

Chapter 12

Provision of Safe Drinking Water to Saskatchewan's Northern Settlements

1.0 MAIN POINTS

This audit identified problems with how the Ministry of Municipal Affairs (Ministry) provides drinking water to residents of Saskatchewan's northern settlements. We make a number of recommendations for the Ministry to improve its processes to provide safe drinking water.

Saskatchewan has many small to medium-sized communities that provide drinking water to their residents. These communities may find it useful to use the criteria and recommendations in this chapter to evaluate how they manage their drinking water.

Specifically, our audit found that the Ministry did not have effective processes to provide safe drinking water to the northern settlements for the period September 1, 2011 to March 31, 2012. To provide safe drinking water, the Ministry needs to:

- › Re-evaluate its overall processes and planning for providing safe drinking water
- › Ensure it carries out and reviews all required water quality testing
- › Ensure it operates water systems appropriately, including completing all required maintenance
- › Communicate about water quality and issues to residents and senior management
- › Take prompt action to address problems in providing safe drinking water

In addition, section 14(2) of *The Public Health Act, 1994* contains a legislative obligation for the Minister to ensure that there is a supply of safe water for the use of residents of northern settlements. The Ministry, in consultation with the Government, should decide if or when this provision should come into force.

2.0 INTRODUCTION

The Ministry provides residents of northern settlements with drinking water from various sources. Northern settlements are unincorporated communities in northern Saskatchewan that the Ministry of Municipal Affairs (Ministry) administers (see map in Exhibit 5.1).¹ The 11 northern settlements are located in the Northern Saskatchewan Administration District.² The Minister of Municipal Affairs functions as the municipal council for each of the northern settlements.³

¹ The Ministry administers the northern settlements through the Northern Municipal Services branch of the Ministry.

² The Northern Saskatchewan Administration District is a geographical area defined under *The Northern Municipalities Regulations*.

³ The Minister's responsibilities are set out in *The Northern Municipalities Act, 2010*.



The Ministry provides drinking water for some northern settlements from Ministry-owned and operated water systems. For other northern settlements, the Ministry has contracted with neighboring First Nations communities to provide water from their systems.⁴ See Figure 1 for more information on seven water systems in the northern settlements.

Section 14(2) of *The Public Health Act, 1994* (Act) contains a legislative obligation for the Minister to ensure that there is a supply of safe water for the use of residents of northern settlements. However, this provision has not come into force.⁵ Where the Ministry operates a water treatment plant or has entered into a contractual agreement with a third party for access to a supply of safe drinking water, the Ministry has assumed responsibility for ensuring the safety of the water supply, notwithstanding that section 14(2) of the Act has not come into force.

1. We recommend that the Ministry of Municipal Affairs, in consultation with the Government, consider if or when the provision in *The Public Health Act, 1994* should come into force that requires the Minister of Municipal Affairs to ensure that there is a supply of safe drinking water for the use of residents of northern settlements.

The Ministry completed water system assessments that studied drinking water needs across northern Saskatchewan. These assessments included 35 northern communities including the northern settlements. Based on this work, the Ministry chose to build and operate water systems at the northern settlements of Bear Creek, Brabant Lake, and Sled Lake. For the northern settlements of Missinipe and Uranium City, the Ministry became responsible for the water systems when these two communities reverted to northern settlement status. For the northern settlements of Stanley Mission and Wollaston Lake, the Ministry has contracted with neighboring First Nations communities to provide water from their systems.

Figure 1 – Description of Water Systems by Northern Settlement

Northern Settlement	Estimated Population ⁶	Type of Water Delivery System of Drinking Water to Residents ⁷
Ministry-owned Water Systems		
Bear Creek	55	The Ministry transports drinking water from its water treatment plant at Bear Creek to residents' homes.
Brabant Lake	65	Residents contract with a private company to transport drinking water from the Ministry's water treatment plant at Brabant Lake to residents' homes.
Missinipe	15	Ministry pipeline distribution from the Ministry's water treatment plant at Missinipe to residents' homes.
Sled Lake	40	Ministry pipeline distribution from the Ministry's water treatment plant at Sled Lake to residents' homes.
Uranium City	85	Ministry pipeline distribution from the Ministry's water treatment plant at Uranium City to residents' homes.

⁴ The Federal Government has jurisdiction over drinking water systems for on-reserve First Nations communities.

