

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Rural Municipality of Taché – L.U.D. of Landmark
PROPOSAL NAME: Wastewater Stabilization Pond Expansion
CLASS OF DEVELOPMENT: 2
TYPE OF DEVELOPMENT: Wastewater Treatment Lagoon
CLIENT FILE NO.: 2709.20

OVERVIEW:

On December 6, 2006, the Department received an Environment Act Proposal (EAP) from the Rural Municipality of Taché for the expansion and operation of the existing L.U.D. of Landmark wastewater treatment lagoon located in NE 28 - 8 - 5 EPM in the Rural Municipality of Taché. The expansion consists of the addition of a secondary cell immediately adjacent to the west dyke of the existing wastewater treatment lagoon. Treated wastewater from the wastewater treatment lagoon will be discharged between June 15th and November 1st of any year to an existing municipal drain that discharges into the Seine River Diversion that discharges into the Red River.

The Department, on August 20, 2007, placed copies of the EAP report in the Public Registries located at 123 Main St. (Union Station), the Millennium Public Library, the Jake Epp Public Library, and the Manitoba Eco-Network and provided copies of the EAP report to the Canadian Environmental Assessment Agency (CEAA), the Clean Environment Commission, and TAC members. As well, the Department placed public notifications of the EAP in the Steinbach Carillon on Thursday, September 6, 2007. The newspaper and TAC notifications invited responses until February 21, 2007.

On October 19, 2007 Manitoba Conservation forwarded requests for additional information from the TAC to the proponent. Copies of the TAC correspondences and that request letter were sent to the Public Registries on October 19, 2007. The proponent's November 14, 2007 response to the requests was then provided to the participating TAC for review and comment on November 16, 2007.

On December 5, 2007 Manitoba Water Stewardship presented comments regarding the proponent's response. There were no other comments from the TAC.

On January 30, 2008 Manitoba Conservation forwarded comments to the proponent, indicating that their choice to exclude consideration of working toward achieving the current recommendation by Manitoba Water Stewardship only prolongs the imminent requirement of achieving limits that will be legally enforceable in the near future. In a February 12, 2008 letter to Manitoba Conservation, the proponent indicated

that they agree to make efforts to position themselves to achieve future standards regarding municipal effluent discharge limits, specifically as referenced to nutrients. In addition, it was indicated that the proponent is confirming the availability of adjacent lands for purchase such that modifications or expansion of the wastewater treatment lagoon could be made as necessary. Finally, the proponent also agreed to participate in additional nutrient reduction programs as may be required by the Director, now, or at a future date.

COMMENTS FROM THE PUBLIC:

There were no comments from the public.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Historic Resources

- *No concerns.*

Infrastructure and Transportation

- *No concerns.*

Intergovernmental Affairs

- *The land within the study area falls within the NE ¼ 28-8-5EPM, approximately 2 kilometres northwest of the LUD of Landmark. The affected parcel is located adjacent to the existing LUD of Landmark sewage lagoon. An engineering report done by Dillon Consulting indicated that the lagoon is at capacity and to accommodate future growth must be expanded;*
- *The affected land is designated “General Agricultural Area” according to the RM of Tache Development Plan and zoned “AG-80” according to the RM of Tache Zoning By-law. As is stated in Section C.3.2 of the RM of Tache Development Plan, states that “Where a sewage lagoon exists, expansion of the facility shall generally have priority over any other use that is present...” ; and*
- *No concerns.*

