

SUMMARY OF COMMENTS/RECOMMENDATIONS

PROPONENT: Local Government District of Pinawa
PROPOSAL NAME: Wastewater Treatment Lagoon Expansion
CLASS OF DEVELOPMENT: 2
TYPE OF DEVELOPMENT: Wastewater Treatment Lagoon
CLIENT FILE NO.: 150.20

OVERVIEW:

On November 29, 2013, the Department received an Environment Act Proposal (EAP) on behalf of the Local Government District of Pinawa for the construction and operation of an expanded wastewater treatment lagoon located in located in NW and SW 4-14-12 EPM and NE and SE 5-14-12 EPM in the Local Government District of Pinawa. The existing wastewater treatment lagoon is currently operated under Environment Act Licence No. 230. The expansion consists of the construction of two new, additional storage cells that will be located adjacent to and northwest of the existing three-cell wastewater treatment lagoon. Another component of the proposal is constructing a serpentine ditch-type constructed wetland immediately south of the west-most new storage cell. Treated wastewater from the wastewater treatment lagoon will be discharged between June 15th and November 1st of any year via the constructed wetland, through adjacent low marshy areas, and to the Winnipeg River.

The Department, on January 30, 2014, placed copies of the EAP report in the Public Registries located at the Legislative Library, 200 Vaughn St., Winnipeg; the Millennium Public Library, 4th Floor, 251 Donald St., Winnipeg; and the Online Registry, <http://www.gov.mb.ca/conservation/eal/registries/index.html>, and provided copies of the EAP report to the TAC members. As well, the Department placed public notifications of the EAP in The Pinawa Paper on Tuesday, February 4, 2014. The newspaper and TAC notifications invited responses until March 4, 2014.

On March 21, 2014 Manitoba Conservation and Water Stewardship forwarded seven TAC correspondence items to the proponent's consultant for response. There were no public items submitted.

On March 21, 2014 Manitoba Conservation and Water Stewardship submitted the March 21, 2014 letter and a total of twelve responses from TAC members to the appropriate Public Registries.

In a May 20, 2014 letter, the proponent's consultant provided responses to the TAC correspondences. The letters were forwarded to the participating TAC members on May 26, 2014 and to the Public Registries on May 30, 2014.

There were several TAC responses to the proponent's consultant's responses. The pertinent TAC responses have been addressed in specific clauses in the draft Environment Act Licence while one item is being dealt with as an aside.

COMMENTS FROM THE PUBLIC:

There were no comments from the public.

COMMENTS FROM THE TECHNICAL ADVISORY COMMITTEE:

Fisheries Branch – Conservation and Water Stewardship

February 24 and 25, 2014

- *Fisheries Branch has reviewed this request to expand the Pinawa wastewater treatment lagoon by constructing two additional secondary cells. The cells are to be clay lined and will discharge to a wetland that will have a serpentine channel constructed within it to facilitate the uptake of phosphorous.*
- *There is little detail on the construction of the serpentine wetland other than what is provided in the drawing (Appendix D) and nothing on mitigation. If surface drainage is very poor at the proposed site as indicated in the Geotechnical Report under 6.0 Design Considerations and there are concerns with constructing the cells due to surface and groundwater then it is difficult to determine how they propose to construct the channel within the wetland and how it is proposed to slow the flow of effluent enough to create the opportunity for uptake. We could have concerns with the disturbance and release of sediment during construction and after until the site has stabilized.*
- *The proponent indicates they intend to trickle discharge to achieve the phosphorous limit and will monitor water quality to confirm that the serpentine wetland is providing the uptake as they have predicted. In the future they are projecting to exceed the population limit that allows for the incorporation of “trickle discharge and other nutrient reduction strategies” to meet phosphorous limits and hope monitoring will show how effective the wetland is and will continue to be with an expanded population. It is unclear what other options they have in mind if this does not work.*
- *The Winnipeg River does provide year round habitat for a number of large and small bodied fish species, a number of which are recreationally valued fish. It is very important that the effluent meet or exceed Manitoba Water Quality Standard, Objectives and Guidelines. Although we defer to the recommendations of our colleagues in Water Science Management we are strongly in favor of a monitoring plan that includes frequent sampling at a number of sampling stations within the wetland and downstream within the tributary that the effluent discharges into.*
- *To minimize the spread of aquatic and terrestrial invasive species please include the clause that requires all equipment to be clean prior to brining on site.*
- *Further to the above comments: the site of the proposed project is proximate to a small shallow bay that supports pike of several size classes. The pike fishery in the Pinawa part of the Winnipeg River is not excellent (I stand to be corrected by my colleagues in the eastern region – this statement reflects my personal experience)*