⁵ The provision is to come into force on a date prescribed by regulation. There is no regulation setting the date.

⁶ Estimated information provided by the Ministry of Municipal Affairs as at August 31, 2011.

⁷ The legislation and regulations refer to water systems as waterworks.

Northern Settlement	Estimated Population ⁶	Type of Water Delivery System of Drinking Water to Residents ⁷
Ministry Contracts With First Nations Communities That Own Water Systems		
Stanley Mission	125	First Nations community pipeline distribution from that community's water treatment plant to off-reserve northern settlement residents' homes.
Wollaston Lake	25	First Nations community pipeline distribution from that community's water treatment plant to off-reserve northern settlement residents' homes.

The Ministry provides drinking water to the northern settlements of Camsell Portage, Descharme Lake, Garson Lake, and Southend by means other than water systems. For example, the Ministry provides residents of the Northern Settlement of Descharme Lake with commercially-bottled water.

At August 31, 2011, the estimated permanent population of the seven northern settlements that the Ministry provides drinking water to through water systems was about 410 residents. At December 31, 2011, the water and sewer infrastructure used in northern settlements had a total cost of \$9.1 million and a net book value of \$3.4 million.⁸

The Ministry of Environment (Environment) sets provincial water quality standards. Environment issues permits to operate water systems to municipalities; this includes issuing permits to the Minister of Municipal Affairs for the northern settlements. See Exhibit 5.2 for more information on responsibilities for water in Saskatchewan.

Access to clean and safe drinking water is essential for public health and well-being. The quality of drinking water and the condition of the systems that produce it are important public health and environmental issues in Saskatchewan.⁹

Contaminated water can endanger public health, causing illness and death. Canada, and Saskatchewan have seen dramatic examples of the consequences of unsafe drinking water. For example, in North Battleford in April 2001, a parasite in the community's water caused between 6,000 to 7,000 residents to become ill.

3.0 AUDIT OBJECTIVE, CRITERIA, AND CONCLUSION

The objective of this audit was to assess if the Ministry of Municipal Affairs had effective processes to provide safe drinking water to northern settlements in the Northern Saskatchewan Administration District for the period September 1, 2011 to March 31, 2012. This includes five northern settlements where the Ministry provides drinking water from Ministry-owned and operated water systems and two northern settlements where the Ministry has contracted with neighboring First Nations communities to provide water from their systems.

The Ministry does not operate water systems or contract with First Nations communities to provide safe drinking water for the four other northern settlements of Camsell

⁸ The Northern Municipal Trust Account provides administration of funds and property held by the Minister for the Northern Saskatchewan Administration District.

⁹ Ministry of Environment *State of Drinking Water Quality in Saskatchewan Annual Report 2010-11*, p. 1.



Portage, Desharme Lake, Garson Lake and South End. These northern settlements were not included in our audit. Northern Towns, Northern Villages, and Northern Hamlets were not included in this audit because the elected council of each of these municipal bodies is responsible for the safety of water provided to residents. Also, sewage treatment/disposal was not included in this audit.

To conduct this audit, we followed the *Standards for Assurance Engagements* published in the *CICA Handbook – Assurance*. Our approach to the audit included documenting our understanding of the Ministry’s processes, interviewing key staff, reviewing policies, manuals and other guidance, and testing key aspects of its processes including visiting its central location for managing its water systems.

To evaluate the Ministry’s processes, we used criteria (see Figure 2) based on our previous work, the work of other auditors and current literature listed in the selected references. The Ministry’s management agreed with the criteria.

Figure 2—Audit Criteria for Providing Safe Drinking Water to Northern Settlements

To provide safe drinking water to Northern Settlements, the Ministry should:
1. Have processes to provide safe drinking water
1.1 Implement safe drinking water supply processes
1.2 Define performance measures and targets
2. Treat and/or provide safe drinking water
2.1 Establish and maintain infrastructure
2.2 Operate water systems to meet standards
2.3 Contract with a third party for access to safe drinking water
3. Monitor drinking water
3.1 Test drinking water quality
3.2 Communicate results of water quality testing (e.g., if standards are not met)
3.3 Evaluate performance of water supply processes
3.4 Take corrective action as required

We concluded that the Ministry of Municipal Affairs did not have effective processes to provide safe drinking water to seven northern settlements (Bear Creek, Brabant Lake, Missinipe, Sled Lake, Uranium City, Stanley Mission and Wollaston Lake) in the Northern Saskatchewan Administration District for the period September 1, 2011 to March 31, 2012.

