



REPORT

To: Electoral Area Directors Committee

Report Number: ENV-EADC-041

From: Environmental Services

Date: January 24, 2025

Subject: Rose Prairie Water Well Drilling Program Update

RECOMMENDATION:

That the Electoral Area Directors Committee recommend that the Regional Board proceed with amending the Rose Prairie Drilling Authorization Agreement with the landowner, approve drilling a fourth well within 50m of the third drilling location, and continue with the testing and sampling program to determine suitability of the water for treatment at the existing Rose Prairie Water Station to be funded through Electoral Area B Peace River Agreement Funds committed on December 14, 2023 from Spending Item # 1 – Potable Water and Feasibility Studies.

BACKGROUND/RATIONALE:

The Rose Prairie Bulk Potable Water Station was constructed in 2018 along with four other water stations in Electoral Area B. The Rose Prairie Water Station has never opened to the public. The water station has experienced many obstacles to opening since construction as outlined below:

2018 – 2019

- Rose Prairie Water Station was constructed and commissioned.
- Post commissioning treated water samples showed higher turbidity levels in the produced water than permitted by the Canadian Drinking Water Quality Guidelines (CDWQG) and by Northern Health standards. Proven reduction of turbidity was necessary before obtaining operating permits and licensing.
- The PRRD contracted Urban Systems to conduct a Granulated Activated Carbon (GAC) Pilot to assess turbidity reduction through GAC filtration to meet permitted levels. The pilot revealed that the selected filters were not viable in the long term due to high operational costs.
- The PRRD conducted a Phase 2 GAC Pilot with a modified filtration type to decrease turbidity and optimize operational costs. The outcomes demonstrate that the revised filtration type in Phase 2 successfully achieved the required turbidity levels in the produced water.

2021

- February 11/12 – The PRRD received a Water License and Northern Health Operating Permit based on the Phase 2 GAC pilot results.
- February 22 – The Rose Prairie Water Station was scheduled to open to the public.
- February 21 - Unsafe levels of explosive gases were detected at the Rose Prairie Water Station during routine inspections by facility operators. The station remained closed for further investigation.
- March 11 – The Regional Board officially closed the Rose Prairie Water Station and approved the investigation of an alternative water source and improved treatment options for the existing water source.

- [June](#) – TetraTech was awarded the “RFP#28-2021 – Feasibility Study Water Source Area B” to identify alternative water sources and examine potential treatment options to remove dissolved gases from the Rose Prairie water source.
- [September](#) – Results of the alternative water source study was presented to EADC and deferred until testing of the Rose Prairie water and well was completed.
- October – TetraTech completed testing of the dissolved gases in the Rose Prairie water. Results indicated levels of methane and hydrogen sulfide dissolved in the water.
- December – TetraTech proceeds with designing conceptual treatment options for gases and turbidity.

2022

- [February 17](#) – A report outlining **conceptual** treatment options for the dissolved gases and turbidity issues including a Class D cost estimate of \$1,350,000 including a 40% contingency was provided to the EADC. Decisions to move forward were deferred until a public meeting could be held with the Rose Prairie residents to discuss costs and measure their support for necessary upgrades.
- March 31 – A meeting was held with Rose Prairie residents outlining alternative sources, and estimated costs for treatment of the upgrades at the existing station. A survey was conducted at the same time for residents to state their level of support of alternative options and offer additional feedback. Results of the survey and the meeting indicate many residents are in support of the upgrades and the costs of the Rose Prairie Water Station.
- December - Funds were allocated to the Area B Potable Water Budget to cover engineering and construction for the water treatment upgrades at the Rose Prairie Water Station.

2023

- April 27 - Electoral Area Directors Committee recommends that construction design commences, and staff can procure a construction firm.
- July – TetraTech inspects the Rose Prairie Water Station to collect details of the existing components of the station and systems.
- September - Based on the information gathered during a site inspection and required changes to the conceptual design, TetraTech’s estimate to complete the necessary safety and treatment upgrades is reported to cost from \$2.9 - \$4.5 million with a +/- 40% contingency.

2024

- [January 26](#) – The Electoral Area Directors Committee recommends pursuit of options for exploring a new well in the vicinity of the existing well to find a better source of water using the existing pre-approved Rose Prairie Water Station PRA Allocation.
- February – Staff work with TetraTech Canada to conduct a hydrogeological assessment to determine potential drilling locations in proximity to the existing Rose Prairie Water Station and develop a drilling and testing program.
- July – Staff procure Carbon Mountain Drilling to conduct the drilling and testing program for potential new well locations.
- August – November – Drilling and gas and water testing program occurs.
- December – TetraTech analyzes drilling and sampling results and compiled the 2024 Field Program Summary – Alternate Water Source Viability Testing for the Rose Prairie Area.

The drilling and testing program had minimum requirements for a new water well to meet the treatment design of the existing Rose Prairie Water Station. A new well must have a minimum of 20

gallons per minute flow rate and be free of any gases or substances that the existing treatment system could not remove.

Based on the drilling and testing program results, drilling locations one and two do not meet the minimum requirements and are not suitable for treatment with the existing Rose Prairie Water Station design. As drilling location three was not fully developed and tested as per the drilling and testing program plan, it is recommended to be used as an observation well for an additional fourth test well.

Based on the location three sampling results, the water contains elements that exceed the drinking water standards and may be treatable using the existing treatment system. Further, there is an additional risk that with further well development flow rates may reduce below the minimum 20 gal/min or elemental elements may be present in the new location. This may result in necessary treatment testing and capital upgrades, including the need for additional water storage.

ALTERNATIVE OPTIONS:

1. That the Electoral Area Directors Committee recommend that the Regional Board proceed with decommissioning and reclamation of the existing Rose Prairie Water Station and affiliated assets, to be funded through Electoral Area B Peace River Agreement Funds committed on December 14, 2023, from Spending Item # 1 – Potable Water and Feasibility Studies.
2. That the Electoral Area Directors Committee provide further direction.

STRATEGIC PLAN RELEVANCE:

- Asset and Infrastructure Management

FINANCIAL CONSIDERATION(S):

The available capital budget for the Rose Prairie Water project is \$651,831. Previously committed Electoral Area B Peace River Agreement Funds and Electoral Area B Gas Tax Funds are funding the capital project.

Table 1: Project Expenses

Project Expense	Expenses to Date
Drilling	\$ 97,370.00
Sampling	\$ 63,423.00
Engineering	\$ 114,716.00
Total Project Expenses	\$ 275,509.00

Table 2: Project Funding Commitments

Grant Source	Original Funding Commitment	Spend To Date	Remaining Commitment
Electoral Area B Peace River Agreement	\$ 409,470.00	\$ 275,509.00	\$ 133,961.00
Electoral Area B Gas Tax	\$ 407,000.00	\$ 0.00	\$ 407,000.00
Total Project Funding	\$ 816,470.00	\$ 275,509.00	\$ 540,961.00

COMMUNICATIONS CONSIDERATION(S):

Staff will work to develop a communications strategy to inform the public of the final Regional Board decision.

OTHER CONSIDERATION(S):

Staff will modify contracts in alignment with the PRRD Purchasing Policy to allow for a contract extension and an increase to the sampling contract, as well as a contract extension for the drilling program.

Attachments:

1. 2024 Field Program Summary – Alternate Water Source Viability Testing for the Rose Prairie Area

Deferred from the January 24, 2025 Electoral Area Directors Committee