gabled roof, situated in a field of tall grass.

November 22, 2013

INTRODUCTION

The Technical Review Committee (TRC) consists of representatives from the following provincial departments:

- Agriculture, Food and Rural Development (MAFRD);
- Conservation & Water Stewardship (CWS);
- Infrastructure & Transportation (MIT);
- Municipal Government (MG); and
- Any other department that may have an interest, which may be consulted during the process.

The Technical Review Coordinator, the Department of Municipal Government, chairs the committee.

The Technical Review Committee Report includes the following:

- An assessment of completeness and nature of the information contained in the Site Assessment provided by the project proponent that enables the TRC to conduct its review.
- A summary of public comments along with proponent and departmental responses, if any.
- Recommendations to the Municipal Council and the proponent based upon a review of the information provided by the proponent.

Should the Municipal Council provide conditional approval of the proposal, the project proponent will be required to obtain various permits and licenses from the Province to address in greater detail environmental aspects of the proposal.

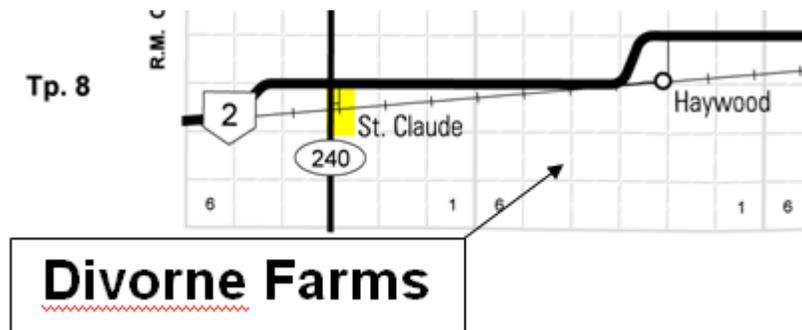
B. DESCRIPTION OF PROPOSED LIVESTOCK OPERATION

To view a detailed description go to

www.gov.mb.ca/ia/programs/livestock/public_registries.html

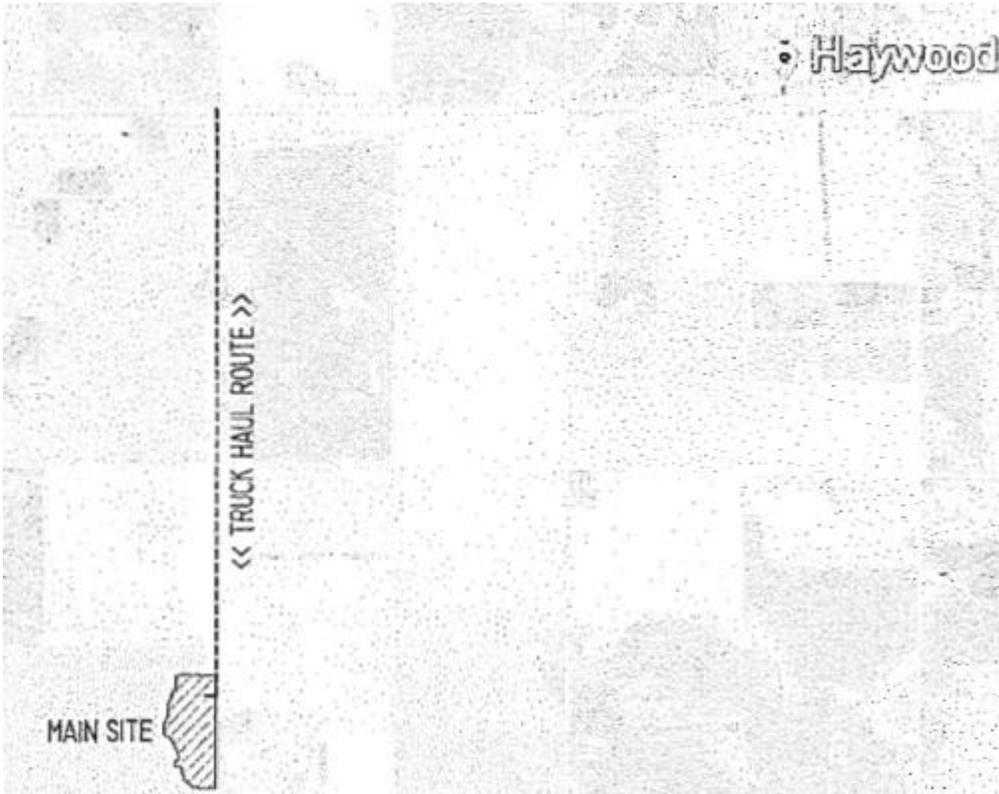
Applicant: Divorne Farms Ltd

Site Location: Approximately 2 miles south west of Haywood, in the R.M. of Grey (SE 08-08-06WPM) Refer to map below.