Safe drinking water is vital for health and well-being. Ineffective processes to provide safe drinking water to northern settlements increases the risk of endangering public health in these areas.

4.0 AUDIT FINDINGS AND RECOMMENDATIONS

Below we set out our findings and recommendations related to the criteria. Our expectations are set out in italics under each subheading.

4.1 Longer-term Outlook Needed for Providing Drinking Water to Northern Settlements

We expected the Ministry to have processes to provide drinking water that meets standards. We expected the Ministry would:

- › *Implement safe drinking water supply processes (based, for example, on risk and needs analysis, and reflecting maintenance and testing policies)*
- › *Define performance measures and targets*

4.1.1 Actions Needed to Analyze Waterworks Assessments and Implement Policy

The Ministry's practice is to complete an assessment of its water systems for each northern settlement every five years. In 2000, the Ministry hired an engineering firm and assessed the drinking water and sewage needs for communities including northern settlements in northern Saskatchewan.¹⁰ The study considered risks to communities' drinking water. The study also assessed the condition of existing water systems and considered the needs of communities that did not have water systems. The study considered then current and projected populations and what methods of water delivery were viable. The 2000 study led to Waterworks System Assessment (WSA) reports for each community. The WSA reports were completed by engineering firms. Based on this work, the Ministry chose to build and operate water systems in the northern settlements of Bear Creek, Brabant Lake, and Sled Lake.

The WSA reports for the northern settlements were repeated in 2005 and 2010 and in general terms reported the performance, functionality, capability, efficiency and sustainability of the water and sewage systems. At the time of our audit the Ministry has yet to complete its analysis of the 2010 WSAs for the northern settlements. The Ministry has also not made these reports generally accessible to the public.

2. We recommend that the Ministry of Municipal Affairs complete its analysis of the 2010 Waterworks System Assessment reports for northern settlements and communicate how it intends to address recommendations made in these reports.

The Ministry has an emergency plan for every northern settlement. For the northern settlements where the Ministry owns and operates the water systems, the emergency plans consider responses to events that could arise and cause disruptions to service.

Annually, the Ministry completes a risk assessment. The 2011-12 risk assessment indicated that there is a significant infrastructure deficit in the north. This infrastructure deficit includes water systems.

The Ministry obtains permits from Environment for the water systems the Ministry owns and operates. The Ministry also must obtain permits for the systems that distribute drinking water from First Nations communities to northern settlements. The permits include specific requirements to meet *The Water Regulations, 2002*. The permits require the Ministry to have "a written quality assurance and quality control policy." The policy is to cover, at a high level, topics such as equipment, operational procedures, chemical use, and anything else that could affect water quality. The Ministry approved quality assurance and quality control policies to meet these requirements in 2004. We did not

¹⁰ *Northern Water and Sewer Infrastructure Study Steering Committee Final Report March 2000.*



find evidence that these policies were routinely used to guide the Ministry's provision of drinking water.

Unless the Ministry follows its policies, there is an increased risk that operations, including testing and maintenance, will not take place to meet requirements and protect public health. This report identifies where such deficiencies exist and makes recommendations for improvement.

4.1.2 Require Longer-term Objectives for Provision of Drinking Water to Northern Settlements

The drinking water that the Ministry provides must meet provincial water quality standards as reflected in the permits and *The Water Regulations, 2002*. This requires the Ministry to measure the quality of water on a daily, weekly, and monthly basis.

The Ministry provides drinking water to these communities, but it has not determined what it hopes to achieve for these communities for the long term. We recommend above that the Ministry complete its analysis of the 2010 Waterworks System Assessment reports. In carrying out its analysis, the Ministry should ensure it documents its decisions and approach on topics such as desired service life for its water systems, life cycle costing, and the maintenance necessary to obtain desired service life. Unless the Ministry considers and plans for the long term, it may not be able to provide safe drinking water on a sustained basis.

3. We recommend that the Ministry of Municipal Affairs define its approach for the long term to provide safe drinking water.

The Ministry told us it has contracted with a consulting company to develop an asset inventory for northern Saskatchewan. The Ministry also told us that this information will be used to create a water and sewer asset management plan for northern settlements.

