



March 15, 2019

Hans Pfeil, B.Sc., APALA, CSLA
Director of Public Works
Municipality of Argyle
27 Courthouse Road
Tusket, Nova Scotia
B0W 3M0

Subject: Lower East and Middle East Pubnico Water Well Assessments

Dear Hans:

WSP has reviewed the information provided and is pleased to provide the following proposal.

The objective of the proposed work is to assess the capacity of the Lower East Pubnico (LEP) and Middle East Pubnico (MEP) Water Supply and provide recommendations for the replacement of MEP water supply infrastructure. WSP will address this objective by assessing the well capacity of three existing wells and summarizing the water demand of the Middle East Pubnico water users. This information will be used to develop a cost-effective strategy for infrastructure renewal.

The proposed work plan consists of the following tasks. Costs associated with these tasks are summarized in Table 1.

Task 1: Record Review and Testing Work Plan

- Review of previous reports, permits and well records;
- Development of a well testing work plan in coordination with the Municipality of Argyle.

Task 2: Well Testing

Well testing will be conducted with equipment and staff of the Municipality of Argyle with testing design and data collection provided by WSP. The details of the well testing program will be defined as part of Task 1. However, for this proposal WSP assumes Municipality of Argyle staff will be available and have equipment to safely operate and install pumps as needed. WSP assumes the water will be pumped to the reservoir/tank and the flow rate will be measured by existing infrastructure and equipment. The general steps and the responsibilities of WSP/Municipality of Argyle are summarize as follows:

Step test and 8 hour test of LEP and MEP wells

WSP will be responsible for:

- Defining pumping rates

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- Installation of data loggers

Municipality of Argyle will be responsible for:

- Operation and installation (if required) of water pumps
- Managing water discharge
- Providing equipment for measuring flow rates
- Retrieving data loggers following well recovery and shipping equipment to WSP.

Task 3: Well Capacity Assessment

WSP will evaluate the well capacity using the step test and 8 hour pumping test data to determine transmissivity, specific yield and safe yield for the well. This information will be compared to the results of previous testing and hydrogeologic assessments to evaluate changes in the well capacity.

Task 4: Water Demand Assessment

WSP will compile a summary of Middle East Pubnico water demand from Comeau’s Seafood. This summary will include information in historic reports and interviews with the Municipality of Argyle staff and Comeau’s Seafood staff that are knowledgeable about the water supply system and water demand.

Task 5: Letter Report

The results of the testing and assessments will be documented in a letter report that will be submitted in digital format to the Municipality of Argyle. The report will include recommended strategies for the replacement of Middle East Pubnico water infrastructure (tank/reservoir, wells, pumps and monitoring equipment) that take into consideration the well capacity and water demands.

Table 1: Task Cost Summary

TASK	COST
1. Record Review and Testing Work Plan	\$ 750
2. Well Testing	\$ 5,738
3. Well Capacity Assessment	\$ 1,180
4. Water Demand Assessment	\$ 1,430
5. Letter Report	\$ 3,043
Project Administration	\$ 725
Total	\$ 12,866

The costs of the proposed work are summarized by task in Table 1 and total \$12,866, not including HST.

Assumptions utilized to develop the costs include:

- WSP will have access to the wells to install data loggers while the pumping tests are being conducted;
- WSP’s time at site will be limited to 3 days to oversee the pumping tests;
- Municipality of Argyle staff will be able to operate and install pumps as needed to test the wells;
- WSP will leave data loggers in the wells after the pumping tests are done. Municipality of Argyle staff will retrieve the WSP equipment and ship it to the Dartmouth office;



- The well evaluation will consider the well capacity only and does not include assessment of well interference or potential influences on surface water features;
- The report will not include a hydrogeological study of the wells or surrounding area;
- WSP will not be required to consult with provincial regulators.

We trust this is the information you require at this time. Please call me if you have any questions on the above.

Yours truly,

A handwritten signature in blue ink, appearing to be the name 'Patrick Lewis'.

Patrick Lewis, P.Eng.
Manager – Municipal Engineering, Nova Scotia

TB/mg