so the contribution of this bay should not be discounted. If the lagoon development affects this habitat directly, or indirectly by affecting wetland productivity that supports this bay, then I think the project needs to provide appropriate mitigation.

- I am also concerned that the project expansion refers to loading of wastewater from the Youth Camp located across the river from this site. At this point, it is not clear if the lagoon expansion is being designed to carry wastewater from this camp by overland truck or by pipeline, under the river (perhaps this latter scenario is only hearsay??). Fisheries Branch would be concerned if the wastewater came in the form of the second case, give the presence of Lake Sturgeon in the Winnipeg River and our attempts to recover this species in Manitoba.*
- In addition to these concerns, I am also concerned about the potential for flooding of the cells by during flood conditions on the Winnipeg River. I was unable to determine from the proposal if the cells were constructed at an elevation that would mitigate this risk.*

Proponent Responses – May 20, 2014:

- Information we have received from Manitoba Hydro regarding the Seven Sisters Dam just downstream of the Pinawa lagoon indicates that the reservoir is restricted to a maximum elevation of 274.2 m (ASL). The dykes of the existing lagoon and proposed lagoon are 277.0 m or above.
- The Contractor will be required to employ methods to drain any construction area while trapping any sediment from being released from the site. Sediment capture will also be necessary until vegetation is established.
- If reasonable effort has been made to reduce phosphorus within the timeframe of the sampling and monitoring program and the results prove unsuccessful, the lagoon would be subject to dosing with aluminum sulfate within the secondary cells to meet the 1 mg/L limit.
- Since the existing lagoon facility has been operating in the current location for around 40 years, and efforts are being made to reduce nutrient loading with the expansion of the facility, there are no plans to implement measures to mitigate any downstream environmental impacts.
- The Pinawa lagoon has been designed to receive wastewater from the Tim Hortons Camp. Approvals are already in place for this project (Environment Act Licence No. 2956 R, issued June 26, 2013).
- All general comments noted.

Disposition:

- The draft Environment Act Licence contains a clause that requires that when the quantity of total phosphorus the wastewater treatment lagoon discharges exceeds 820 kilograms per year, the Licencee shall not discharge effluent from the

wastewater treatment lagoon where the total phosphorus content of the effluent is in excess of 1.0 milligrams per litre.

- The draft Environment Act Licence contains a clause that for a period of at least five years following the commencement of operation of the wastewater treatment lagoon under this Licence, at the beginning, middle, and end of each discharge campaign, obtain samples of effluent flowing in the serpentine wetland discharge ditch at the discharge end, prior to the effluent encountering any other surface water, and have them analyzed for the total phosphorus content expressed as milligrams per litre and report the results to the Director.
- The draft Environment Act Licence contains clauses that requires that the quantities of total phosphorus, in kilograms per year, discharged from any secondary cell as shown on Schedule "A" to the Licence to the serpentine wetland discharge ditch and the serpentine wetland discharge ditch to the Winnipeg River be determined and reported annually to the Environment Officer by February 28 of the following year.

