

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Manitoba Conservation, Parks and Natural Areas
PROPOSAL NAME: Grindstone Provincial Park Wastewater Treatment Lagoon Expansion
CLASS OF DEVELOPMENT: 2
TYPE OF DEVELOPMENT: Wastewater Treatment Lagoon – Waste/Scrap
CLIENT FILE NO.: 5336.00

OVERVIEW:

On April 3, 2008, the Department received a Proposal from J.R. Cousin Consultants Ltd. on behalf of Manitoba Conservation, Parks and Natural Areas for the expansion and operation of the existing wastewater treatment lagoon located in the southwest quarter and southeast quarter of Section 28-26-6 EPM in Grindstone Provincial Park. The proposed development consists of: constructing a new primary cell and converting the existing primary and secondary cells into a new secondary cell; installing clay liners in the two cells; constructing a new truck turnaround and spillway; and rerouting the existing park and lagoon access road. Treated wastewater from the wastewater treatment lagoon will be discharged between June 15th and November 1st of any year into a nearby existing marshy area that drains into Lake Winnipeg.

The Department, on April 14, 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 Selkirk- St. Andrews Library and the Rural Municipality of Bifrost 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 Interlake Spectator on Friday, April 18, 2008. The newspaper and TAC notifications invited responses until May 19, 2008.

Additional information required for the environmental assessment was received by the Department from J.R. Cousin Consultants (JRCC) Ltd. on June 11, 2008 and July 14, 2008. All additional information necessary for the review was provided to the TAC, as well as 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*

Culture, Heritage and Tourism - Historic Resources Branch

- *No concerns*

Conservation - Environmental Services

- *No concerns*

Water Stewardship

May 22, 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 license 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 License to Construct Water Control Works is required.*
- *During construction of the development, erosion and sediment control measures should be implemented until all of the sites have stabilized.*
- *The proposal does not provide a nutrient mitigation plan.*
- *The Department recommends that the Environment Act licence conditions of the Grindstone Provincial Park lagoon meet equivalent licence requirements as those for the West Hawk Lake lagoon expansion, such as:*
 - *1.0 mg/L phosphorus effluent quality and*
 - *The discharge period is restricted to the period: September 15th to October 31st of each year.*
- *The aforementioned licence conditions are important to implement as studies have shown that since the early 1970s, phosphorus loading has increased by about 10 % to Lake Winnipeg and nitrogen loading has increased by about 13 %. Excessive levels of phosphorus and nitrogen fuel the production of algae and aquatic plants. Extensive algal blooms can cause changes to aquatic life habitat, reduce essential levels of oxygen, clog fisher’s commercial nets, interfere with drinking water treatment facilities, and cause taste and odour problems in drinking water. In addition, some forms of blue-green algae can produce highly potent toxins.*
- *Lake Winnipeg has a significant recreational and commercial fishery. Lake Whitefish are present in Lake Winnipeg and are a fall spawning species. Given the presence of Lake Whitefish and the value of the fishery, effluent quality is important.*
- *Restricting the discharge period during fall, once a year, is reasonable. The proponent did not provide sufficient details to assess the potential impact of the discharge. It appears this facility will be discharging to a recreational beach area, discharges during the summer period should be avoided. The proponent should undertake a concerted effort to have the discharged effluent follow a discharge route*

that would permit maximum opportunities for uptake by the surrounding vegetation, rather than facilitating a direct route to Lake Winnipeg.

- *It appears that Sungro has a claim on a peat bog in this region. The Department recommends ensuring that the peat harvest area does not overlap with the discharge route.*
- *The Lake Winnipeg Stewardship Board has recommended that small wastewater treatment facilities are required to meet an equivalent of 1.0 mg/L phosphorus. It is desirable to recycle these nutrients on land where feasible, 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 Province of Manitoba has requested that its neighbouring jurisdictions reduce nutrient loading to Manitoba. It is critical that Manitoba therefore lead by example in reducing nutrient loading from facilities discharging to the Lake Winnipeg watershed.*

Proponent Response (July 10, 2008):

