

## **SUMMARY OF COMMENTS/RECOMMENDATIONS**

**PROPONENT:** Rural Municipality of Strathcona  
**PROPOSAL NAME:** Community of Belmont Wastewater  
Treatment Lagoon Expansion  
**CLASS OF DEVELOPMENT:** 2  
**TYPE OF DEVELOPMENT:** Wastewater Treatment Lagoon – Waste/Scrap  
**CLIENT FILE NO.:** 131.10

### **OVERVIEW:**

On November 6, 2007, the Department received a Proposal from Genivar on behalf of the Rural Municipality of Strathcona for the remediation, expansion and operation of the existing wastewater treatment lagoon located on the southwest quarter of Section 28-5-15 WPM in the Rural Municipality of Strathcona. The proposed development consists of the remediation of the existing primary cell and expansion and remediation of the secondary cell of the wastewater treatment lagoon. Treated wastewater from the wastewater treatment lagoon will be discharged between June 15<sup>th</sup> and November 1<sup>st</sup> of any year from the west side of the secondary cell into a swale sloped towards Williamsons Lake.

On February 5, 2008 Manitoba Conservation requested additional information from the proponent. The proponent provided responses to the requests for additional information on July 14, 2008.

The Department, on August 7, 2008 placed copies of the Proposal in the Public Registries located at 123 Main St. (Union Station), the Winnipeg Millennium Public Library, the Manitoba Eco-Network, the Lakeland Regional Library (Killarney) and the Rural Municipality of Strathcona office. Copies of the Proposal were also provided to the Technical Advisory Committee (TAC) members. The Department placed public notification of the Proposal in the Baldur Glenboro Gazette News on Tuesday, August 19, 2008. The newspaper and TAC notifications invited responses until September 16, 2008.

On September 22, 2008 Manitoba Conservation forwarded requests for additional information from the TAC to the proponent. The proponent's October 24, 2008 response to the requests was then provided to the participating TAC for review and comment on October 31, 2008.

On November 12, 2008 Canadian Environmental Assessment Agency requests for additional information from the proponent. On November 13, 2008 proponent provided responses the requests for additional information.

All additional information necessary for the review was placed in the Public Registries.

**COMMENTS FROM THE PUBLIC:**

No responses were received from the public.

**COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:**

**Manitoba Infrastructure and Transportation**

- *No concerns*

**Manitoba Agriculture, Food and Rural Initiatives**

- *No concerns*

**Manitoba Conservation - Sustainable Resource & Policy Management Branch**

- *No concerns*

**Manitoba Intergovernmental Affairs- Community Planning Services Branch**

- *No concerns*

**Manitoba Conservation – Parks and Natural Areas Branch**

- *No concerns*

**Manitoba Conservation – Environmental Operations- Western Region**

- *No concerns*

**Manitoba Health and Healthy Living**

September 16, 2008

- *Please consider soil and leachate monitoring.*
- *As the proposal states that remediation was required to mitigate the seepage from the lagoon cells and that the lagoon development and the discharge route are located just inside a groundwater pollution hazard area, please consider the need for groundwater monitoring.*

**Proponent Response (October 24, 2008):**

- Adequate treatment, containment, storage capacity and successful testing of the wastewater are all essential components of mitigating any groundwater/soil impacts contributable to a lagoon. These aforementioned components are included in engineering design and Manitoba Conservation licensing of a lagoon. Therefore no impact to the local groundwater system in the area is anticipated from a properly designed and constructed lagoon. Groundwater monitoring can be implemented to confirm the groundwater condition, and will be performed as required by Manitoba Conservation.

Disposition:

After receiving the additional information from the proponent, no further comments were received from Manitoba Health and Healthy Living. This was assumed to indicate that the original comments were satisfied.