Proposal: To expand an existing dairy operation with the addition of 50 milking cows for a total of 600 Animal Units. This will involve the following:

- Constructing a new robotic barn
- Decommissioning the existing earthen manure storage facility and using a steel slurry storage tank
- Consuming 8,730 imperial gallons of water per day
- Spreading manure over 2,360 suitable acres
- Composting dead animals on site
- Using the truck haul routes as shown on the next page



C.SITE ASSESSMENT AUDIT

The Audit of: Divorne Farms Ltd

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
2.0 Description of Operation	X	The applicant has provided a detailed description of the current operation and proposed expansion.	MG
3.0 Nature of Project	X	The applicant has clearly defined the nature of the project.	MG
4.0 Proposed Type and Size of Operation	X	Divorne Farms Ltd is proposing to expand their dairy operation to 300 mature cows (lactating and dry) plus associated livestock for a total of 600 animal units.	MAFRD
5.0 Animal Confinement Facilities	X	Climate Change & Environmental Protection – Environmental Programs and Strategies: Manitoba Conservation and Water Stewardship regulates the construction of manure storage facilities (MSF) by requiring the proponent to submit an "Application for Permit to Construct, Modify or Expand a Manure Storage Facility". The definition of MSF does not include gutter or pit (including under barn storage) used to contain liquid or semi-solid manure for less than 30 days for the purpose of moving the manure to a storage facility.	CWS
6.0 Environmental Farm Planning	X	Divorne Farms Ltd has indicated they have a current Environmental Farm Plan.	MAFRD
7.0 Water	X	Climate Change & Environmental Protection - Environmental Programs and Strategies A warning was issued to Divorne Farms Ltd. on October 28, 2013 for failure to submit the annual livestock source water monitoring analysis report to Manitoba Conservation and Water Stewardship for the 2012 sampling year. Water Stewardship - Water Science and Management 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); All unused and abandoned wells on the site and spread fields should be properly sealed and a sealed well report filed with the Groundwater Management Section of Conservation and Water Stewardship. Information on well sealing is available from Conservation and Water Stewardship or:	CWS

The Audit of: Divorner Farms Ltd

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		<p>www.gov.mb.ca/waterstewardship/water_info/misc/abandoned_wells.pdf. It is recommended that all but the most basic wells should be sealed by a well drilling professional.</p> <p>Water Stewardship - Water Use Licensing Upon receipt of additional information regarding Divorner Farms' water source and water usage, it has been determined that Divorner Farms will need to apply for a water rights license. An application has been forwarded to the proponent.</p>	
8.0 Manure Related	X	<p>Climate Change & Environmental Protection - Environmental Approvals The existing earthen manure storage facility requires registration to achieve compliance. Environmental Approvals branch has no concerns with the report.</p> <p>Climate Change & Environmental Protection - Environmental Programs and Strategies Divorner Farms Ltd. has submitted the annually required Manure Management Plan for the 2014 crop year. No deficiency was identified.</p>	CWS
8.1 Land Available/Required for Manure Application	X	<p>In order to satisfy the Province's land base requirement for phosphorus, Divorner Farms Ltd requires a minimum of 692 acres of suitable land. This acreage is also adequate for the management of the manure N. To ensure the long-term environmental sustainability of the operation, Divorner Farms Ltd may require up to a total of 1384 acres to balance manure P with crop P removal over the life of the operation.</p> <p>Divorner Farms Ltd has identified 2360 suitable acres for manure application. As such, Divorner Farms Ltd has greatly exceeded the current Provincial land base requirements for phosphorus and nitrogen and has enough land to ensure the long-term environmental sustainability of the operation when beneficial management practices are used.</p> <p>Department of Municipal Government The identified spread fields are compliant with the Development Plan and Zoning By-law. They are designated "Agriculture" in the Grey-St. Claude Development Plan and are located within the "AG" Agricultural General Zone in the R.M. of Grey Zoning By-Law No. 5-03.</p> <p>Climate Change & Environmental Protection - Environmental Programs and Strategies: Manitoba Conservation and Water Stewardship requires permits for construction of manure storage facilities. As part of the review operators must identify manure spread fields. Divorner Farms Ltd. is not located in "certain areas", therefore the proponent must demonstrate access to sufficient suitable land to apply manure at a rate equivalent to two times the crop removal rate of phosphorus. Manitoba Conservation and</p>	CWS MG MAFRD