Water Science and Management Branch – Conservation and Water Stewardship

March 13, 2014

- *Can the proponent please indicate the total design population, including equivalent populations for example bussed in students and the two campgrounds, that the lagoon will be sized to service? The proponent has indicated an increase of 950 people and that a new Tim Horton's Camp will contribute wastewater to the lagoon in the future (see page 6, paragraph 4) and that the future population will exceed 2,000 people (page 8, 3rd paragraph). The population for which the lagoon is being designed to service is helpful for reviewing a requirement of a <1 mg/L total phosphorous limit.*
- *The following effluent standards should be in place for Local Government District of Pinawa Waste Stabilisation Pond Expansion as per the Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011).*
 - *BOD₅ 25 mg/L*
 - *Total suspended solids 25 mg/L*
 - *Fecal Coliforms or Escherichia coli 200 MPN / 100mL*
 - *< 1mg/L Total Phosphorous*
- *The design population for the facility is greater than 2,000 people and so the effluent must meet a <1 mg/L phosphorus limit. Additional information is required to support the use of trickle discharge and the serpentine ditch to meet a 1 mg/L phosphorus limit. For example, nutrient uptake by vegetation in the ditch is expected to be reduced during the fall discharge event. How will the proponent control discharge from the serpentine ditch and what measures will occur if phosphorus concentrations in the effluent in the ditch are greater than 1 mg/L?*
- *Reconnaissance level maps indicate that the proposed system, located on NE 5-14-12 E, is located in a Nutrient Management Zone N4. Under 14(1) of the Nutrient Management Regulation (62/2008) a wastewater system cannot be*

located in Zone N4. The proponent should obtain the services of pedologist to determine whether or not the site is suitable for the development of a wastewater lagoon. Attached is the most recent listing of pedologists.

- *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.*

Proponent Responses – May 20, 2014:

- Although the Manitoba Water Quality Standards, Objectives and Guidelines Regulation makes an allowance for populations under 2,000 people, it is sometimes difficult to determine an equivalent population depending on the wastewater sources contributing to a wastewater facility. In this case, the combination of piped and truck-hauled wastewater from campgrounds, camp and other developments complicate the calculation of an equivalent population. From a treatment perspective, the existing loading to the lagoon corresponds to an equivalent population of 1,573 people, if we base it on the assumption typically applied to piped wastewater only, i.e. the generation of 0.077 kg/BOD₅/person/day. Similarly, the proposed loading to the lagoon corresponds to an equivalent population of 2,566, based on the same assumption.
- We are of the understanding that since the existing equivalent population is less than 2,000, the LGD of Pinawa has the option of implementing a demonstrated nutrient reduction strategy. In order to implement a demonstrated nutrient reduction strategy, it is necessary to conduct a pilot project for each potential site to determine if the conditions are conducive to reducing phosphorus by means other than with aluminum sulfate (alum). After receiving an Environment Act Licence, WSP on behalf of the LGD of Pinawa would be prepared to submit a sampling and monitoring plan to Manitoba Conservation and Water Stewardship outlining the details behind the 10-year plan.
- The Rural Municipality of Pinawa Information Bulletin 99-25— Soils and Terrain identifies the land according to the Canada Land Inventory Classes as "Organic", but it very closely borders Class 3 land to the north and west. Based on the presence of the existing lagoon and the soil profiles in the geotechnical report, conducted by a qualified geotechnical engineer, we are of the opinion that the site is suitable for the proposed development. If required, we are prepared to submit an application letter to the Director for approval to construct the proposed development under subsection 14(2) of the Nutrient Management Regulation.
- Any party involved in a future watershed based management study, plan/or nutrient reduction program is welcome to contact the LGD of Pinawa.

June 5, 2014

- *The following effluent standards should be in place for Local Government District of Pinawa Waste Stabilisation Pond Expansion as per the Manitoba Water Quality Standards, Objectives and Guidelines Regulation (196/2011).*
 - *BOD₅ 25 mg/L*
 - *Total suspended solids 25 mg/L*
 - *Fecal Coliforms or Escherichia coli 200 MPN / 100mL*
 - *< 1mg/L Total Phosphorous*
- *The design population for the facility is greater than 2,000 people and so the effluent must meet a <1 mg/L phosphorus limit.*
- *The proponent must obtain the services of pedologist to determine whether or not the site is suitable for the development of a wastewater lagoon. Attached is the most recent listing of pedologists.*
- *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.*

Disposition:

- The draft Environment Act Licence contains a clause that requires that when the quantity of total phosphorus the wastewater treatment lagoon discharges exceeds 820 kilograms per year, the Licencee shall not discharge effluent from the wastewater treatment lagoon where the total phosphorus content of the effluent is in excess of 1.0 milligrams per litre.
- The draft Environment Act Licence contains a clause that for a period of at least five years following the commencement of operation of the wastewater treatment lagoon under this Licence, at the beginning, middle, and end of each discharge campaign, obtain samples of effluent flowing in the serpentine wetland discharge ditch at the discharge end, prior to the effluent encountering any other surface water, and have them analyzed for the total phosphorus content expressed as milligrams per litre and report the results to the Director.
- The draft Environment Act Licence contains clauses that requires that the quantities of total phosphorus, in kilograms per year, discharged from any secondary cell as shown on Schedule "A" to the Licence to the serpentine wetland discharge ditch and the serpentine wetland discharge ditch to the Winnipeg River be determined and reported annually to the Environment Officer by February 28 of the following year.
- Site suitability pursuant to the Nutrient Management Regulation is being addressed through discussions between the proponent's consultants and staff of the Water Science and Management Branch.

- The draft Environment Act Licence contains a clause that requires that the proponent actively participate in any future watershed-based management study, plan/or nutrient reduction program, approved by the Director, for the Winnipeg River and Lake Winnipeg and/or associated waterways and watersheds.

Office of Drinking Water – Conservation and Water Stewardship

March 3, 2014

- *It should be noted that there are a number of public water systems downstream of Pinawa on the Winnipeg River which use the river as the raw water source for their drinking water systems, Office of Drinking Water recommends contact information for these downstream water systems be kept in the LGD of Pinawa Office and, in the event of a major spill of inadequately treated wastewater from the lagoons, the downstream domestic water users on the river be notified.*

Apart from this point, I see no other cause for concern respecting drinking water safety from the proposed development.

Proponent Responses – May 20, 2014:

- We have no issues with the recommendations proposed by the Office of Drinking Water.

June 5, 2014

- *The consultant's response addresses the concern I raised in my review of the original EAP and Office of Drinking Water has no further concerns respecting drinking water quality or safety with this EAP or the proposed development.*

Environmental Compliance and Enforcement – Conservation and Water Stewardship

February 28, 2014

Conservation and Water Stewardship, Environmental Compliance and Enforcement Branch submits the following comments on the Environment Act Proposal Local Government District of Pinawa Wastewater Stabilization Pond Expansion submitted by Genivar Inc. dated November 2013.

3.3 Effluent Quality and Discharge Route

- *The proponent proposes a nutrient reduction strategy consisting of a trickle discharge via a serpentine ditch.*
 - *What are the targeted nutrient levels at the end of pipe and/or final discharge point?*
 - *Should the nutrient reduction strategy fail to meet these targets, what contingency measures will be implemented to mitigate downstream environmental impacts?*

- *Should the serviced population of 2,000 people be exceeded prior to completion of the 10 year nutrient reduction strategy, what mitigation strategies will be implemented to reduce phosphorus levels below 1 mg/L?*
- *Harvesting vegetation from the constructed wetland may be required to prevent the release of nutrients back into the environment during seasonal vegetative decomposition. Conservation and Water Stewardship requests information on the need to harvest vegetation and if any access concerns are foreseen given the limitations of the surrounding landscape.*
- *Conservation and Water Stewardship requests confirmation if testing of dissolved oxygen content will be conducted or required in accordance with concerns raised by the Department of Fisheries and Oceans in the enclosed email dated October 16, 2012 (Appendix E).*

4.4 Hydraulic Loading

- *Conservation and Water Stewardship has identified additional sources of wastewater flows which may not have been considered in calculating the required storage capacity:*
 - *The proposal states that all occupants of Awani Park utilize a septic tank wastewater system. The department has received registrations for holding tank systems within the park. As some residents occupy the park year round additional wastewater flows are anticipated during the storage period.*
 - *The proposal states that wastewater generated within Pioneer Bay and Relax Ridge Campgrounds will not contribute to the storage period. Wastewater from these developments may be directed to the lagoon in late October from holding tanks containing wastewater generated on or prior to October. Sufficient time to treat this effluent may not be obtainable prior to the proposed discharge deadline of October 31.*
 - *Observed water and wastewater flows suggest that infiltration is a significant contributor to current wastewater loading on the treatment facility. Conservation and Water Stewardship notes that lift station data from the 2010-2011 storage period were excluded from wastewater flow estimates due to extreme infiltration that year.*
 - *The designed storage capacity is based on 800 Lpcd, which has not yet been achieved.*
- *Conservation and Water Stewardship requests confirmation that the proposed facility has adequate treatment/storage capacity to address these potential additional flows. Conservation and Water Stewardship also recommends the proponent implement an ongoing infiltration reduction strategy.*