**Manitoba Water Stewardship – Planning and Coordination Branch**

September 17, 2008

- *The Water Rights Act indicates that no person shall control water or construct, establish or maintain any “water control works” unless he or she holds a valid licence to do so. “Water control works” are defined as any dyke, dam, surface or subsurface drain, drainage, improved natural waterway, canal, tunnel, bridge, culvert borehole or contrivance for carrying or conducting water, that temporarily or permanently alters or may alter the flow or level of water, including but not limited to water in a water body, by any means, including drainage, OR changes or may change the location or direction of flow of water, including but not limited to water in a water body, by any means, including drainage. If the proposal in question advocates any of these activities, application for a Water Rights Licence to Construct Water Control Works is required.*
- *The proponent needs to be informed that if the proposal in question advocates any construction activities, erosion and sediment control measures should be implemented until all of the sites have stabilized.*
- *The preliminary design specifications for the remediated primary cell and new secondary cell states the cells will be constructed of a 30-mil PVC liner system. However the specification for the hydraulic conductivity of the liner system is not provided.*
- *There is no information provided on whether there are any local groundwater users in the vicinity of the lagoon.*
- *The proposal provides a summary of the local hydrogeological conditions for the lagoon site. It also states that “the design of the remediated lagoon complies with Manitoba Conservation guidelines and will therefore sufficiently contain the influent wastewater.” Although the lagoon may meet the Manitoba Conservation guideline requirements, there is no information or assessment of the potential impacts that the lagoon expansion (construction and operation) may have on the local groundwater system or groundwater users in the vicinity of the lagoon.*
- *If there are potential impacts of the lagoon expansion on the local groundwater system or groundwater users in the vicinity of the lagoon, a description of the proposed environmental management practices to be employed to prevent or mitigate adverse implications from the impacts should be provided.*
- *Depending on the risk of impact the lagoon expansion may have on the underlying aquifer system and groundwater users down gradient of the lagoon, the proponent should consider the need for a groundwater monitoring system to allow long-term monitoring of the performance of the lagoon. The monitoring system should be carefully planned and take into consideration the objectives for monitoring, the site*

*specific geology, the type of aquifer materials, groundwater flow direction, the types of potential contaminants to be monitored and the potential for transport of contaminants to underlying aquifers and water well users.*

- *The Department does not have fisheries information on Williamsons Lake from the Fish Inventory and Habitat Classification System (FIHCS) but agree with the Department of Fisheries and Oceans Canada that it is likely forage species are present.*
- *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) including effluent irrigation.*
- *Trickle discharge (at least two (2) weeks) will provide time for the nutrient rich effluent to be assimilated in the drainage path, prior to reaching Williamsons Lake. The discharge period should be lengthened to at least two (2) weeks or more.*
- *The proponent plans to discharge into Williamsons Lake. The proposal references a Figure 3.1 to illustrate the discharge route however it appears to be excluded from the proposal. The section on which the lagoon will be located (SW 28-05-15w) contains some Class 7 soils which pursuant to the Nutrient Management Regulation (MR 62/2008) under The Water Protection Act, is a nutrient management zone N4. No nitrogen or phosphorus applications may be applied to zone N4.*
- *Since Williamsons Lake has no overland outlet, it will be vulnerable to nutrient inputs as it is not 'flushed'.*
  - *Prior to accepting abattoir effluent, the Department recommends that the proponent investigate the nutrient levels in Williamsons Lake and determine the potential impacts the abattoir effluent will have on trophic level of the lake.*
- *The Department 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, the Department recommends that an Environment Act licence require the proponent to actively participate in any future watershed based management study, plan/or nutrient reduction program, approved by the Director, Water Science and Management Branch.*

Proponent Response (October 24, 2008):

- *If necessary, the existing discharge ditch may undergo slight re-grading (removal of sediment and blown in topsoil) to provide positive drainage to Williamsons Lake, as was the purpose of the original construction of the ditch.*
- *Construction Details — Section 5.2.3 (page 18) of the EAP provides comments on erosion management. Please refer to this section.*