4.2 Improvements to Central Supervision of Drinking Water Required

We expected the Ministry to have processes to treat and/or provide safe drinking water. We expected the Ministry would:

- › *Establish and maintain infrastructure (i.e., by obtaining and maintaining permits, setting maintenance procedures, monitoring the condition of infrastructure)*
- › *Operate water systems to meet standards (i.e., providing guidance for operations, ensuring certified operators carry out the work)*
- › *Where the Ministry contracts with a third party for access to safe drinking water, have appropriate contracts in place and processes to ensure contracts were being met*

4.2.1 Required Maintenance Not Completely Performed

For each of the northern settlements in which the Ministry owns and operates a water system, the Ministry had up-to-date permits from Environment. The permits set out requirements for operating and maintaining the water systems, for sampling and maintaining water quality, for record keeping, and for reporting (including reporting to consumers). The permits include a supervision requirement, specifying that the Ministry review water system records, including maintenance records, every month.

The Ministry has established maintenance procedures for the water systems it owns and operates in the northern settlements. It receives information on the state of the water systems through reports that it obtains twice per year from an infrastructure management consulting company (consultant). The consultant's reports contain information on the condition of the water systems. The consultant makes recommendations for repair, record keeping, etc. While on-site, the consultant provides training to the water system operators. As well, the Ministry receives updates from the consultant regarding maintenance activities carried out by the water system operators. The Ministry is also able to review reports from inspections carried out approximately once per year by Environment. We did not find evidence of the Ministry analyzing this information to make decisions about its drinking water systems.

The Ministry's maintenance procedures require that the operators of the water systems carry out specific processes on a daily, weekly, monthly, three-month, six-month, annual, three-year, three to five-year, and five-year basis. For example, operators are to check pumps for vibration on a daily basis and operate pressure relief valves monthly. The Ministry has developed a maintenance log for its water systems at northern settlements. The Ministry expects the maintenance to be completed as indicated in the log and that the log should record who completed the maintenance activity and when the activity was completed.

The Ministry did not supervise maintenance as often as the permits require. Ministry employees told us that when they visit the locations where the water systems are located they review records (e.g., logs). However, we saw no documented evidence that the Ministry reviewed maintenance records on a monthly basis. We also found where maintenance logs were incomplete. For example, for Uranium City, logs did not document that all required maintenance was occurring.

Inadequate supervision of required maintenance increases the risk that all required maintenance work will not be completed. Maintenance is required to keep water systems working effectively, which reduces the risk of providing unsafe water to northern settlements.

4. We recommend that the Ministry of Municipal Affairs consistently carry out all required maintenance for its water systems.



- 5. We recommend that the Ministry of Municipal Affairs document its monthly supervision of maintenance carried out on its water systems to evidence that all required maintenance is occurring.**

4.2.2 Need to Operate Water Systems to Meet Standards

The Ministry has processes to track certification of operators.¹¹ The Ministry told us that it is a challenge to have all operators and backup operators with appropriate certification. We found primary operators were certified, however, many backup operators did not have adequate certification. We saw evidence of the Ministry working to try to ensure that all operators obtained and maintained appropriate certifications.

The Ministry has processes to deal with situations where operators are sick or absent. For example, the Ministry assigns other operators to fill in or it temporarily contracts personnel from the infrastructure management consulting company.

The Ministry has manuals and templates for recording maintenance activities and operating results. However, as noted previously, the Ministry has not been carrying out all required maintenance, including documenting its monthly supervision of maintenance.

4.2.3 Ministry Did Not Receive Water Quality Results for Northern Settlement of Wollaston Lake

In addition to the water systems that it owns and operates, the Ministry has contracted with two First Nations communities to provide safe drinking water to two northern settlements. The contracts specify that the water must meet Saskatchewan drinking water standards. The contracts oblige the First Nations communities to carry out specific quality monitoring and communications. The contracts do not provide for the Ministry to get the water quality testing results. The Ministry obtains water test results for one of the northern settlements (Stanley Mission) because the First Nation community uses the Ministry of Health's Disease Control Laboratory (Provincial Lab). The Ministry does not obtain test results for the other northern settlement (Wollaston Lake). This matter is discussed further in the next section.

The contracts should specify that the First Nations communities that provide drinking water should provide regular water quality test results to the Ministry. The Ministry requires water quality test results to monitor the safety of the drinking water and adequately communicate this information to northern settlement residents.

¹¹ Operators must meet criteria found in the Saskatchewan Water & Wastewater Works Operator Certification Standards. Education, examination, and certification qualifications are required for all water systems operators.