5.2.2 Construction Details

- *Rock outcrops exist in secondary cell North and secondary cell West.*
 - *Has the hydraulic displacement of these outcrops been factored into the calculation of existing storage capacity?*

- *Will the suspected boulder/bedrock encountered in testhole TH1 (Section 5.1.2) reduce the available treatment capacity of proposed secondary cell #4?*
- *What measures will be taken to ensure that the cell liners are intact across the entire surface of the existing secondary cells to prevent the seepage of wastewater beneath the liners?*

- *Conservation and Water Stewardship requests confirmation whether sludge accumulation estimates have been incorporated in the calculation of available hydraulic and organic treatment capacity.*
- *The proposal indicates that Rip-Rip will be installed, while the Geotechnical Report states that “Rip-Rap placement on the dykes should be provided, if needed, after construction.” Conservation and Water Stewardship requests clarification if Rip-Rap is proposed at time of construction, and if it is proposed for all five (5) lagoon cells?*

Proponent Responses – May 20, 2014:

- With a trickle discharge through the serpentine wetland discharge ditch, the targeted phosphorus level is 1 mg/L upon the treated effluent exiting this ditch.
- Since the existing lagoon facility has been operating in the current location for approximately 40 years, there are no plans to implement contingency measures to mitigate any downstream environmental impacts. Even though the facility will again be expanded, we believe that effluent quality improvements (i.e. nutrient reduction) will occur as it flows through the serpentine wetland ditch. We also understand that extensions to the compliance timelines will be considered where a plan is in place and steps are being taken to make improvements to the effluent. We see the sampling and monitoring plan briefly outlined in the Environment Act Proposal as worthy of an extension to the compliance timelines, regardless of the population serviced by the lagoon. If approved, we would submit a detailed sampling and monitoring plan after receiving an Environment Act Licence.
- The need to harvest vegetation will be explored during the sampling and monitoring program. Access to the serpentine wetland ditch will be by travel on the top of the lagoon dykes and along the ditch tops, which are approximately 0.5 m above the existing ground.
- We were not provided with any information on the need for dissolved oxygen testing and therefore are not in a position to comment, if comment is indeed required.
- Based on revised information, Awanipark currently has 35 residences with holding tanks. Of these 35 residences, 17 are seasonal and 18 are permanent. This revision affects the organic and hydraulic contributions attributed to Awanipark as shown in Tables 4.2 and 4.4 of the Environment Act Proposal (EAP).
- The information previously provided for Pioneer Bay and Relax Ridge Campgrounds has also been updated to reflect a change in the hydraulic loading during the storage provided. Previously considered to be negligible, we have now allowed for 15% of the

wastewater generation from these sources to contribute to the loading during the storage period.

- Tables 4.2 and Table 4.4 have been updated with the aforementioned revisions to Awanipark, Pioneer Bay and Relax Ridge. Changes are in ***bold italics***. The total organic loading for the *existing* and *proposed* columns in Table 4.2 (Updated) have increased by 0.60 kg-BOD₅/d. The total hydraulic loading for the *present* and *proposed* columns in Table 4.4 (Updated) have increased by 991 m³. The lagoon, as designed in the EAP, is capable of servicing this additional loading while remaining in compliance with the standard guidelines.