The Audit of: Divorne Farms Ltd

Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		<p><i>Water Stewardship is sufficiently satisfied with the proposal for dairy operation in this respect.</i></p> <p><i>Soil test results for fields identified as SE, NE and NW 05-08-06 W, 06-08-06 W and N 16-08-06 W (class 3M and 4M soil) indicate residual nitrate-nitrogen levels, 106, 94 and 139 lb/acre respectively, exceeding the regulatory concentration allowed on a class 3M, 3MW or 4 soil of 90 lbs/acre. Additional manure should not be applied to this land until the soil nitrate-nitrogen concentration declines to a concentration where residual levels do not exceed the regulatory limit of 90 lb/acre for class 3M, 3MW or 4 soils. Fields with residual nitrate-nitrogen concentrations in excess of 90 lbs/acres, for class 3M, 3MW or 4 soils, would not likely be registered for manure application as part of a Manure Management Plan.</i></p> <p>Water Stewardship - Water Science and Management <i>The proponent has acknowledged that land base calculations have taken into account the required setbacks for water features. It is important that nutrients not be applied within the Nutrient Buffer Zone as outlined in the Nutrient Management Regulation (62/2008).</i></p> <p><i>As per the Nutrient Management Regulation (62/2008) no person shall apply a substance containing nitrogen or phosphorus to land within nutrient management zone N4. Agri-Maps indicate some areas of Class 6 soil or zone N4, on sections NW 03-08-06W and NW, SW, SE 16-08-06W.</i></p> <p><i>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 excessive build-up in soils. Consequently, sufficient land base or economically achievable treatment technologies must be available so that manure can be applied at no more than 1 times crop removal rates. Over the short-term, regulations allow manure to be applied at no more than 2 times crop removal rates when soil-test phosphorus is between 60 ppm and 120 ppm. Once phosphorus levels reach 120 ppm, applications of manure would be restricted to no more than 1 times crop removal rates. It should be noted that soil-test phosphorus levels of 60 ppm are well above phosphorus needs for most crops (over 20 ppm is usually considered very high), and that as excess phosphorus levels build up in soils, greater losses occur to surface and ground water. For long-term planning purposes, the proponent needs to have sufficient land available to ensure</i></p>	

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Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		<p>that manure can be applied at 1 times crop removal;</p> <p>To ensure that manure can be applied at 1 times the crop removal 1384 acres is needed. Sufficient land, 2360 acres, has been identified by the proponent to ensure that manure can be applied at 1 times crop removal over the long term.</p>	
9.0 Mortalities Disposal	X	<p>Climate Change & Environmental Protection – Environmental Programs and Strategies: In accordance with the Livestock Manure and Mortalities Management Regulation 42/98, mortalities must be kept in a secure storage room, covered container or secure location; and continuously frozen or refrigerated, if not disposed of within 48 hours after death.</p> <p>Composting mortalities is acceptable provided the composting site is located at least 100-meters from any surface watercourse, sinkhole, spring or well, and the operation's boundaries. Mortalities must be composted in a manner that does not cause pollution of surface water, groundwater or soil, and the composting facility and process must be acceptable to the Director of Manitoba Conservation and Water Stewardship.</p> <p>Application of composted mortalities to land is prohibited between November 10 of one year and April 10 of the following year.</p> <p>In the event of a mass mortality, operators should contact the local Manitoba Conservation and Water Stewardship office. The proponent should prepare a contingency plan in case of a catastrophic event resulting in mass mortalities.</p>	CWS
10.0 Project Site Description	X	<p>The subject proposal, located at SE 08-08-06W in the RM of Grey , is designated as "A" Agriculture in The Grey-St. Claude Planning District Development Plan No. 2/99. As such, the proposed expansion of the livestock operation complies with existing policies allowing for such developments to take place.</p> <p>However, as this is an expansion and intensification of an existing livestock operation exceeding 300 animal units it is deemed as a conditional use In accordance with the Development Plan, Council may require an owner of a new or expanding livestock operation to enter into a development agreement regarding items specified in The Planning Act.</p> <p>The subject proposal is zoned as "AG" Agricultural General Zone in the RM of Grey Zoning By-Law No.5/03. As such, the proposed expansion of the livestock operation is in compliance with the bulk requirements in place for "AG" zoned sites.</p> <p>Site Area (Acres) – 80 acres (minimum)</p>	MG (CRP Regional Office)