6. We recommend that the Ministry of Municipal Affairs, where it has contracted for the supply of drinking water from a First Nations community, specify in its contract that the First Nation community provide water quality test results to the Ministry on a timely basis.

The Ministry has hired the same infrastructure management consultant to provide a similar service to the First Nations communities that provide drinking water to the northern settlements. The consultant reports to the Ministry twice per year on the conditions of water systems and training the consultant provided. For the Northern Settlement of Wollaston Lake, the consultant reported that water testing for the Ministry did not occur after July 2011 and that test results at July 2011 were not adequate for chlorine levels. Since that time, the Ministry does not know if chlorine levels are sufficient. Without adequate chlorine levels, public health is at risk. We make a recommendation for this matter further on.

4.3 Need to Monitor Drinking Water and Act on Results

We expected the Ministry to monitor drinking water. We expected the Ministry to:

- › *Test drinking water quality in accordance with its permit*
- › *Communicate the results of water quality testing to the Ministry of Environment and water consumers in accordance with the permit*
- › *Periodically evaluate the performance of its water supply processes*
- › *Take corrective action when water systems or water quality is at risk*

4.3.1 Drinking Water Testing Not Complete

As discussed above, the Ministry obtains permits to operate water systems from Environment. These permits require water to be tested periodically for different water attributes.¹²

For the water systems it owns and operates, the Ministry has developed water system sampling/testing logs for operators to use as guidance. The logs require periodic (e.g., daily, weekly, monthly) samples to be collected. Operators at the water systems, as allowed by permit, may test for chlorine and turbidity (cloudiness). Other samples are mailed for analysis to the Provincial Lab or to the Saskatchewan Research Council in Saskatoon. These labs complete the tests and provide written results to the operators, to the Ministry, and to Environment.

In relation to the water systems that it owns and operates, the Ministry did not collect all required samples for required bacteriological testing for Uranium City. The Ministry's permit to operate water systems at Uranium City required bacteriological tests to be completed twice per week, or 104 samples in 2011, however, only 90 samples were

¹² For example, water test requirements may include testing water daily for chlorine levels, weekly for bacteria, quarterly for trihalomethanes, and every other year for various chemicals and contaminants.



completed. The Ministry told us that all required bacteriological tests did not occur because of transportation issues caused by bad weather. Also, the Ministry does not know if all tests were completed as required for Bear Creek and Sled Lake, because the Ministry did not receive timely monthly water test logs from the water system operators in these communities. In general, water test results we reviewed for Ministry-operated water systems showed that water quality met the provincial standards for chlorine, contaminants, etc. except that the Northern Settlement of Missinipe consistently had trihalomethane levels above the standard (trihalomethanes are a chemical with identified health risks; see www.health.gov.sk.ca/water-quality-parameters-trihalomethanes).

As noted previously, the Ministry also has permits for distribution of water from the First Nations communities. These permits similarly oblige the Ministry to carry out testing. The Ministry has not carried out this testing for Wollaston Lake.

Completing all tests as required by permits is necessary for adequate monitoring of the safety of drinking water. Without adequate monitoring, residents of northern settlements may be at risk.

- 7. We recommend that the Ministry of Municipal Affairs test drinking water samples and document the results as required by its water system permits issued by the Ministry of Environment.**

4.3.2 Poor Communication About Water Quality

Communicating the results of water quality testing to residents is an important process to promote transparency. The Ministry is required by the water system permits to annually provide residents with a written report of the quality of water (i.e., a summary of actual water attributes from lab results compared to the regulations). This report also has to detail the Ministry's compliance with collecting and submitting for analysis water samples as required by permits. We confirmed that the Ministry issues these annual reports for the northern settlements where it owns and operates water systems. We note that the Ministry has not communicated information about drinking water safety, in writing, to residents of northern settlements where the Ministry contracts for drinking water from First Nations communities. As we describe below, testing and water quality issues exist.

- 8. We recommend that the Ministry of Municipal Affairs implement a formal process for communicating in writing about the safety of drinking water to residents of the Northern Settlements of Stanley Mission and Wollaston Lake, as required by its water system permits issued by the Ministry of Environment.**

The Ministry does not have a formal process regarding how and when the results of water tests and issues with water systems, such as maintenance, are reported to Ministry senior management. The Ministry told us senior management is verbally informed of issues that impact the provision of drinking water in northern settlements.