- The 30-mil PVC liner is a Manitoba Conservation approved liner system and installation will conform to the licence conditions. Therefore, the lagoon liner will meet and/or exceed the permeability regulations, which have typically been  $3 \times 10^{-9}$  cm/s in past licences.
- Appendix D includes two well logs for SW 28-5-15 WPM. In communication with the R.M. of Strathcona, one of these wells has been decommissioned and the other is used for livestock only. The closest domestic well is a newly constructed well located 300+ metres northwest of the lagoon.
- Adequate treatment, containment, storage capacity and successful testing of the wastewater are all essential components of mitigating any groundwater impacts contributable to a lagoon. These aforementioned components are included in the engineering design and the Manitoba Conservation licensing of a lagoon. Therefore no impact to the local groundwater system in the area is anticipated from a properly designed and constructed lagoon. Groundwater monitoring can be implemented to confirm the groundwater condition, and will be performed as required by Manitoba Conservation.
- Trickle discharge may be an appropriate implementation for some lagoon facilities with long segments of ditching before reaching a more substantial watercourse. However, in this case, the ditch leading to Williamsons Lake is approximately 100 metres in length. Therefore, the net nutrient assimilation achieved along this ditch during trickle versus normal discharge is expected to be limited. Given that the maximum discharge volume is  $9,200 \text{ m}^3$ , the combined factors of ditch length and small discharge volume do not justify a trickle discharge.
- Figure 3.1 is located on page 7 of the Environment Act Proposal.
- The abattoir proposal has been cancelled and, therefore, the Belmont lagoon will not service the previously proposed facility.
- Any party involved in a future watershed based management study, plan/or nutrient reduction program for the area are welcome to contact the Community of Belmont.
- All general comments noted.

Water Stewardship further Comments (November 20, 2008)

- *Allowing a slow trickle discharge from the lagoon between mid-June and October, while maximizing retention of the effluent in the 100-m drainage ditch, increases the ability of the environment to receive wastewaters. Further, small discharge volumes support trickle discharge due to increased percentage of contact of the water to the vegetation. If the proponent has no other reasons for not implementing trickle discharge, it should be required.*
- *A primary issue is a requirement for monitoring wells at the lagoon site, the Department reiterates the following recommendation:*
  - *The preliminary design specifications for the remediated primary cell and new secondary cell states the cells will be constructed of a 30-mil PVC liner system. However, the specification for the hydraulic conductivity of the liner system is not provided.*

- *There is no information provided on whether there are any local groundwater users in the vicinity of the lagoon.*
- *The proposal provides a summary of the local hydrogeological conditions for the lagoon site. It also states that “The design of the remediated lagoon complies with Manitoba Conservation guidelines and will therefore sufficiently contain the influent wastewater”. Although the lagoon may meet the Manitoba Conservation guideline requirements, there is no information or assessment of the potential impacts that the lagoon expansion (construction and operation) may have on the local groundwater system or groundwater users in the vicinity of the lagoon.*
- *If there are potential impacts of the lagoon expansion on the local groundwater system or groundwater users in the vicinity of the lagoon, a description of the proposed environmental management practices to be employed to prevent or mitigate adverse implications from the impacts should be provided.*
- *Depending on the risk of impact the lagoon expansion may have on the underlying aquifer system and groundwater users down gradient of the lagoon, the proponent should consider the need for a groundwater monitoring system to allow long-term monitoring of the performance of the lagoon. The monitoring system should be carefully planned and take into consideration the objectives for monitoring, the site specific geology, the type of aquifer materials, groundwater flow direction, the types of potential contaminants to be monitored and the potential for transport of contaminants to underlying aquifers and water well users.*

Disposition:

- Several comments have already been addressed in the proponent’s response.
- The draft Environment Act Licence includes a Clause that requires the Licencee to actively participate in any future watershed based management study, plan and/or nutrient reduction program, approved by the Director, for the Williamsons Lake and/or associated waterways and watersheds.
- A comprehensive groundwater monitoring plan for the site of the Development to monitor the liner integrity/performance of the lagoon is required in the draft Environment Act Licence.