TABLE 4.2 (UPDATED): SUMMARY OF THE ORGANIC LOADING TO THE LGD OF PINAWA LAGOON

Wastewater Source	Type	Wastewater Strength	Existing (2013)	Proposed (2033)
			[kg-BOD ₅ /d]	[kg-BOD ₅ /d]
Town of Pinawa	Forcemain	0.077 kg-BOD ₅ /person	112.1	184.8
Pioneer Bay Campground	Forcemain	250 mg-BOD ₅ /L	1.8	1.8
Relax Ridge Campground	Holding tank	1.8 kg-BOD ₅ /t	3.5	<u>3.5</u>
Awanipark Development	<i>Holding tank</i>	<i>1.8 kg-BOD₅/t</i>	<i>4.3</i>	<i>4.3</i>
Tim Hortons Camp	Forcemain	250 mg-BOD ₅ /L	-	3.8
TOTAL			<i>121.7</i>	<i>198.2</i>

TABLE 4.4 (UPDATED): SUMMARY OF THE HYDRAULIC LOADING TO THE LGD OF PINAWA LAGOON DURING THE 227-DAY LAGOON STORAGE PERIOD

Wastewater Source	Type	Present (2013) [m ³]	Proposed (2033) [m ³]
Town of Pinawa — existing population	Forcemain	284,520	<u>264,410</u>
Town of Pinawa — new residences/condos		-	69,440
Town of Pinawa — PCH		-	3,178
Pioneer Bay Campground	Forcemain	153	153
Relax Ridge Campground	Holding tank	65	65
Awanipark Development	<i>Holding tank</i>	<i>787</i>	<i>787</i>
Tim Hortons Camp	Forcemain	-	3,405

TOTAL		285,525	341,438
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- We have records from the 2013-2014 storage period up to the end of April 2014. Thus far, the wastewater generation for the storage period, which includes infiltration, is approximately 659 litres per person per day (Lpcd).

Comparing this recent data with past years over the same months from 2009-10, 2010-11, 2011-12 and 2012-13 where the wastewater generation rates were 777, 1325, 1041 and 756 Lpcd, respectively, we see a decrease. Therefore, we continue to suggest that in light of the efforts made by the Town of Pinawa to reduce flows and their continuing work on storm sewer separation, a design wastewater generation rate of 800 Lpcd is prudent at this time.

Of note, the Town of Pinawa has most recently put out a request for proposals (RFP) for a storm water drainage study with one of the objectives being the determination of the amount of inter-connection between the storm water collection system and the sanitary waste water collection system.

- The rock outcrops were not factored into the calculation of the existing storage capacity, but the proposed total lagoon storage volume exceeds what is required by (345,865 — 341,438 =) 4,427 cubic metres. The rocks noted in Secondary Cell North and West reduce the storage capacity by approximately 250 and 1,150 cubic metres, respectively.

We do not anticipate that the suspected boulder/bedrock encountered in test hole one. (TH1) will reduce the storage capacity within Proposed Secondary Cell #3 due to its depth of discovery. If a boulder/bedrock was discovered that would significantly impact the storage of a secondary cell, methods would be employed during construction to minimize the effects.

- There are three known rock outcrops in the existing Pinawa lagoon. Two outcrops are located in Secondary Cell West and one in Secondary Cell North. Even though there is lack of evidence to our knowledge that suggests that these cell liners are not intact, it would seemingly be difficult to prove that they are continuous. Therefore, if Manitoba Conservation and Water Stewardship is requesting that these rock outcrops be covered in some way to make certain that these liners are continuous, there will be significant financial implications to the LGD of Pinawa to accomplish this task. Further, if this work is to be written into a new Environment Act Licence, further discussions between all parties involved will be required to determine the timing deadlines.

It would seem that rock blasting would be required to remove some or all of the rock and depending on the most cost effective way to line the cells, it would involve covering the areas with suitable clay (1.0 metre thickness) or covering them with a synthetic liner. This type of work would require each of the secondary cells to be removed from operation and dried to an extent that the outcrops could be accessed by ground-travel equipment. We would suggest that covering these rock outcrops could

only be done after the new cells are constructed because the additional storage they provided would be needed. We anticipate that this work may be done in a minimum span of two years, subject to the weather conditions. However, commencement of this work will be more determined by the time needed for the LGD of Pinawa to budget and plan for this work to be done.