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Site Assessment Sections	Meets Requirements for TRC Review (type "X")	Comment	Reviewing Department
		<p>Site Width (Feet) – 1,000’ (minimum) Front Yard (Feet) – 125’ (minimum) Side Yard (Feet) – 25’ (minimum) Rear Yard (Feet) – 25’ (minimum)</p> <p>As the proposed Livestock Operation expansion is in compliance with both the Grey-St. Claude Planning District Development Plan No. 2/99 and the RM of Grey Zoning By-Law No. 5/03, the Portage Community and Regional Planning office has no concerns or objections with the proposal.</p>	
<p>10.0 Project Site Description (Native Prairie, Wildlife Mgt Areas, Crown Land)</p>	<p>X</p>	<p>Regional Services and Parks – Central Region The Central Region Wildlife Section has no wildlife related concerns with the proposed expansion of the Divorner Farms Ltd. dairy operation near Haywood, Manitoba.</p> <p>Lands Management & Planning Section: Land Management & Planning Section of Manitoba Conservation and Water Stewardship has no concerns as the parcels of land required for spreading purposes does not impact any Crown lands.</p>	<p>CWS</p>
<p>11.0 Truck Haul Routes and Access Points</p>	<p>X</p>	<p>This operation is in the SE ¼ of 8-8-6W in the RM of Grey. It does not front onto the provincial highway system.</p> <p>Based on the available information we have no concerns with this proposal.</p>	<p>MIT</p>

Agriculture, Food and Rural Development - MAFRD
 Conservation and Water Stewardship - CWS
 Infrastructure and Transportation – MIT
 Municipal Government - MG

D. PUBLIC COMMENTS & DISPOSITIONS

N/A

E.CONCLUSIONS & RECOMMENDATIONS

(This section compiled by: TRC Coordinator)

Overall Conclusion

- Divorner Farms Ltd has identified 2360 suitable acres for manure application. As such, Divorner Farms Ltd has greatly exceeded the current Provincial land base requirements for phosphorus and nitrogen and has enough land to ensure the long-term environmental sustainability of the operation when beneficial management practices are used.

Based on the Site Assessment submitted by the producer and available information, the TRC recommends the following appropriate practices, measures and safeguards be taken;

Recommended Actions to Council

- Council should specify the type(s) of operation, legal land location, number of animals in each livestock category and total animals units in its Conditional Use Order.

Recommended Actions to Proponent

- The proponent is required to register the existing earthen manure storage facility in order to achieve compliance with the *Livestock Manure and Mortalities Management Regulation* (M.R. 42/98).
- The proponent is required to submit an "Application for Permit to Construct, Modify, or Expand a Manure Storage Facility" to Manitoba Conservation and Water Stewardship for each Manure Storage Facility (MSF) to be constructed, modified or expanded;
- Construction of a MSF shall not commence until a permit is granted by the Director, and adequate notification is given to Manitoba Conservation and Water Stewardship;
- The proponent shall ensure the MSF, alone or in combination with other MSFs located on the property of the agricultural operation, is/are of sufficient capacity to store all livestock manure produced and used by the agricultural operation;
- Livestock manure shall be stored until such a time that it can be applied as fertilizer.

- The proponent shall ensure residual nutrient levels for all spread fields are compliant with the *Livestock Manure and Mortalities Management Regulation* (M.R. 42/98).
- The proponent is required to submit the annual livestock source water monitoring analysis report to Manitoba Conservation and Water Stewardship no later than December 31 of each year.
- All unused and abandoned wells on the site and spread fields should be properly sealed and a sealed well report filed with the Groundwater Management Section of Conservation and Water Stewardship.
- Divorner Farms will be required to apply for a water rights licence for the groundwater needed to service the livestock operation.
- The proponent should prepare a contingency plan in the event of a catastrophic event resulting in mass mortalities.

*** and any additional measures identified through subsequent Provincial and Federal licensing or permitting in order to minimize any identified risks to health, safety and the environment.**

The overall conclusion represents the consensus of the TRC Members.

F. TECHNICAL REVIEW COMMITTEE MEMBERS

Name	Department	Title	Address	Telephone
Don Malinowski Chair	Municipal Government	Senior Planner, TRC Community & Regional Planning Branch	604-800 Portage Avenue Winnipeg	945-8353
Petra Loro	Agriculture Food and Rural Development	Livestock Environment Specialist	545 University Crescent Winnipeg	945-3869
Andrea Bergman	Conservation and Water Stewardship	Technical Review Officer Environmental Programs & Strategies Branch	1007 Century Street Winnipeg	945-4384
Heinz Lausmann	Infrastructure and Transportation	Senior Highway Planning Engineer Highway Planning and Design Branch	1420-215 Garry Street Winnipeg	945-2664

APPENDIX

Land Base Assessment for the Divorne Farms Ltd TRC Report October 4 2013 Petra Loro, Livestock Environment Specialist, MAFRD

Manitoba Agriculture, Food and Rural Development (MAFRD) assessed the land base for manure application as provided by the proponent in order to provide Council with the assurance that adequate suitable land is available for this operation. The Province will require sufficient suitable land when the proponent applies for the manure storage facility permit.