Water Stewardship Comments on Draft Licence (January 20, 2009)

- Clause 10 f:
  - The Department recommends that an *Environment Act* Licence require the proponent to submit a proposed activity for review by the Department of Fisheries and Oceans Canada to ensure it is consistent with conditions in the Drain Maintenance Guidelines.
    - Currently, this clause seems to give approval to repair any watercourses affected along the discharge route, which if they are fish bearing would provide fish habitat.

- The Department strongly recommends that an *Environment Act* Licence require the proponent to implement trickle discharge for at least two weeks.

Disposition:

- The Environment Act Licence Clause 10 f) has been revised.
- The Environment Act Licence included a Clause that the Licencee shall discharge at least two weeks period to provide time for the nutrient rich effluent to be assimilated in the drainage path, prior to reaching the Williamsons Lake.

**Manitoba Conservation – Environmental Services**

August 19, 2008

- *Environmental Services has reviewed the documentation provided and has identified no concerns, but does recommend that the proponent take this opportunity to design for nutrient removal capability or ensure that the design can accommodate this treatment component in the future.*

Proponent Response (October 24, 2008):

- If nutrient removal on wastewater treatment lagoons is required in the future, the Belmont lagoon will be in the same position as virtually every other lagoon in Manitoba in implementing a feasible solution. Therefore, the design of this lagoon should pose no barriers or obstacles in accommodating a feasible nutrient removal program in the future.

Disposition:

After receiving the additional information from the proponent, no further comments were received from Manitoba Conservation – Environmental Services. This was assumed to indicate that the original comments were satisfied.

**Manitoba Culture, Heritage, Tourism and Sport – Historic Resources Branch**

September 4, 2008

- *I have reviewed the above-noted application for an Environment Act License. The Historic Resources Branch has no concerns with regard to this project's potential to impact heritage resources.*
- *If at any time however, significant heritage resources are recorded in association with these lands during development, the Historic Resources Branch may require that an acceptable heritage resource management strategy be implemented by the developer to mitigate the affects of development on the heritage resources.*

Proponent Response (October 24, 2008):

- Mr. Gordon Hill's letter to the same affect is included in the Environment Act Proposal in Appendix E.

Disposition:

After receiving the additional information from the proponent, no further comments were received from Manitoba Culture, Heritage, Tourism and Sport. This was assumed to indicate that the original comments were satisfied.

**COMMENTS FROM FEDERAL REPRESENTATION:**

**Canadian Environmental Assessment Agency (CEEA)**

September 11, 2008

- *Will the truck dump area be upgraded and if so can you provide the details?*
- *What will be the process for sludge removal, dewatering, and disposal from the cells prior to construction? What will the process be during operation?*
- *What are the plans for groundwater monitoring to determine the effectiveness of the new liner system in the primary and secondary cells?*

Proponent Response (October 24, 2008):

- Details of the truck dump are shown on drawings CO2 and CO3. Please contact me directly for further information, if required.
- Sludge may be removed from the cells by one of two methods to be determined during the preparation of the tender documents:
  - Construction of a temporary polyethylene lined area to facilitate the placement of geotextile tube(s). The sludge from the cell(s) shall be pumped into the tube(s) and allowed to dewater. After it is believed that the process has sufficiently dewatered the sludge, their suitability for hauling offsite shall first be confirmed and approval given prior to cutting open the geotextile tubes and removing the sludge for transport to a licensed waste disposal ground.
  - Use of earthmoving construction equipment to remove the sludge after the cell(s) have been dewatered. The sludge shall be placed on the interior dyke slopes of the completed lined cells.
- During operation, dredging and pumping of the sludge is typically the most feasible option for removal.
- From past experience, lagoons that are constructed in sensitive groundwater areas have required groundwater monitoring by Manitoba Conservation. Given that the area is on the edge of a groundwater pollution hazard area, Manitoba Conservation will likely require groundwater monitoring. It should be noted that Manitoba Conservation verifies the effectiveness of the liner system by providing quality assurance of the liner seams. Also, Manitoba Conservation checks the liner installation, prior to covering the liner with granular material.