- Sludge depth measurements were taken by WSP (formerly GENIVAR) in the summer of 2012 within the existing cells of the Pinawa Lagoon. Shown below are the sludge depth ranges for each existing cell:
 - Primary Cell: 0.10 – 0.30 m
 - Secondary Cell West: 0.15 – 0.30 m
 - Secondary Cell North: 0.15 – 0.20 m

These sludge depths are all within the dead storage depths and therefore do not impact the storage capacity of the lagoon.

- Rip rap is proposed for the proposed secondary cells only.
- All general comments noted.

June 10, 2014

Conservation and Water Stewardship (CWS), Environmental Compliance and Enforcement Branch submits the following comments on the Environment Act Proposal Local Government District of Pinawa Wastewater Stabilization Pond Expansion submitted by Genivar Inc. dated November 2013 and TAC comment response dated May 20, 2014.

3.3 Effluent Quality and Discharge Route

- *CWS remains uncertain from the information provided, that the targeted phosphorus level of 1 mg/L will be achieved consistently at the final discharge point.*

4.4 Hydraulic Loading

- *The proponent's response to the TAC comments references a pending drainage study to determine if there is an inter-connection between the storm water collection system and the sanitary waste water collection system. Should the study verify the existence of such an inter-connection, will measures be taken to separate the connection to direct the storm water away from the lagoon facility?*

5.2.2 Construction Details

- *CWS notes that sludge accumulation estimates indicate depths as high as 0.3 m in the primary and secondary cell (west). What impact will the additional sludge accumulation over the life of the lagoon have on the hydraulic capacity of lagoon facility if it extends above the dead zone of the cell(s)? Are measures proposed to minimize impacts of long-term sludge accumulation on available hydraulic capacity?*

- *CWS understands that all wastewater stabilization ponds in Manitoba are required to ensure a continuous liner to prevent contamination of the surrounding environment. Should the proponent choose to construct a continuous liner over the existing rock outcrops, additional storage capacity may be required to provide sufficient storage capacity.*

Disposition:

- The draft Environment Act Licence contains a clause that requires that when the quantity of total phosphorus the wastewater treatment lagoon discharges exceeds 820 kilograms per year, the Licencee shall not discharge effluent from the wastewater treatment lagoon where the total phosphorus content of the effluent is in excess of 1.0 milligrams per litre.
- The draft Environment Act Licence contains a clause that for a period of at least five years following the commencement of operation of the wastewater treatment lagoon under this Licence, at the beginning, middle, and end of each discharge campaign, obtain samples of effluent flowing in the serpentine wetland discharge ditch at the discharge end, prior to the effluent encountering any other surface water, and have them analyzed for the total phosphorus content expressed as milligrams per litre and report the results to the Director.
- The draft Environment Act Licence contains clauses that requires that the quantities of total phosphorus, in kilograms per year, discharged from any secondary cell as shown on Schedule “A” to the Licence to the serpentine wetland discharge ditch and the serpentine wetland discharge ditch to the Winnipeg River be determined and reported annually to the Environment Officer by February 28 of the following year.
- The ability to manage hydraulic loads to the wastewater treatment lagoon and maintain compliance with the limits, terms and conditions of an Environment Act Licence relates to the operating and maintaining the wastewater collection system and wastewater treatment lagoon within the limits of designs as proposed.
- The draft Environment Act Licence contains a clause that requires that the Licencee submit to the Director for approval, on or before January 30, 2016, an engineering assessment and report regarding Primary Cell, Secondary Cell No. 1 and Secondary Cell No. 2 of the wastewater treatment lagoon as shown on Schedule “A” to the Licence that includes:
 - a) assessments of the soil liners and construction characteristics of the dykes and bottoms of these cells including details of the associated sampling and analysis results;
 - b) options with recommendations, plans, and schedules to establish required continuous liners for these cells; and
 - c) proposed actions relative to the management and ultimate disposal of the existing, accumulated sewage sludge contained within these cells.

