



April 29, 2014

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

Attention: Tracey Braun, Director

**Re: Town of Pilot Mound Water Treatment Plant Upgrade  
Notification - Proposed Minor Alteration**

Dear Ms. Braun:

Please accept this letter, supporting information and \$500.00 fee as notification and approval request for a proposed minor alteration to Environment Act Licence 3093 according to Section 14 of *The Environment Act*.

Environment Act Licence 3093 was issued to the Town of Pilot Mound regarding the construction and operation of a water supply system to provide potable water for municipal purposes. The water system includes a groundwater well, pipeline and water treatment plant (WTP) upgrade. The neighboring rural municipality (RM) of Pembina and Town of Manitou currently need a sustainable, potable water supply able to comply with legislation. An expansion to the Pilot Mound WTP upgrade project will create a regional water supply system that is capable of servicing the Town of Pilot Mound, Town of Manitou and the RM of Pembina. Supporting information is outlined as follows:

Description of the Physical Changes

The projected water demand of the expansion to create a regional water supply will increase from 5.5 L/s to 21 L/s. The demand for each location is shown in the following table:

<u>Location</u>	<u>Demand (L/s)</u>
Town of Pilot Mound	5.9
Town of Manitou	7.4
RM of Pembina	4.2
Future Development	3.5

It is proposed to install a 10 inch diameter well in addition to the original 8 inch well at the Glenora Aquifer to meet the increased water demand. The diameter of the pipeline from the well site to the Pilot Mound WTP will be increased from 200 mm to 300 mm to accommodate the added flow.

There will be no change to the treatment process proposed for the WTP upgrade other than to increase treatment capacity. Two reverse osmosis membrane skids will be installed rather than one in order to produce permeate at a rate of 15 L/s that when combined with the greensand by-pass flow will result in a blended flow of 21 L/s (see attached flow diagram).

Approximately 30 km of 300 mm pipeline will run from the Pilot Mound WTP to the Town of Manitou WTP as per the attached drawing. The lime/soda ash treatment process in Manitou will be decommissioned though the WTP will continue to provide chlorination should the treated water from the Pilot Mound WTP require it. Another 18 km of 150 mm pipeline will be installed that runs from the reservoir at Manitou to Darlingford in the RM of Pembina where a pumphouse and 200 m<sup>3</sup> reservoir will be constructed.

#### Identification and Quantification of Substances

The added treatment capacity will increase the amount of concentrate generated. At a reject rate of 25% the resulting concentrate flow from the membrane process will be 5 L/s. The concentrate will discharge to the Goudney Reservoir and no change is required to the proposed discharge route.

In January 2014 the Town of Pilot Mound submitted an application for a Licence to Construct a Well and Divert Groundwater to Water Stewardship for the Glenora Aquifer. The proposed raw water withdrawal rate is 26 L/s and if operated at a maximum 20 hours/day, the annual required withdrawal is 341.5 dam<sup>3</sup>/year. These rates are sufficient to meet the demand for the proposed regional system to supply Pilot Mound, Manitou and the RM of Pembina.

#### Environmental Assessment

The Goudney reservoir drains through Pilot Creek which is a seasonal stream. Environment Canada hydrometric flow data from 1963 – 1994 for Pilot Creek shows an average annual flow of 3704 dam<sup>3</sup>/year. The proposed treatment expansion will contribute additional dissolved minerals to the Goudney Reservoir at an annual discharge flow of 66 dam<sup>3</sup>/year. While the higher concentrate volumes result in a slight increase in barium, calcium, bicarbonate, silica and total dissolved solids (see attached table) the overall impact on Pilot Creek remains minimal and is not considered to cause a significant environmental impact.

The installation of an additional 48 km of pipeline will occur primarily within municipal right of ways or easements that are previously disturbed, regularly managed and comprised primarily of

grasses. As the areas are already disturbed, they are unlikely to contain rare plant species, and the amount of vegetation disturbance is expected to be minimal. Operation, monitoring and maintenance activities will be restricted to designated and previously disturbed areas. Potential effects to vegetation are considered to be negligible.

Impacts to surface water and fisheries resulting from the pipeline expansion will be minimized by implementing practices to reduce soil and contaminate runoff as previously stated in the original EAP. In addition horizontal directional drilling will occur under all watercourses containing water.

### Summary Statement

The expanded water system to supply the Town of Pilot Mound, Town of Manitou and the RM of Pembina from the Pilot Mound WTP will include an additional well at the Glenora Aquifer, an increase in pipeline size from the well site to the Pilot Mound WTP, installation of an additional 48 km of pipeline and the construction of a pumphouse/reservoir at Darlingford. Alterations to the system are expected to result in negligible impacts to the environment.

Designs and tender documents have been prepared and therefore a prompt response is requested. If you require additional information, please contact the undersigned at (204) 726-6080 or by email at [dee.genaille@gov.mb.ca](mailto:dee.genaille@gov.mb.ca).

Yours truly,

*DM Genaille*

Dee Genaille, M.Sc., P.Eng.  
Project Engineer

c: Doris Heaver, Town of Pilot Mound

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