CEEA Supplemental Comments (November 12, 2008):

- *I have the following supplemental question on the above mentioned project. Described in the October 24, 2008 letter to MB Conservation were two methods of sludge*

*handling prior to cell renovation. Can you describe where the water from the dewatered sludge will be sent to and what mitigation measures you may have to prevent unacceptable release of the water or sludge to the environment?*

Proponent Response (November 13, 2008):

- In both cases, the water from the wet sludge will be directed into the primary and/or secondary cell of the facility. In the first sludge removal method (as described in the October 24, 2008 letter) the water collects in the lined area and is periodically pumped into the primary/secondary cell. In the second sludge removal method, the water runs down the interior slopes and is contained in the cell.
- During the removal process the wet sludge is always in a lined and contained areas and does not require further mitigation measures. In the first method the lined and contained area is the temporary polyethylene area to be constructed and in the second method, it is the actual lagoon cells. Therefore, unacceptable release of the water is not expected.

CEAA Comments (November 13, 2008)

- *Thanks Jason, this work for me. I assume Manitoba Conservation will be able to address any liner consideration within the Environment Act. Licence.*

Disposition:

- The draft Environment Act Licence includes several Clauses for sludge removal, dewatering, and disposal from the cells to the waste disposal ground.
- Insufficient details were provided by the proponent about the second method for sludge removal, dewatering, and disposal which are not acceptable. Therefore, proponents will not be allowed to implement the second method.

**Fisheries and Oceans Canada**

September 8, 2008

- *All excavated materials (ie. from the ditch re-grading) should be disposed on Land above the high water mark in a manner that will prevent the re-entry, of the material into any watercourse. This could include covering stockpiles with biodegradable mats or tarps or planting stockpiles with grass or shrubs.*
- *Use only clean rock for the outlet protection and haul it in from an appropriate land-based source. Avoid using poor quality limestone that breaks down quickly when exposed to the elements. All rock should be clean and free of fine materials that could be washed away during high flow events.*
- *Install effective temporary and long-term sediment and erosion control measures and re-vegetate any exposed soils in order to prevent the entry of sediment into the drain. Inspect these measures regularly and ensure that they are functioning properly until vegetation is re-established. Make all necessary repairs and adjustments if any damage is discovered or if these materials are not effective in controlling erosion and sedimentation.*

- *Construction should occur when water levels are low or under frozen conditions and the ditch regarding should be isolated from flowing water or constructed in the dry.*

Proponent Response (October 24, 2008):

- Ditch re-grading materials will be utilized in the general embankment of the project or placed in areas where it will not be susceptible to erosion.
- Our rip rap specification agrees with the comments on choice of rock.
- The Contractor shall be required to implement appropriate sediment and erosion control measures where deemed necessary. All disturbed areas are generally reseeded at the end of the project. Any areas noted to be prone to erosion are typically armoured with rip rap.
- General comments noted.

Disposition:

After receiving the additional information from the proponent, no further comments were received from Fisheries and Oceans Canada. This was assumed to indicate that the original comments were satisfied.

**PUBLIC HEARING:**

A public hearing is not recommended.

**RECOMMENDATION:**

The Proponent should be issued a Licence for the remediation, expansion and operation of the wastewater treatment lagoon in accordance with the specifications, terms and conditions of the attached draft Licence. Enforcement of the Licence should be assigned to the Environmental Assessment and Licensing Branch until the liner testing has been completed and the Development is commissioned.

PREPARED BY:

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