

Conservation and Water Stewardship

Environmental Stewardship Division Environmental Approvals Branch 123 Main Street, Suite 160, Winnipeg Manitoba R3C 1A5 T 204 945-8321 F 204-945-5229 www.gov.mb.ca/conservation/eal

File: 651.20

January 17, 2014

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

Dear Ms. Kennedy:

Re: Stephenfield Provincial Park Wastewater Treatment Lagoon Upgrades - Environment Act Proposal

In response to the November 12, 2013 letter from Manitoba Conservation and Water Stewardship regarding the Environment Act Proposal (EAP) for the Stephenfield Provincial Park Wastewater Treatment Lagoon Upgrades, supplementary information has been submitted by the proponent's consultant.

Attached you will find the consultant's January 3, 2014 letter responding to the comments and requests for additional information presented by the TAC. Please review the response to determine if your comments and requests for additional information have been satisfactorily addressed.

Your comments, if any, are required not later than two weeks after the date of this letter. No response on your part will be assumed to indicate no concern.

If you have any questions, please contact me at (204) 945-2614 or by e-mail at Rafiqul.Chowdhury@gov.mb.ca.

Yours truly,

"Originally signed by"

Rafiqul Chowdhury, M.Eng., P.Eng Environmental Engineer

Attachment

c. Donna Smiley, Provincial Manager, Environmental Compliance and Enforcement Branch Public Registries

Stantec

Stantec Consulting Ltd. 905 Waverley Street Winnipeg MB R3T 5P4 Tel: (204) 489-5900 Fax: (204) 453-9012

January 3, 2014 File: 111213890

Attention: Mr. Rafiquel Chowdhury, P.Eng.,

Environmental Engineer

Manitoba Conservation and Water Stewardship Climate Change and Environmental Protection Division Environmental Approvals Branch 123 Main Street, Suite 160 Winnipeg, MB R3C 1A5

Dear Mr. Chowdhury,

Reference: Stephenfield Provincial Park

Wastewater Treatment Lagoon Upgrades

Environment Act Proposal Supplemental Comments

We have the following response to the supplemental questions and comments as outlined in your letter of November 12, 2013, and our telephone conversations:

 Memorandum from Water Quality Management Section, Water Science and Management Branch – Manitoba Conservation and Water Stewardship, dated November 8, 2013

Point 1 The phosphorus limit of <1 mg/L will be met as previously confirmed in our letter of August 26, 2013.

Point 2 a) Effluent Irrigation/Land Application of Treatment Effluent

The treated effluent quality will be significantly improved after upgrading and will meet both organic and hydraulic loading requirements, which it does not currently meet. The upgraded treated effluent will not be a factor in causing heavy algae blooms as no treated effluent will be discharged during the summer. The use of alum for phosphorus reduction would only be if required, and it is not expected that it will be required at this time. There is no land owned by the Park were treated effluent could be used for effluent irrigation/land application. The operating cost for effluent irrigation/land application would be very substantial and it would be in addition to the upgrade costs outlined in the Stantec EAP document. Therefore, effluent irrigation/land application is not considered necessary or feasible.



Page 2 of 3

Reference: Stephenfield Provincial Park

Wastewater Treatment Lagoon Upgrades

Environment Act Proposal Supplemental Comments

b) Nutrient Reduction Strategies

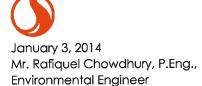
Again, we expect the nutrient levels to meet Provincial requirements as stated in point a) above. Therefore, nutrient reduction would not be required. A constructed wetland is not considered feasible as there is no Park land available and the capital cost would be prohibitive as this cost is in addition to the lagoon upgrade costs. Vegetation harvesting is part of the required operating procedures and the Park will remove vegetation if and as required. There are no alternative lagoon designs, including trickle discharge, that are considered appropriate or feasible for this lagoon. Chemical treatment, other than potentially alum for phosphorus removal, is not expected to be appropriate.

Point 3 Revised Primary Cell Hydraulic Storage for Alternative 4

As discussed, the accumulated sludge zone in the existing primary is to be considered part of the 1.5 m operating zone. Also, there is a minimum of .3 m dead zone at the bottom of the 1.5 m operating zone. Therefore, the maximum allowable hydraulic storage zone is 1.2 m.

The existing Interconnecting pipe between the two cells is .44 m above the bottom of the lagoon. Therefore, the hydraulic storage zone is 1.06 m for the existing primary and 1.2 m for the existing secondary which is to be converted to a second primary cell. Therefore, the allowable half storage of the existing two cells has been calculated to be 2,215 m³ reduced from 2,767 m³ in the EAP. This results in a new secondary cell with a required 3,852 m³ hydraulic storage, increased from 3,300 m³ in the EAP. To achieve this increase in hydraulic storage, the bottom dimensions of the proposed new secondary cell would be 25 m by 93 m instead of 25 m by 61 m as calculated in the EAP. This would be a .39 hectare cell at full supply level (1.5 m of wastewater). The cell width would remain the same as it is restricted by the Park property. The additional storage would be achieved by lengthening the proposed new secondary bottom by 32 m for which there is adequate property.

This revised Alternative 4 scenario results in all cells having a bottom elevation of 300.50 m. Therefore the interconnecting dike only requires impervious clay fill raising of .5 m instead of 1.0 m. Similarly, the outside dikes only need to have .5 m of liner raising or impervious clay fill rather than 1.0 m. Due to the 50% reduction in raising the height of existing dikes, the capital cost for Alternative 4 is considered to be unchanged with the new scenario.



Page 3 of 3

Reference: Stephenfield Provincial Park

Wastewater Treatment Lagoon Upgrades

Environment Act Proposal Supplemental Comments

We trust this addresses the comments and requested additional information.

Yours truly,

STANTEC CONSULTING LTD.

Tim Stratton, P.Eng. Project Manager Phone: (204) 478-8997

Fax: 9204) 478-8981

tim.stratton@stantec.com

 $klb\ v:\\\ 1112\ active\\\ 111213890\ 0200_correspondence\\\ letters\\\ ltr_stephenfield_environmentact_prp_20140103.docx$