



Conservation and Water Stewardship

Climate Change and Environmental Protection Division
Environmental Approvals Branch
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File: 3369.20
April 12, 2013

Joy Kennedy
Water Quality Management Section
Water Science and Management Branch
160-123 Main Street
Winnipeg, MB R3C 1A5

Dear Ms. Kennedy:

**Re: R.M. of St. Francois Xavier Wastewater Treatment Lagoon Expansion -
Environment Act Proposal**

The responses from the Technical Advisory Committee (TAC) that requested additional information regarding the R.M. of St. Francois Xavier Wastewater Treatment Lagoon Expansion Environment Act Proposal were forwarded to the proponent for response.

Please find attached the proponent's April 4, 2013 letter responding to the comments and requests for additional information presented by the TAC. Please review the information provided to determine if your comments or concerns have been satisfactorily addressed.

Your comments, if any, are required to be submitted to the Environmental Approvals Branch by April 30, 2013. No response on your part will be assumed to indicate no concern.

If you have any questions, please contact me at 204-945-7012.

Yours truly,

Jennifer Winsor, P.Eng.
Environmental Engineer

Enclosure

- c. Don Labossiere, Director – Environmental Compliance and Enforcement Branch,
Manitoba Conservation and Water Stewardship
Public Registries



April 4, 2013

Project No: 121-15696-00
MC No: 3369.20

Jennifer Winsor, P.Eng.
Conservation and Water Stewardship
Climate Change and Environmental Protection Division
Environmental Approvals Branch
123 Main Street, Suite 160
Winnipeg, MB R3C 1A5

Dear Ms. Winsor:

**RE: R.M. OF ST. FRANCOIS XAVIER – WASTEWATER TREATMENT LAGOON
EXPANSION - ENVIRONMENT ACT PROPOSAL – REVIEW RESPONSE**

Thank you for providing us with the comments received during the review period for the Environment Act Proposal (EAP) regarding the R.M. of St. Francois Xavier Wastewater Treatment Lagoon Expansion from the Technical Advisory Committee (TAC). This letter intends to address and respond to the comments and requests for additional information from Manitoba Conservation and Water Stewardship – Water Quality Management Section.

1. **Memorandum from Manitoba Conservation and Water Stewardship – Water Quality Management Section, dated March 11, 2013.**

.1 The effluent standards should not allow discharge where the total phosphorus content of the effluent is in excess of 1 milligram per litre or provide additional information on the equivalency of trickle discharge to a 1 mg/L phosphorus limit. This information must be provided before trickle discharge can be approved as a nutrient reduction strategy.

The Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011) states the following:

“Under the new province-wide nutrient standards, a 1 mg/L phosphorus limit applies immediately for all new, expanding or modified wastewater treatment facilities. Small wastewater treatment facilities (serving less than 2,000 people or equivalent) have the option of implementing a demonstrated nutrient reduction strategy instead of the 1 mg/L phosphorus limit.”

The existing R.M. of St. Francois Xavier lagoon services the existing R.M. of St. Francois Xavier population of 1,240 people. The R.M. of St. Francois Xavier is expecting a population increase of 600 people over the next 20-year period for a total 2032 population of 1,840, which is less than 2,000. Therefore, to meet the requirements of the Water Quality Standards, Objectives and Guidelines Regulation under The Water Protection Act (2011), the R.M. of St. Francois Xavier proposed to implement a nutrient reduction strategy consisting of a trickle discharge. That portion of the discharge route, between the discharge point and the existing second order drain, has been reviewed and it is now proposed to extend it by creating the serpentine flow discharge swale to the south of the proposed secondary cell, and now averages approximately 1,920 metres (See the attached drawing). The distance of the route from the discharge point of the proposed lagoon to the Assiniboine River with proposed extension is approximately 11,000 metres. A trickle discharge extending from two to four weeks will allow the vegetation and the soil in the bottom of the discharge ditch, swale and the existing secondary drain to absorb nutrients and reduce the nutrient load to the Assiniboine River.