Sustainable Resource & Policy Management Branch

- *No concerns.*

Water Stewardship

October 3, 2007

- *The proposal provided anticipated growth rates for the community of Landmark of 3%, however the proponent is making the assumption that the hydraulic and organic loads coming from the industrial and commercial facilities (e.g. Landmark Feeds) will remain constant over the next 20 years. It may be reasonable to assume some increase in load from these sectors over the next 20 years. I noted that the last expansion of this facility occurred in 1995, so I am assuming that existing hydraulic load on the existing facility is greater than was anticipated in 1995.*
- *The proponent states that the Landmark lagoon is one of 13 municipal lagoons and 43 intensive livestock operations within the Seine River Diversion watershed, and comments briefly on the potential cumulative impact of these facilities on the fishery and water quality. The discharges and runoff from these facilities flow into the Seine River Diversion to the Red River and then Lake Winnipeg. The Lake Winnipeg Stewardship Board has recommended that all small wastewater treatment facilities, including municipal lagoons, should meet a phosphorus limit of 1.0 mg/L. The proposed phosphorus limit of 1.0 mg/L is consistent with efforts underway across Manitoba and in upstream jurisdictions to reduce nutrient loads to Lake Winnipeg and its watershed. It is desirable to recycle these nutrients on land, rather than releasing them to waterways. In the Lake Winnipeg Stewardship Board's December 2006 report to the Minister of Water Stewardship, the Board provides several strategies on how nutrient reduction could be achieved for small wastewater treatment facilities (see recommendations 14-20). The proponent has not investigated alternative disposal options, such as effluent irrigation. Manitoba Water Stewardship (Jones and Armstrong, 2001) reported that total phosphorous concentrations have increased by over 28.8 % in the Red River (as measured at Selkirk) from 1978 to 1999, while total nitrogen concentrations have increased by 57.8 % over the time period. This trend analysis study also found that total nitrogen levels in the Seine River have increased 74.9 % between 1973 and 1999, while total phosphorous levels in the Seine River have increased dramatically (187.7%) over the same time period. Clearly, more needs be done to recycle valuable nutrients on land, rather than discharging them directly into waterways where they impair the health of Lake Winnipeg and its tributaries.*
- *The proponent has not provided specific details on the setback distances of the expansion from the bank of the Seine River Diversion. The map in Appendix B shows the existing lagoon and proposed expanded cell to be very close to the diversion. The license for this facility should ensure that there is an adequate setback distance to comply with the proposed Nutrient Management Regulation under The Water Protection Act.*

- *The Water Quality Management Section is concerned with any discharges that have the potential to impact the aquatic environment and/or restrict present and future uses of the water. Therefore it is recommended that the license require the proponent to actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director, for the Seine River and Red River watersheds.*
- *Fisheries Branch has reviewed this proposal for a sewage lagoon expansion. While they are proposing the addition of another cell, the current discharge route and effluent discharge window (June 15th - October 31st) will remain the same. Given the short distance to the Seine River diversion it is really important that the clay liner is built to specs to ensure no groundwater contamination and the effluent meets or exceeds Manitoba Water Quality Standards, Objectives and Guidelines. Similarly sediment and erosion control measures need to be implemented until the site is stabilized to minimize sediment entering the river.*

Proponent Responses – November 14, 2007:

- In response to comments provided in Manitoba Water Stewardship's letter correspondence to Manitoba Conservation dated October 3, 2007, the hydraulic loading from commercial/industrial facilities is based upon water demand at each respective facility, which is metered by the Municipality. If we assume a 1% annual increase in wastewater production from each of the existing commercial/industrial facilities, an additional storage capacity of 2,700 m³ would result for the projected Year 20 design. This represents 1.5% of the total required storage capacity for year 20, which is relatively insignificant. The projected rural population is based upon an estimate of 75 additional homes per year being constructed within the Municipality every year for the next 20 years, and that wastewater from all homes within the Municipality is discharged into the Landmark lagoon. Therefore, the projected hydraulic loading includes sufficient contingency for additional loading for a potential increase in hydraulic loadings from commercial/industrial facilities in the Municipality. As documented in the EAP, if any significant, "wet" (i.e. high water use/sewage producing) commercial or industrial facilities are to be developed or altered in the future, the capacity of the lagoon would have to be re-assessed.
- Effluent standards for phosphorus in municipal lagoons do not exist under the Manitoba Water Quality Standards, Objectives, and Guidelines. However, at the request of the Director, the proponent may be required to sample, monitor, analyze, and/or investigate specific areas of concern regarding any segment, component, or aspect of pollutant storage, containment, treatment, handling, disposal, or emission systems, for such pollutants or ambient quality, aquatic toxicity, leachate characteristics, and discharge or emission rates, for such duration and at such frequencies as may be specified.

