SNC·LAVALIN

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SNC-LAVALIN INC.
Suite 200
Park Lane Terraces
5657 Spring Garden Road
Halifax, Nova Scotia
Canada B3J 3R4

Telephone: 902-492-4544
Fax: 902-492-4540

June 7, 2012

Municipality of the District of Chester
151 King Street
P.O. Box 369
Chester, Nova Scotia
B0J 1J0

Attention: Matthew Davidson, P.Eng.
Director of Public Works

Dear Matt,

RE: Review of Future Water Supply Report (by KVM Consultants May 2011)

We have reviewed the report "Future Water Supply Village of Chester and Area" prepared by KVM Consultants Limited, and offer the following comments for your consideration. Generally, the concept presented appears to be feasible considering the acquisition of land for the water treatment plant and reservoir facilities.

Raw Water transmission

Based on the scaled length of the various options, raw water transmission was estimated at a unit value of about $650/m. In our opinion this is a reasonable estimate considering the clearing required along the raw water transmission alignment from Stanford Lake.

Water Treatment Plant

Based on source water, treatment for low pH and low alkalinity will be required. A water treatment plant of a similar capacity has recently been constructed in Mulgrave, N.S. at a cost of $3.2 million. However, at the Mulgrave plant the backwash water is discharged to the municipal wastewater collection system. For the Village of Chester the wastewater collection system is approximately 1 km from the proposed WTP sites, so on-site treatment of backwash water is anticipated. This system would typically consist of lagoons to decant backwash solids, with clear effluent discharge to a natural watercourse. We anticipate

additional costs of approximately $0.5 million for this item. As such we feel a WTP cost estimate of $3.7 million may be more appropriate.

Treated Water Distribution

Unit rates for treated water transmission are approximately $450/m for lines to RR#1, and $375 for lines to RR#2. These rates are lower than for raw water transmission, and may reflect reduced costs for alignment development, either following the raw water transmission alignment to RR#1, or along an established corridor to RR#2.

Reservoirs

A significant difference is noted in the cost estimates for the reservoir R#1 and R#2. Based on the storage volume of 2048 m3, unit cost for storage is 512$/m3 for R1 compared to 1436 $/m3 for R#2; the value for R#1 is closer to what we would expect as a unit cost for storage.

These estimates may be reasonable; factors such as land acquisition costs may justify the additional cost at R#2, however supporting information was not found in the report. We recommend that the cost estimates for the reservoirs be reviewed to clarify specific contributing costs.

Town Distribution

A cost estimate for distribution of $4.6 million is provided in Table 7. The length of the proposed town distribution network, scaled from Figure 3.0, is 7170m, for a unit cost of about $640/m. This is similar to the value for raw water transmission, but instead of site clearing, the price may reflect traffic control, right-of-way, constraints presented by existing infrastructure, restoration and other considerations related to construction in town. We consider this estimate to reasonable.

Additional Option

Recent purchase of the full parcel PID 60147147 presents the potential to situate WTP#2 further north, closer to Stanford Lake and R#1. This configuration would shorten raw and treated water transmission lengths, and place the WTP at a greater distance from the public road.

We do note that as steps are taken toward the development of this infrastructure, locations may be modified due to political and landowner issues that may arise. The overall cost of the project would remain within the estimated range, although some items may increase if cost for materials rise. The cost estimates for the various options are understood to be

construction costs only, and the costs for operations and maintenance are expected to be similar for the various options.

We trust the information provided herein will assist you in your decisions regarding the various options presented in the Water Supply report. Should you require any additional information, please contact the undersigned.

Yours truly,

SNC-LAVALIN INC.

Eric Alan Jordan

Eric Jordan, M.Sc., P.Eng.
Civil Engineer

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