The lack of a formal reporting process could contribute to senior management not having all of the required information it needs to make informed decisions.

- 9. We recommend that the Ministry of Municipal Affairs formally report to its senior management the results of water tests and issues with water systems.**

4.3.3 Need to Re-evaluate Existing Water Supply Processes

As noted previously, the Ministry receives information on its water supply processes. For example, it receives waterworks system assessments every five years, and consultant's reports twice per year. However, also as noted above, the Ministry has not completed its analysis of this information.

In order to address the problems with drinking water that we discuss in this report, the Ministry must re-evaluate its water supply processes including analysis of the issues. We make a number of recommendations in this regard in the report. The Ministry also needs to determine what corrective actions are required (see next section).

4.3.4 Need to Take Corrective Action

The Ministry faces particular challenges at certain northern settlements. We noted previously the issues faced by the Northern Settlement of Missinipe with trihalomethane levels.

The Ministry inherited a very dated water system in Uranium City that it continues to operate. The system was built for a much larger population. This means it is expensive to maintain and operate. A precautionary drinking water advisory has been in place for Uranium City since 2001. The Ministry has been working with the residents of the northern settlement, for example through the Local Advisory Council, to consider possible actions. Figure 3 describes water advisories and orders.

As previously noted, the Ministry's contracts with two First Nations communities supplying drinking water to northern settlements are not adequate. These contracts do not require the First Nations communities to provide the Ministry with water quality test results. The First Nation community providing water to the Northern Settlement of Stanley Mission uses the Provincial Lab for water testing and the Ministry can access the results through Environment. Stanley Mission is experiencing issues in limiting trihalomethane levels.

The First Nations community that supplies drinking water to the Northern Settlement of Wollaston Lake does not provide water quality test results to the Ministry. The Ministry was completing its own water quality tests for this northern settlement. However, the Ministry's testing facility was destroyed and since July 2011, the Ministry has neither received water quality test results from the First Nations community nor carried out its own tests. Further, results at July 2011 were not satisfactory for meeting required chlorine levels. Yet, the Ministry continues to provide this water as drinking water for the residents.



Unless the Ministry takes corrective action to resolve these drinking water issues, residents' health remains at risk.

10. We recommend that the Ministry of Municipal Affairs take prompt action to address problems in providing safe drinking water to northern settlements.