- The proponent understands the Water Rights Act requirement as it relates to water control works. At such a time when the project proceeds to the design stage, the need for a Water Rights License application will be verified and if required, the License shall be solicited.
- Erosion and sediment control measures will be implemented as necessary. As indicated in Sections 4.3 of the Environment Act Proposal, the specifications would state that the contractor is responsible for erosion control. At the time of preparing the specification, more detailed description of the procedures to be followed by the contractor would be provided.
- The Grindstone Provincial Park Wastewater Treatment Lagoon would be servicing a limited population utilizing the park. The expanded lagoon incorporates a storage period of 365 days instead of the required 230 days per current Provincial Design Objectives for Standard Sewage Lagoons. Furthermore, the primary cell of the expanded lagoon would provide approximately 270 m² of greater surface area than that would be required to treat the organic loading from a population projected to year 20. Hence the lagoon would be well over the required size, organically and hydraulically, thereby providing ample treatment of the wastewater. As such, the lagoon will be providing additional nutrient removal, however, the phosphorus level in the treated effluent could be tested prior to discharge and if the recommended limit of 1.0 mg/L phosphorus is exceeded alum could be spread in the lagoon to reduce the phosphorus level to below the limit before discharge occurs.
- Restriction of the discharge to a short period would result in an increased discharge flow rate rather than a gradual flow rate. As per the Lake Winnipeg Water Stewardship Board's recommendation, a slow discharge is preferable since it may provide increased opportunity for further polishing of the treated effluent along the discharge route. However, if so required by Manitoba Conservation, a larger size of discharge pipe can be incorporated in the design of the lagoon so the lagoon can be discharged in a shorter period of time.

- As reported in the "Grindstone Provincial Park Sewage Lagoon Assessment Study" completed by JRCC in March 2008, a preliminary assessment of the discharge route was conducted. The preliminary assessment included discussion with the Park Supervisor and site review. The review indicated that the general area is drained to the south of the lagoon in the direction of the Lake. Per discussion with the Parks Supervisor, the discharge route, from the discharge pipe outlet in the lagoon to the receiving water body (Lake Winnipeg), consists of approximately 100 m long discharge ditch and a marshy area that drains into the Lake. Beyond the ditch the discharged effluent reportedly follows the natural slope of the marshy area and reaches Lake Winnipeg. This may provide opportunity for nutrient uptake by plants growing in the marsh area. The study concluded with a recommendation that a separate drainage study be undertaken to survey the entire drainage route to be used for discharging the expanded lagoon.
- The proposed discharge route for the expanded lagoon is the same route that has been used for discharging the existing lagoon. Hence it is unlikely that there is overlap between the peat harvest and the existing discharge route.

Water Stewardship response (July 17, 2008):

- *The wastewater treatment facility at Grindstone Provincial Park should be required to meet a phosphorus limit of 1 mg/L.*
- *No additional information was provided on the potential impact of the discharge on the receiving water body.*
- *The Department recommends that an Environment Act Licence include the following requirements:*
 - *A phosphorus limit of 1 mg/L.*
 - *This phosphorus limit is consistent with the considerable efforts underway across Manitoba, in other provincial parks, and in upstream jurisdictions to reduce nutrient loads to surface waters.*
 - *Restrict discharge of the facility to the period between September 15th and October 31st. To maximize the potential for further nutrient uptake, the facility shall be discharged slowly throughout this 46-day period.*

Disposition:

- The draft licence requires the Licencee to meet a phosphorus limit of 1mg/L and restrict the discharge of effluent between the 1st day of November of any year and the 14th day of September of the following year
- The draft Licence requires the Licencee to actively participate in any future watershed based management study, plan and/or nutrient reduction program, approved by the Director, for Lake Winnipeg and/or associated waterways and watersheds.

Intergovernmental Affairs

May 30, 2008

- *I have reviewed the above noted proposal for a wastewater treatment lagoon expansion in Grindstone Provincial Park filed pursuant to the Environment Act. Grindstone Provincial Park is not under the jurisdiction of any municipal or district*

planning programs. The siting and expansion of this lagoon should be in keeping with any management plans for the park that may have been prepared by Manitoba Conservation.

Proponent Response (July 10, 2008):

- This can be verified and by a copy of this letter J.R. Cousin Consultants requests the Parks and Natural Areas Branch of Manitoba Conservation to verify the situation.

Disposition:

After receiving the additional information from the proponent, no further comments were received from Intergovernmental Affairs. This was assumed to indicate that the original comments were satisfied.