The LUD of Landmark supports the application of a higher standard for phosphorus concentrations in the order of 1.0 mg/L. However, Landmark is of the opinion that

this standard should not be applied solely to Landmark's lagoon expansion. Landmark notes that the R.M. of Richot was granted a licence (Licence No. 2776) for the St. Adolphe lagoon earlier this year (July 31, 2007) and phosphorus limits were not included with their discharge effluent requirements. Effluent from the St. Adolphe lagoon is also discharged into the Seine River Diversion - Red River - Lake Winnipeg, via the St. Adolphe Coulee.

- As per the proposed *Nutrient Management Regulation* under *The Water Protection Act*, a minimum set-back distance of 3 metres is required between the facility and the Seine River Diversion. The proposed expansion (as well as existing facility) is approximately 15 metres from the top of the banks of the Seine River Diversion.
- As identified in the previously submitted EAP (see Section 3.4), the proponent is willing to actively participate in any future watershed-based management study, plan, or nutrient reduction program, at the request of the Director; and
- Section 1.6.2 of the EAP indicates that sediment and erosion control measures to prevent sedimentation of the Seine River Diversion will be implemented and maintained until adequate vegetation is re-established at the site. Schematics of the general sediment and erosion control devices that will be utilized during construction were inadvertently omitted from Appendix B of the EAP (and are attached to this letter).

December 5, 2007

- *The proponent seems unwilling to seriously consider alternate effluent disposal strategies for this facility. The proponent argues that since the R.M. of Richot and St. Adolphe were not required to limit phosphorus, they should not meet this requirement. Further, Manitoba Water Stewardship has accepted the recommendations of the Lake Winnipeg Stewardship Board in its final report released on February 6, 2007. The Lake Winnipeg Stewardship Board report recommends that the province implement nutrient limitations on all municipal wastewater facilities to meet discharge limits for phosphorus of 1.0 mg/L. The Department is in the process of developing regulations to implement this recommendation. In the meantime, the proponent is encouraged to position themselves to achieve the standards with minor additional alteration. The Department recommends that communities build some contingency capacity when expanding lagoons so that these facilities can more easily institute nutrient reduction strategies when required in the future (e.g. effluent irrigation, trickle discharge, etc.). For example, the proponent mentions that effluent irrigation may not be practical in the spring when the facility must be discharged. Additional capacity would allow the flexibility of irrigating when conditions were favourable (i.e. late spring, early summer).*
- *The L. U.D. of Landmark should agree to participate in additional nutrient reduction measures, if required.*

- *The Department is agreeable with the proponent's response regarding water quality management zone setback distances, this facility will be built 15 metres from the top of banks of the Seine River Diversion.*

Proponent Responses – February 12, 2008:

- The L.U.D. of Landmark agrees to make efforts to position themselves to achieve future standards regarding municipal effluent discharge limits, specifically as referenced to nutrients. In addition, it was indicated that the proponent is confirming the availability of adjacent lands for purchase such that modifications or expansion of the wastewater treatment lagoon could be made as necessary; and
- The L.U.D. of Landmark also agrees to participate in additional nutrient reduction programs as may be required by the Director, now, or at a future date.

