

CANADA'S
**MUSICAL
Coast**
Inverness County



Project Update

Inverness Wellfield

Circumstance and Objective of the Wellfield Program

- Find additional water supply to meet the growing demands of the community of Inverness.
- Coinciding with the increase in the demand on the water system, PW#2 experienced a reduction in output from 150USgpm to a range of between 70 and 80USgpm.
- The existing water treatment plant has the built capacity to enable treatment expansion.

Work To Date

- Four monitoring wells have been successfully drilled at the Inverness PW2 Well Field to delineate the configuration of the deep sand/gravel aquifer in the immediate vicinity of the Well Field.
- This program was designed to determine the optimum location for a new production well to enhance the volume produced by the Well Field to meet future demands.
- Small diameter monitoring wells (MW) were installed in each of the holes and have been monitored for water level and samples collected for water chemistry.
- EXP Services Inc.'s (EXP) recommended a new production well (PW8) should be positioned in the vicinity of 20MW3.



Delineated portion of gravel-filled channel

PW2

MW6

PW7

20MW4

20MW3

20MW1

20MW2

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Work To Date Continued

- Following a successful drilling program and the installation of PW8, the full Multi-Well Pump Test was undertaken as required by Nova Scotia Environment to determine the safe yield and chemistry of the entire Well Field when in full production.
- This is in support of a Water Withdrawal Approval permit submitted to NSE.
- The results of the Multi-Well Pump Test will also aid in the engineering design of the system.



Operational Safe Yield

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- The operational long-term yield is 123USgpm from PW8 .
 - The whole well field can produce around 193USgpm as operational yield. This includes PW8 - 123USgpm, PW3 - 22USgpm and PW4 - 48USgpm, totaling 193USgpm.
 - Maximum yields are : PW8 - 257USgpm, PW3 - 31USgpm and PW4 - 69USgpm, totaling 357USgpm.
 - Overtime a decrease in the PW3 and PW4 rates is expected, as the PW8 cone of depression grows and influences other cones. These rates and water levels will be closely monitored by SCADA and re-assessed annually.

Budget To Date

Wellfield Development Budget - Inverness

Task	Planned
EXP	\$28,176.13
Disbursements & Expenses	\$3,013.07
Island Well Drillers	\$121,433.87
Logan Geotech	\$17,751.16
Water Analysis	\$984.67
Multi-well pump test - EXP	\$3,739.15
PW#1 Investigation	\$2,713.69
Civil Drawings	\$8,819.20
Multi-well pump test - Disbursements & Expenses	\$4,139.08
Multi-well pump test - Water Analysis	\$1,067.22
Subtotal	\$191,837.24
HST	\$28,775.59
MOCI HST	\$8,222.13
NET TOTAL	\$200,059.37

Next Steps

- The permit for Water Withdrawal has been made to Nova Scotia Environment and is under review.
- The Water Treatment Plant has the designed capacity to treat 180USgpm when all filters are up and running however, one filter has not ever been in operation so the treatment capacity has been limited to 144USgpm. Staff are working to bring the filter online to ensure the plant is running at its designed capacity. This work is expected to be completed in the next month.
- There is room at the WTP for an additional four (4) filters. Each adding about 36USgpm treatment capacity. Estimates are being collected to add an additional two (2) filters at this time.
- Staff have received the civil drawings to connect PW#8 to the WTP, estimates will have to be collected to budget for and advance this work, totalizers will also have to be installed on each well and PW2 will need to be decommissioned.
- Estimates have been collected for the new PW8 pump.
- Due to commercial and residential community growth a Wellfield Development and Enhancement Program will continue in the community of Inverness as staff and engineering consultants work to ensure the Municipality has the capacity to serve the current and future service population of the community of Inverness. This work will be well informed by the Water Modelling Study, Inverness Growth Management Strategy and the Land Suitability Analysis, all of which are projects currently underway.
- The cost of the work to date has been partially offset from the Provincial Capital Assistance Program (PCAP).
- Municipal staff will work with consultants to out together a robust project plan to bring PW8 online and identify funding avenues to offset the expected costs and will come back to Municipal Council with an updated presentation at that time.