Crown Lands Programs and Policy Manager – Manitoba Conservation and Water Stewardship

- *The Protected Areas Initiative has no concerns with the proposal and the Lands Branch has no concerns, conditional upon the following:*
 - *Without limiting other necessary regulatory approvals the proponent shall, prior to development on Crown land, apply for and obtain the appropriate land tenure allocations in accordance with The Crown Lands Act, from the Crown Land and Property Agency. It is noted that the LGD has applied for the purchase of the lagoon expansion area under Crown land Sale number 68114. Sale approval has not been issued.*
 - *The proposal will impact Crown land in NE 5-14-12 EPM designated as the Whiteshell Provincial Forest. Use of these lands will require authorization from the Director of Forestry*
 - *A damage appraisal and timber permit is required.*
 - *The project identifies the use of a serpentine drain however no detailed design information is provided. Additional design details should be provided prior to construction.*

Proponent Responses – May 20, 2014:

- The land purchase continues to move towards completion.
- After inquiring further with Crown Land Programs and Policy Manager, we were directed to contact the Forestry Department once an Environment Act Licence is issued.
- Drawing CO2 included in Appendix D of the EAP submission does define the serpentine wetland discharge ditch to be 2,000 metres in length, with a slope of 0.01% and 5:1 side slopes. Detailed design will be completed prior to the project being tendered. At this point, we anticipate the ditch will be approximately 1.0 m in height from the ditch bottom to ditch top with a 2.0 m bottom width. Based on our survey information, we expect the top of the ditch to be approximately 0.5 metres above the existing ground.

Water Control Works and Drainage Licensing Section – Conservation and Water Stewardship

- *Please advise the proponent that the outlet for the lagoon will require licensing under the Water Rights Act - an application is attached for their convenience. Any inquiries in this regard may be directed to the local Water Resource Officer. Their contact information may be found at:*
 - *http://www.gov.mb.ca/conservation/waterstewardship/licensing/pdf/areas_of_focus_jan_23_12.pdf*
- *The drainage and/or alteration of permanent and semi-permanent wetlands is not permissible under the Water Rights Act.*

Proponent Responses – May 20, 2014:

- An Application for Licence to Construct Water Control Works is scheduled to be submitted.
- General comments noted.

Environmental Services Section – Infrastructure and Transportation

- *No concerns.*

Office of the Fire Commissioner – Family Services and Labour

- *No concerns or comments.*

Parks and Protected Spaces Branch – Conservation and Water Stewardship

- *No concerns.*

Forest Management – Forest and Peatlands Branch – Conservation and Water Stewardship

- *Now that the location and extent the proposed expansion extends into the provincial forest has been identified I have no concerns with the proposed expansion of the Pinawa Lagoon into the Whiteshell Provincial Forest from a purely forest harvesting perspective.*

Note: Other environmental factors should be considered due to the proximity of the serpentine wetland discharge ditch to the wetlands and lakeshore.

Disposition:

- The draft Environment Act Licence contains a clause that requires that the Licencee maintain and operate the serpentine wetland discharge ditch such that it can provide the service for which it is intended.

Community and Regional Planning – Municipal Government

- *No concerns.*

Wildlife Branch – Conservation and Water Stewardship

- *No concerns or comments.*

PUBLIC HEARING:

A public hearing has not been requested.

CROWN-ABORIGINAL CONSULTATION

The Government of Manitoba recognizes it has a duty to consult in a meaningful way with First Nations, Métis communities and other Aboriginal communities when any proposed provincial law, regulation, decision or action may infringe upon or adversely

affect the exercise of a treaty or Aboriginal right of that First Nation, Métis community or other Aboriginal community.

The proposal involves the construction and operation of an expanded wastewater treatment lagoon on a portion of land designated as “Industrial” and zoned “Waste Disposal Industrial” while another portion is Crown Land is being acquired by the Local Government District of Pinawa. Adverse effects on surface water or habitat for wildlife or fisheries are not anticipated.

Since the quantity of land required for the project is very small and there is a large quantity of other forested land in the area, it is concluded that Crown-Aboriginal consultation is not required for the project.

RECOMMENDATION:

Issue an Environment Act Licence in accordance with the attached draft. Enforcement of the Licence should be assigned to the Environmental Approvals Branch until inspection of the liner has been completed.

PREPARED BY:

Robert Boswick, P. Eng.
Environmental Engineer
July 31, 2014

Telephone: (204) 945-6030
Fax: (204) 945-5229
E-mail Address: robert.boswick@gov.mb.ca