Disposition:

- The draft Environment Act Licence includes a clause that requires that the Licencee, during each effluent discharge campaign from the wastewater treatment lagoon, obtain samples of effluent to be collected during the beginning, middle and end of each discharge event. The samples shall be preserved, analyzed and reported in accordance with the requirements of Clause 3 of this Licence, and shall be analyzed for:
 - ammonia;
 - pH; and
 - temperature.
- The draft Environment Act includes a clause that requires the Licencee, for a period of at least three years following the commencement of operation of the wastewater treatment lagoon under this Licence and during each effluent discharge campaign from the wastewater treatment lagoon, obtain samples of effluent to be collected during the beginning, middle and end of each discharge event. The samples shall be preserved, analyzed and reported in accordance with the requirements of Clause 3 of the Licence, and shall be analyzed for:
 - total Kjeldahl nitrogen;
 - nitrate-nitrite nitrogen
 - total dissolved phosphorus;
 - total particulate phosphorus; and
 - total inorganic phosphorus;
- The draft Environment Act Licence requires that the Licencee actively participate in any future watershed based management study, plan or nutrient reduction program, approved by the Director, for the Red River and Lake Winnipeg and associated waterways and watersheds; and
- The Licencee has agreed to make efforts to position themselves to achieve future standards regarding municipal effluent discharge limits, such as nutrients, and is

confirming the availability of adjacent lands for purchase in the event that a decision is made to modify the treatment process and/or to expand the storage capacity of the wastewater treatment lagoon.

COMMENTS FROM FEDERAL REPRESENTATION:

Canadian Environmental Assessment Agency

- *Based on the responses to the CEAA survey, application of The Canadian Environmental Assessment Act with respect to this proposal will be required. Fisheries and Oceans Canada and Environment Canada would be able to provide specialist if requested. Health Canada offered to provide advice but has no interest in participating in the provincial review. Environment Canada submitted comments and participated in the review.*

Environment

- *Environment Canada has reviewed the above project description proposed by LUD of Landmark for the Sewage Lagoon Expansion. Environment Canada acknowledges and commends the elaborate mitigation measures proposed by the proponent, however, EC feels that it is prudent to install monitoring wells around the lagoon which will serve as an early detection warning for possible groundwater contamination.*

Proponent Responses – November 14, 2007:

- In response to Environment Canada's recommendations, which were provided in their letter correspondence dated September 25, 2007 (File: 4194-10-5/2906), four (4) monitoring wells could be installed around the perimeter of the Landmark sewage lagoon and a groundwater sampling program could be established to utilize the monitoring wells as an early detection warning for possible groundwater contamination.

However, as indicated in the Environment Act Proposal Form (EAPF), soils at the site consist of high plastic clay-type soils. Therefore, the wells would have to be screened in the clay-type soils, approximately 1 - 2 metres below the elevation of the floor of the lagoon cells. Furthermore, as identified in Section 2.4 of the EAP, the closest known groundwater source (i.e. aquifer) is approximately 24 vertical meters below the lagoon. Some rural residents obtain their drinking water from groundwater wells that draw from this limestone aquifer. Since the monitoring wells would be located in clay-type soils, they would monitor interstitial pore water only, which provides no particular value for monitoring clay liner performance. Therefore, information gained by sampling water from the monitoring wells would be of no value.

The best assurance is for quality control and quality assurance testing during and after construction, before the lagoon is commissioned. Typically, Environment Act licences for clay-lined municipal lagoons include clauses related to soil sampling and testing. Manitoba Conservation's standard practice for testing (Schedule A in most licences) has been attached for reference purposes. The clay liner for the lagoon expansion will be constructed with the foresight that such integrity testing will be occurring.

Disposition:

- The draft Environment Act Licence contains clauses that require soil sampling and testing of, and specific characteristics for, the liner of the new cell of the wastewater treatment lagoon.

PUBLIC HEARING:

A public hearing was not requested.

RECOMMENDATION:

Issue an Environment Act Licence in accordance with the attached draft. The Licence should be assigned to the Environmental Assessment and Licensing Branch until all testing has been completed and the facility is fully commissioned in accordance with the Licence.

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