Figure 3—Description of Water Advisories and Orders

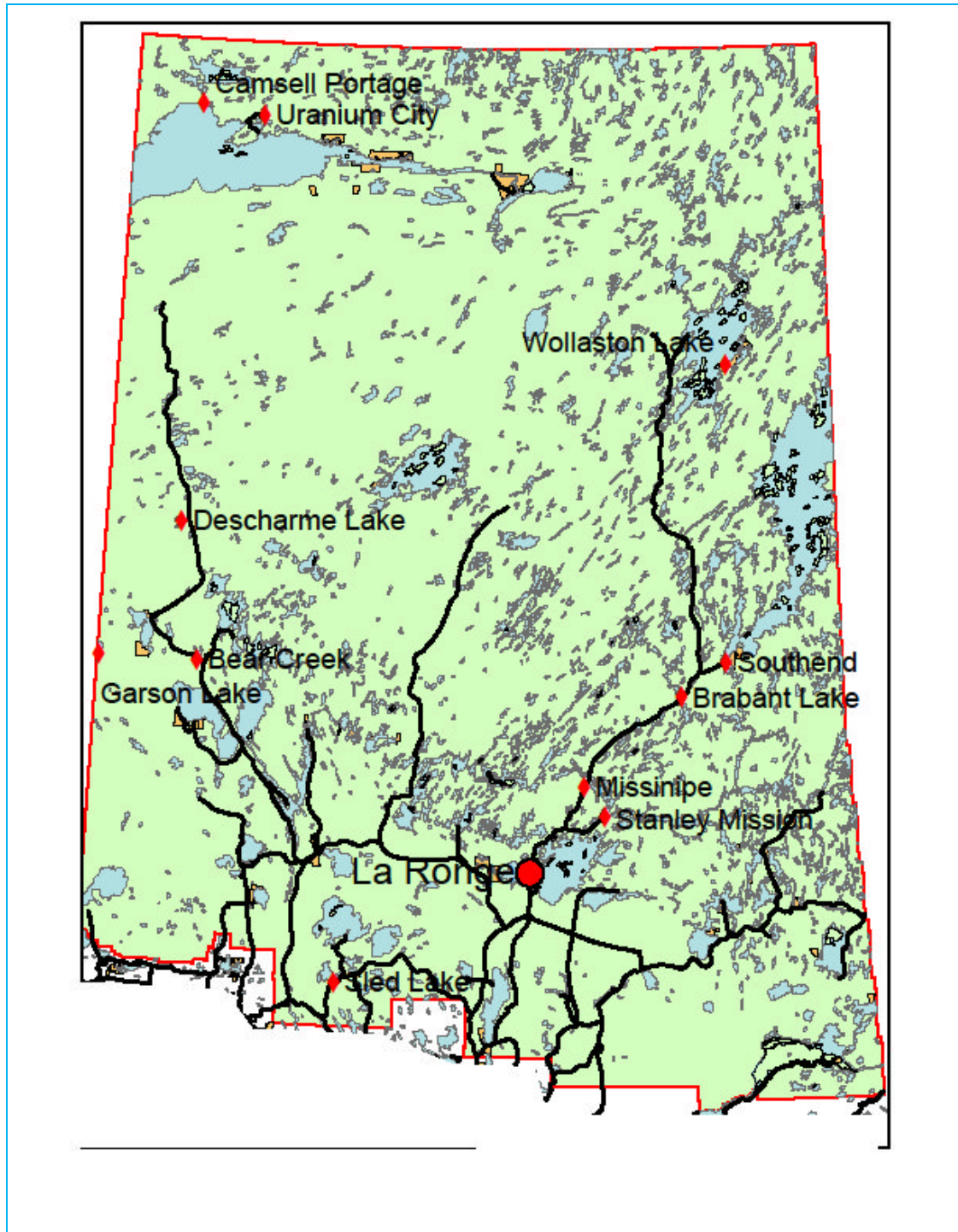
Emergency boil water orders are issued by regional health authorities when a threat to public health (i.e., microbial contamination) has been confirmed. Precautionary drinking water advisories are issued by the Ministry of Environment where drinking water quality problems may exist but an immediate public health threat has not been identified. It should be noted that under a precautionary drinking water advisory, water must still be boiled before it is used for drinking purposes or used for other activities where it could be consumed, such as brushing teeth, dishwashing, or washing fruits and vegetables.

A listing of these orders and advisories is on the SaskH2O website at <http://www.saskh2o.ca/advisories.asp>. At April 16, 2012, there were no issued emergency boil water orders relating to the northern settlements. There was one precautionary drinking water advisory in effect (since 2001) for the Northern Settlement of Uranium City.

Sources: see <http://www.saskh2o.ca/advisories.asp> and orders and advisories.

5.0 EXHIBITS

5.1 Map of the Northern Saskatchewan Administration District including Northern Settlements





5.2 Other Provincial Government Agencies Involved with Drinking Water

Ministry of Environment

The Ministry of Environment (Environment) sets provincial water quality standards in *The Environmental Management and Protection Act, 2002* and *The Water Regulations, 2002*. Environment issues permits to municipalities, including NSAD, to operate water systems. This includes reservoirs, tanks, buildings, pumps and pipes. Environment is responsible to periodically inspect and enforce compliance with those permits.

Environment is the principal regulator of municipal water systems. Environment does not regulate non-public water systems. Nor is Environment responsible for drinking water on First Nations reserves.

Saskatchewan Watershed Authority

The Saskatchewan Watershed Authority is responsible for allocating water inventory, analyzing water sources (quantity and quality), regulating and controlling the flow of water (i.e. lakes, rivers), and establishing and enforcing best practices to protect and restore water sources. Saskatchewan Watershed Authority is tasked with balancing competing water and land uses that impact water quality.

Saskatchewan Water Corporation

Saskatchewan Water Corporation (SaskWater) owns and operates certain regional water systems throughout the province. It also provides system assessments and project management of water infrastructure projects.

Ministry of Health

The Ministry of Health and regional health authorities regulate certain non-municipal water systems with limited capacity that service locations such as tourist accommodations and campgrounds.

Ministry of Agriculture

The Ministry of Agriculture is responsible for the protection of surface and groundwater with respect to intensive livestock operations. The Ministry is also responsible for irrigation-related services.

Sources: see <http://www.saskh2o.ca/RolesAndResponsibilities.asp> and selected references. (accessed April 24, 2012)

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