We have checked into previous studies and reports we have done on lagoons. The typical phosphorus concentration in the effluent is usually 2-3 mg/L. In the past, we had the opportunity to monitor the flow in the discharge ditch of a lagoon where the phosphorus reduction in 1,400 metres of flow in the discharge ditch was 35 percent. That would translate into 48 percent reduction in 1,920 metres. It is expected that reduction of the final phosphorus concentration in the effluent from the R.M. of St. Francois Xavier lagoon would be about 0.96-1.44 mg/l by the time it reaches the existing second order drain. The absorption of nutrients will be continued in the existing second order drain, and by the time it reaches the Assiniboine River the phosphorus concentration is expected to be less than 1 mg/l. The proposed discharge swale will be seeded with grass. The grass cover will be mowed periodically and baled.

.2 Has the Proponent considered effluent irrigation as a discharge option?

To consider use of irrigation as a treated effluent discharge option, the R.M. of Francois Xavier would require dedicated land suitable for irrigation close to the lagoon. Land application has been an ongoing problem for other communities in the last few years. Successive years of high precipitation made it impractical and harmful to add yet more moisture to land already saturated with natural rainfall. Since surficial deposits in the area are composed of mainly lacustrine clay and alluvial deposits, which range from a few metres to 17 or more metres in thickness, the area is not suitable for discharge by irrigation, especially in wet periods.

.3 The Licencee shall actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director.

Any party involved in a future watershed based management study, plan/or nutrient reduction program for the area are welcome to contact the R.M. of Francois Xavier.

All general comments are noted.