Conservation – Environmental Operations

May 6, 2008

- *The proposal does not include a plan to ensure that wastewater discharge from the proposed lagoon to Lake Winnipeg does not exceed 1mg/L of phosphorus as recommended in item 14.1 in the Lake Winnipeg Stewardship Board Report.*
- *There is no information provided respecting the location of the discharge route including the entry point to Lake Winnipeg, nor is there any information provided respecting potential wildlife or human use of this area.*
- *Under point 5.5 Fisheries, the report notes "If effluent does not meet the licence requirements for discharge, the effluent will not be discharged." The proponent should identify a reasonable alternate means of sewage disposal for Grindstone Provincial Park during a potential emergency with the proposed lagoon or strike this sentence from the proposal.*
- *The proposal states that lagoon construction is to begin in the summer of 2008 (item 5.1 page 16), but there is also 300 cubic meters of sludge to be removed from the existing primary cell of the unlicensed lagoon (2.6.8.3 page 10). The proposed method of dewatering sludge is to place it in geobags to dewater and then haul it back to the interior berms of the lagoon. I have several questions related to these two items:*
 - *Is dewatering of the sludge to occur at the same time as lagoon construction?*
 - *Where is dewatering to occur?*
 - *If not on the interior of the berms of the lagoon what protective measures will taken to ensure that pollution of groundwater or surface water does not occur?*
 - *Application of dewatered sludge to the inner berms of the lagoon should be done at rates that allow vegetation to establish, and consider metal accumulation in the soil.*

Proponent Response (July 10, 2008):

- A response to this item is provided with the understanding that the limit of 1 mg/L refers to phosphorus limit. The Grindstone Provincial Park Wastewater Treatment Lagoon would be servicing a limited population utilizing the park. The expanded lagoon incorporates a storage period of 365 days instead of the required 230 days per current Provincial Design Objectives for Standard Sewage Lagoons. Furthermore, the primary cell of the expanded lagoon would provide approximately 270 m² of greater surface area than that would be required to treat the organic loading from a population projected to year 20. Hence the lagoon would be well over the required size, organically and hydraulically, thereby providing ample treatment of the wastewater. As such, the lagoon will be providing additional nutrient removal, however, the phosphorus level in the treated effluent could be tested prior to discharge and if the recommended limit of 1.0 mg/L phosphorus is exceeded alum could be spread in the lagoon to reduce the phosphorus level to below the limit before discharge occurs.
- A preliminary assessment of the discharge route was conducted during the "Grindstone Provincial Park Sewage Lagoon Assessment Study" completed by JRCC in March 2008. The following is a summary of the discharge route preliminary assessment:

According to the Park Supervisor, the effluent reportedly drains into Lake Winnipeg and the discharge ditch close to the lagoon was cleared approximately two years ago. The discharge route, from the discharge pipe outlet in the lagoon to the receiving water body (Lake Winnipeg), consists of approximately 100 m long discharge ditch and a marshy area that drains into the Lake. Beyond the ditch the discharged effluent reportedly follows the natural slope of the marshy area and reaches Lake Winnipeg.

Land drainage patterns in the area of the lagoon and discharge route were reviewed. Based on the site review, the general area is drained to the south of the lagoon in the direction of the Lake. The lagoon discharges directly into the discharge ditch adjacent to the lagoon near the south east corner of the lagoon.

The discharge ditch could not be surveyed beyond approximately 40 metres away from the lagoon due to presence of heavy tree in the area that prevented satellite signal reception of the GPS equipment used for the surveying. No ponding of effluent was observed in the ditch suggesting that the ditch has positive drainage away from the lagoon site. Based on the limited survey data and visual inspection, the existing ditch could still be used for discharging the expanded lagoon. However, the entire discharge ditch may need to be re-established to ensure positive drainage away from the lagoon site. Therefore, a separate drainage study is recommended to survey, verify and establish the drainage route to discharge the expanded lagoon.

- As indicated above, the proposed lagoon is well over the required size, hence emergency discharge is not expected. Should any unexpected emergency discharge be required, chemicals can be applied before discharging the treated effluent. At the time of chemical application, the primary and secondary lagoon cells would be isolated by closing the intercell valve.

