



ARNASON Industries Ltd.

GENERAL CONTRACTORS AND ENGINEERS

Director
Environmental Assessment and Licensing Branch
Manitoba Conservation
160-123 Main Street
Winnipeg, MB
R3C 1A5

Re: Community of Crane River Water Treatment Plant – Environmental
Assessment Report

Environmental Licensing,

Please see the attached drawings and info packages from the water treatment design done by KGS Regina for the Environmental Act Proposal for the Community of Crane River, MB. Attached is also the check for the \$500 fee for the Class 1 Developments.

If you have any further questions, please do not hesitate to contact us.

Sincerely,

Kevin Esau

P.O. Box 48, Group 200, R.R. 2 Winnipeg, Manitoba R3C 2E6

Phone: (204) 633-2567 Fax: (204) 694-5622

Location: Perimeter Highway 101 and ¼ Mile West of Highway 7 on the North Access Road



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Executive Summary

The community of Crane River and Manitoba Aboriginal Northern Affairs (MANA) has requested Arnason Industries Ltd to prepare the Environment Act Proposal for the construction of the new water treatment plant in Crane River, Manitoba.

Introduction and Background

The EAP is being made for the Community of Crane River, Manitoba. This is for the construction of a new water plant, which uses the existing water supply from an intake line inside settling ponds located to the west of Crane River that supplies the existing water plant. Arnason Industries Ltd. has been hired by Manitoba Aboriginal and Northern Affairs to construct a new water plant beside the existing plant.

The new water plant construction involves building beside the existing water treatment plant and installing a new slow sand treatment and nano filtration treatment plant. This type of treatment system was requested by the owner at the time of tendering. It was suggested by the Office of Drinking water to perform a pilot plant study to determine if this treatment system would work with the surface water in this region. This treatment system will be replacing the current media filter currently being used in the existing water plant.

Currently, the existing plant in operation discharges its backwash water back into the environment, which drains back into the river. It is proposed that the new water plant will also discharge its backwash water into the environment. Following this section, there will be details on what the backwash water contains and how it is concluded that the environmental effects of the wastewater discharge will be insignificant. The community will own and operate the water treatment plant, and will provide a standard monitoring of the discharged wastewater to confirm our conclusion.

Description of Proposed Project

Project Location Geography

- The Community of Crane River is located on the west side of Crane River and west of Crane River First Nations. Crane River is approximately 70 kilometer north of Ste. Rose du Lac, MB. The new WTP is located directly north of the existing water plant, and is owned by the community.

Ownership

- Ownership of the existing land of both the current and the proposed water treatment plants is held by the Community of Crane River.

Land Use

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- Land us of the proposed site is an empty river lot space of no other use. The lot faces the river and is shared with the Community Office building, and the two water settling ponds for the WTP.

Description of Existing Project Environment

- The local area of the water plant is on built up area next to the river. Between the WTP and the river is a dike to protect the community and WTP from spring flooding. The plant is approx.. 70 meters from the river banks.
- The existing land is not used for any agriculture, forestry, mining, hydroelectric, oil, gas, recreation or tourism purposes.

Socioeconomic environment

- No existing public safety and health risks in the development area.
- No protection areas located at the construction site.
- The Community of Crane River lies across the river from the Crane River First Nations.

Description of Existing System

System Use

- **Estimated average gross water use for all purposes:** 40,000 L (8.5 hours plant operation per day)
- **Water treatment plant requirements:** 1.3 L/s
- **Estimated per capita consumption:** 250 L/day/person is what was used for community consumption rates.
- **Agricultural and livestock water use:** None for this community

Water Conservation Report

- **Water conservation report:** all efforts are made by MANA, Crane River water treatment plant operator and Crane River council to inform the public and residents who use water; to conserve and not waste.
- This is achieved by limiting the watering of their lawn's and washing of their cars.
- Water bleeders are not used, water lines are a continuous loop to avoid freezing and water line breaks. All water lines are of plastic or poly and will not corrode.

Description of Environmental Effects

- There will not be any effect on the biophysical environment, which includes wildlife, fisheries, surface water, groundwater, and forestry resources.
- The proposed WTP is to discharge waste based on the information provided by KGS and the treatment system suppliers. For the slow sand tanks, backwashing happens on one tank at a time, with an average of 2-3 weeks between backwash cycles. The flow rate of

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the backwash is between 16-20 l/s. For the nano filter, there is no backwash cycle, but rather a run to waste that produces 0.11 l/s of waste while the plant is in operation. The nano plant is expected to run 4-5 hours a day, while the slow sand filters run slower and are expected to run approximately 8.5 hours a day.

- No hazardous wastes will be produced
- No storage of gasoline or associated products
- No impact on heritage resources
- No socio-economic implications resulting from environmental impact
- No climate change implications expected

Mitigation Measures and Residual Environmental Effects

Environmental management practices:

- The technology of the system chosen for this project is based on high standards for quality of drinking water.
- No dangerous chemicals will be discharged into the environment.
- Minimal electricity usage due to the small size of the building components and efficient filtration system used.
- By discharging this non-hazardous waste back into the environment, it will help to not overload the existing community waste lagoon that the community uses, where the backwash water would otherwise be sent to.

Residual environmental effects:

- The project shows there are no identifiable residual environment effects associated with this project

Control Technology

- KGS has provided an engineered design of technology for treatment of the raw water. (See attached design report from KGS.)

Follow-up Plans

Regular monitoring of wastewater discharge will be performed to follow requirements for compliance.

Conclusion

This report has not identified any environmental issues that arise from the construction of a new water treatment plant in Crane River, MB.

The following are key notes of the new project:

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- Raw water will continue to be taken from the existing intake line from Crane River and the settling ponds outside of the WTP. No new wells or intake lines will be installed for the construction of this new water plant.
- The new water plant will tie into the existing town distribution line. There will be no alteration to the existing distribution lines themselves.
- The treatment process is mainly comprised of treatment with a slow sand filter, followed by nano filtration, followed by UV system and chlorination. It is then stored in 4 fiberglass storage tanks until required for community distribution.
- There are no construction activities associated with the project that have environmental issues
- There are no social, historical or other extraneous factors, which need to be considered in relation to this project.

The conclusion is that the project should receive approval under 'The Act'

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