Kind regards,

GENIVAR



Ross Webster, P.Eng.
Manager, Environmental

cc: Mr. Robert Poirier, CAO – R.M. of Francois Xavier





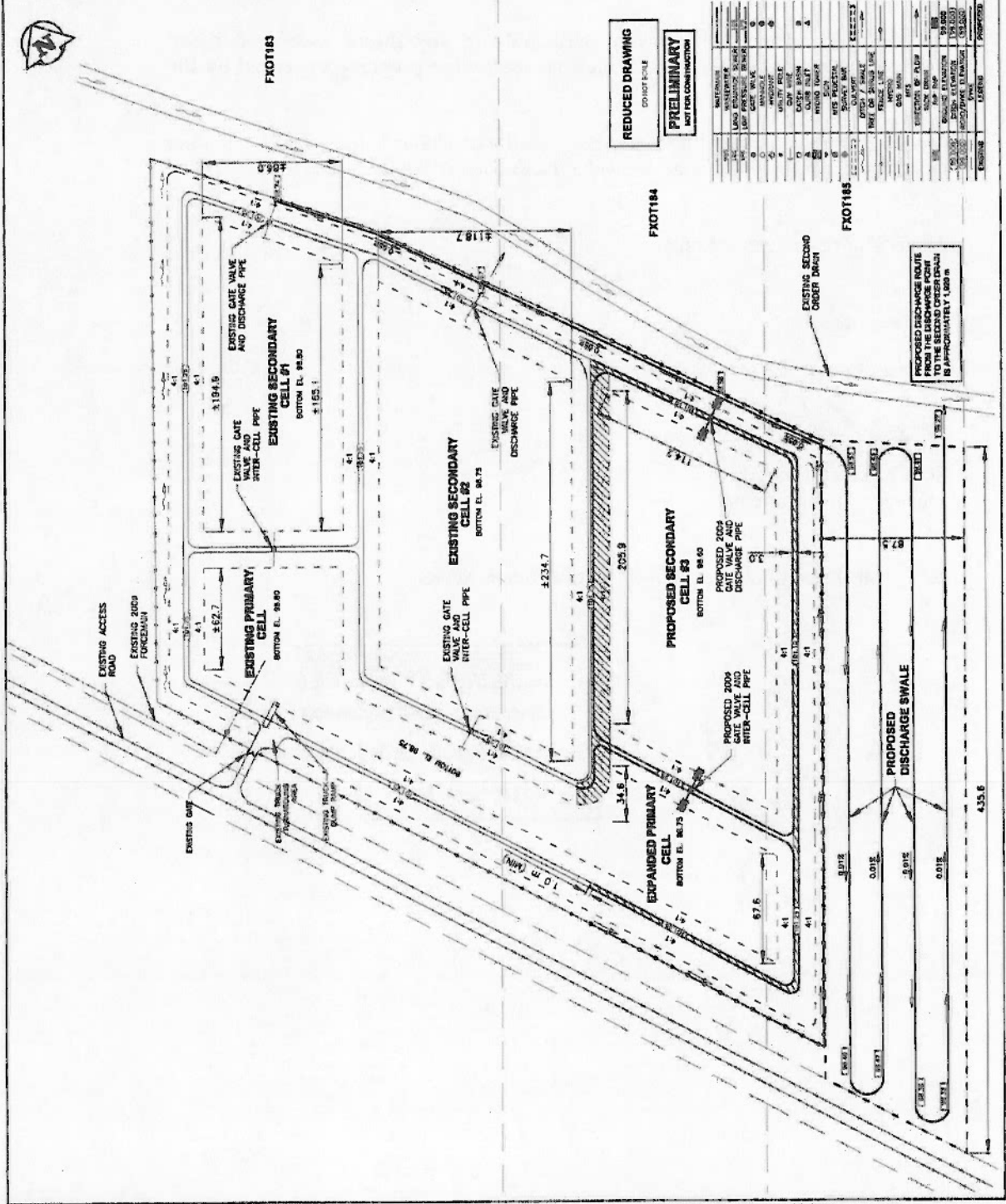
R.M. OF ST. FRANCIS XAVIER
 WASTEWATER STABILIZATION
 POND EXPANSION

R.M. OF ST. FRANCIS XAVIER
 WASTEWATER STABILIZATION
 POND EXPANSION

811 THE 100th ST. SOUTH OF THE
 HUBBARD ROAD AND THE 100th
 HUBBARD, CITY OF ST. LOUIS, MO.

PROPOSED DISCHARGE ROUTE
 C04

ISSUED FOR PER-APPROVAL INFORMATION 0



REDUCED DRAWING
 CONTOUR SCALE
 PRELIMINARY
 NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	BY	CHKD.
1	ISSUED FOR PER-APPROVAL INFORMATION	11/11/2011	RM/XAVIER	RM/XAVIER
2	PROPOSED DISCHARGE ROUTE	11/11/2011	RM/XAVIER	RM/XAVIER
3	EXISTING SECOND ORDER DRAIN	11/11/2011	RM/XAVIER	RM/XAVIER
4	PROPOSED DISCHARGE SWALE	11/11/2011	RM/XAVIER	RM/XAVIER
5	EXISTING 10' M (MIN) CLEARANCE	11/11/2011	RM/XAVIER	RM/XAVIER
6	EXISTING 10' M (MIN) CLEARANCE	11/11/2011	RM/XAVIER	RM/XAVIER
7	EXISTING 10' M (MIN) CLEARANCE	11/11/2011	RM/XAVIER	RM/XAVIER
8	EXISTING 10' M (MIN) CLEARANCE	11/11/2011	RM/XAVIER	RM/XAVIER
9	EXISTING 10' M (MIN) CLEARANCE	11/11/2011	RM/XAVIER	RM/XAVIER
10	EXISTING 10' M (MIN) CLEARANCE	11/11/2011	RM/XAVIER	RM/XAVIER

PROPOSED DISCHARGE ROUTE
 FROM THE DISCHARGE POINT
 TO THE SECOND ORDER DRAIN
 IS APPROXIMATELY 1,000 m