In the Rural Municipality of Grey, it is currently the Government of Manitoba's policy to require enough suitable land to allow manure application at a rate that does not exceed the nitrogen requirements of the crop or 2 times the phosphorus that will be removed from the field in the harvested portion of the crop. Phosphorus typically determines the land base requirements. Only lands with Agriculture Capability Class 1 to 5 and recent soil tests demonstrating phosphorus (P) levels below 60 ppm Olsen P are considered suitable. Buffer strips and setbacks must be excluded.

All of the land included in the site assessment is below 60 ppm Olsen P. According to detailed soil survey, most of the land is Agriculture Capability Class 2 and 3 (prime agricultural land) with pockets of Class 5 and 6 in some fields. Ortho-photos indicate that areas of Class 6 soil are not being cropped. The soils in this area have moderate to very severe limitations due to wetness (W) and droughtiness (M) which is typical of wet sands.

MAFRD has re-calculated the land base requirement for Divorne Farms Ltd assuming 300 mature cows (lactating and dry) and associated livestock. The operation is estimated to produce about 101970 lb manure N per year and 49500 lb manure P₂O₅ per year. The crop yields used to estimate nutrient removal are long-term, 10-year (2003-1012) MASC yield averages for soil zones G and H in the RM of Grey. Based on the crop rotation indicated in the site assessment and the 10-year MASC yield averages, the average crop N uptake rate is 139 lb N per acre per year and the average crop P₂O₅ removal rate is estimated to be 36 lb P₂O₅ per acre per year.

In order to satisfy the Province's land base requirement for phosphorus, Divorne Farms Ltd requires a minimum of 692 acres of suitable land. This acreage is also adequate for the management of the manure N. To ensure the long-term environmental sustainability of the operation, Divorne Farms Ltd may require up to a total of 1384 acres to balance manure P with crop P removal over the life of the operation.

Divorne Farms Ltd has identified 2360 suitable acres for manure application. As such, Divorne Farms Ltd has greatly exceeded the current Provincial land base requirements for phosphorus and nitrogen and has enough land to ensure the long-term environmental sustainability of the operation when beneficial management practices are used.

MAFRD also reviewed the soil test reports provided by the operation. In Manitoba, manure application to land is regulated on the basis of residual soil nitrate-N limits and phosphorus thresholds. The fields identified for manure application include Class 3M and 4 soils for which the residual soil nitrate-N limit is 90 lbs/acre, and pockets of Class 5 soils for which the residual soil nitrate-N limit is 30 lbs/acre. Some of the soil test reports exceeded these limits. Manure should not be re-applied to these soils until soil tests indicate that residual soil nitrate-N levels are below the regulatory limits. Nutrient applications, including manure, are prohibited on Class 6 soils.

All of the fields identified for manure application are currently below 60 ppm Olsen P. Manure can be applied to meet the nitrogen requirements of the crop on these fields. However, this often results in more phosphorus being applied than is removed from the field and a build-up of soil test phosphorus. To slow the build-up of soil test P, no more than 2 times crop removal rates for phosphorus can be applied when soil-test phosphorus is between 60 ppm and 120 ppm. MAFRD recommends annual applications of manure to meet the N requirements of the crop and then rotation of fields that receive manure to meet this requirement. If soil test levels reach 120 ppm Olsen P, manure application rates will be restricted to no more phosphorus than what is removed in the harvested portion of the crop over the course of a rotation. Since Divorner Farms Ltd has plenty of suitable land to ensure the long-term environmental sustainability of the operation, MAFRD recommends that manure application frequency and rotation of fields be managed to keep soil test phosphorus levels below 60 ppm Olsen P.

Actual manure application rates will be determined in the manure management plan submitted to Manitoba Conservation and Water Stewardship. MAFRD provides extension support and computer software to help producers complete manure management plans. If professional services are used to prepare the plan, manure management planners must successfully complete the Manure Management Planners Course offered by the Assiniboine Community College and be a member in good standing in the Manitoba Institute of Agrologists or a Certified Crop Advisor. Under *The Pesticides and Fertilizers Control Act*, commercial manure applicators and producers that are over 300 AU in size that apply manure to land that they do not own or lease must be trained by the Assiniboine Community College and licensed by MAFRD.