- As per the "Grindstone Provincial Park Sewage Lagoon Assessment Study" completed by JRCC in March 2008, the lagoon construction work is expected to start with the sludge removal.
- The dewatering can be done on the interior dikes of the existing primary cell by seepage and natural heat from the sun. The liquid that comes out of the tube runs down the inner slope of the dikes back into the lagoon cell.
- If the tubes must be placed on the outer slopes of the lagoon dikes, berm will be constructed at the bottom of the slope to contain the liquid seeping from the bags and pumped back into the lagoon cell.
Alternatively if the tubes must be placed on land near the lagoon, a lined berm will be constructed to contain the liquid seeping from the bags and pumped back into the lagoon cell.
- After the sludge is dewatered the tubes could be cut open and the solids could be removed using a backhoe and distributed over the inner slopes of the new primary cell in a manner that promotes vegetation growth and metals accumulation in the soil of the dike.

Disposition:

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

Conservation – Wildlife and Ecosystem Protection Branch

May 16, 2008

- *The proposal states that since the development will be restricted to previously disturbed land next to the existing lagoon, impacts to wildlife and wildlife habitat will be negligible. However, the aerial photograph on figure Plan1 in the Plan Index section of the proposal shows what appears to be undisturbed forest in much of the impact area. The proponent should contact the Conservation Data Centre (CDC), Biodiversity Conservation Section, Wildlife and Ecosystem Protection Branch, to determine if there are any known occurrences of rare or uncommon species in the proposed development area.*
- *The proponent should be aware that since many areas of the province have not been thoroughly surveyed, the absence of data in the CDC database in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information provided by the CDC should therefore not be regarded as a final statement on the occurrence of any species of concern nor can it substitute for on-site surveys for species that will be impacted by the development. It is the responsibility of the proponent to inspect the project area prior to and during construction to determine if any rare or endangered species may be impacted. The proponent needs to be aware that if rare or endangered species are present, removal or destruction of individuals or their habitat may be in contravention of Subsection 10(1) "Prohibition" of The Endangered Species Act (Manitoba). In addition, the federal Species at Risk Act prohibits any activities that kill or otherwise harm COSEWIC-listed plant or animal species and prohibits destruction of habitat for these species. If species*

of concern are present, the proponent must contact the Biodiversity Conservation Section of the Wildlife and Ecosystem Protection Branch to discuss possible mitigation options well in advance of any disturbance.

- *The proponent should also be aware that killing or harming migratory birds and disturbance, destruction or taking of their nests or eggs is prohibited under the Migratory Birds Convention Act. The proponent is responsible for ensuring that no migratory birds will be harmed and no active nests of migratory birds will be destroyed as a result of the development. If migratory birds or their nests may be harmed by this development, the proponent must contact the Canadian Wildlife Service for further direction.*

Proponent Response (July 10, 2008):

- At the time of preparing the Environment Act Proposal (EAP), the Wildlife & Ecosystem Protection Branch of Manitoba Conservation was contacted regarding presence at the site of any "species at risk". Per the information provided by the Branch, there are no occurrences at the proposed lagoon expansion site of rare or endangered species found in their database. Please refer to the attached email correspondence from the Branch, dated January 21, 2008.
- On-site survey for species was beyond the scope of the project. The proponent is aware that, if present at the site, removal or destruction of any rare or endangered species or their habitat without any mitigative measure is inappropriate. The proponent will contact and discuss potential mitigative measures with Wildlife & Ecosystem Protection Branch of Manitoba Conservation, if any species of concern is encountered at the site during the lagoon expansion works.
- The proponent is aware that harming of migratory birds in any way is also inappropriate without planned mitigative measures in place such as carefully relocating their nests and eggs. This can be addressed in the specification for construction of the lagoon. It could be indicated to the contractor to notify the proponent of any migratory birds, their nests, or eggs encounter so that the proponent can discuss with the Canadian Wildlife Service of potential mitigative measures before proceeding with the construction works.

Disposition:

After receiving the additional information from the proponent, Wildlife and Ecosystem Protection Branch were satisfied with their proposed action and are no longer of concern.

Conservation - Sustainable Resource & Policy Management Branch

- *No concerns*

Agriculture, Food and Rural Initiatives

- *No concerns*

Health

- *No comments received.*

Canadian Environmental Assessment Agency

- Following a review by all federal departments with a potential interest in the proposed development, the application of the Canadian Environmental Assessment Act (CEAA) will not be required.
- Department of Fisheries and Oceans (DFO) indicated that they could assist with specialist advice.

PUBLIC HEARING:

A public hearing is not recommended.

RECOMMENDATION:

The Proponent should be issued a Licence for the expansion, reconstruction 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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