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2015 Drinking Water Quality and Compliance Report

August 3, 2016

Introduction

Saskatchewan Environment (SE) requires that at least once each year waterworks owners provide notification to consumers of the quality of water produced and supplied as well as information on the performance of the waterworks in submitting samples as required by a Minister's Order or Permit to Operate a Waterworks. The following is a summary of the Town of Eston water quality and sample submission compliance record for 2015. Readers should refer to SE's "Municipal Drinking Water Quality Monitoring Guidelines, November 2002, EPB 202" for more information on minimum sample submission requirements and the meaning of specific sample types. Permit requirements for a specific waterworks may require more sampling than outlined in the department's monitoring guidelines.

Water Quality Standards

Bacteriological Quality

Parameter/Location	Limit	Samples Required	Samples Submitted	Submitted (%)
Total Coliform and Background Bacteria	0 Organisms/100 mL Less than 200/100 mL	52	56	100%

Water Disinfection

Chlorine residual in distribution system for test results submitted with bacteriological samples

Parameter	Minimum Limit	Total Chlorine Residual Range	Free Chlorine Residual Range	# Tests Required	# Tests Submitted	# Adequate Chlorine (%)
Chlorine Residual	0.1 mg/L free or 0.5 mg/L total	0.53 - 1.05	0.19 – 1.01	52	56	100%

Free Chlorine Residual for Water Entering Distribution System from Waterworks Records-From Water Treatment Plant Records

Parameter	Limit (mg/L)	Test Level Range	# Tests Performed	# Tests Not Meeting Requirements
Free Chlorine Residual	At least 0.1	0.12 – 1.10	774	0

A minimum of 0.1 milligrams per litre (mg/L) free chlorine residual is required for water entering the distribution system. Tests are normally performed on a daily basis by the waterworks operator and are to be recorded in operation records. This data includes the number of free chlorine residual tests performed, the overall range of free chlorine residual (highest and lowest recorded values) and the number of tests and percentage of results not meeting the minimum requirement of 0.1 mg/L free chlorine residual.

Turbidity – From Water Treatment Plant Records

Parameter	Limit (NTU)	Test Level Range	# Tests Not Meeting Requirements	Maximum Turbidity (NTU)	# Tests Required	# Tests Performed
Turbidity	1.00	0.12 - 0.44	0	0.44	365	801

From October 16 to 22, 2015 the Town of Eston was placed under a Precautionary Drinking Water Advisory after the poly aluminum chloride pump clogged and seized. This caused turbidity to surpass 0.30 NTU. The pump was replaced and the problem was rectified.

Chemical – Trihalomethanes (THMs)

Parameter	THMs Limit (ug/L)	Sample Result (average)	# Samples Required	# Samples Submitted
Trihalomethanes	100	71.4	4	4
Halic Acid			4	4

All waterworks serving less than 5,000 persons are required to submit water samples for SE's General Chemical category once every two years if a ground water source and once per three months every second year if a surface water or blended surface/groundwater source. The General Chemical category includes analysis for alkalinity, bicarbonate, calcium, carbonate, chloride, conductivity, hardness (as $CaCO_3$), magnesium, sodium, sulphate and total dissolved solids.

Four general chemical tests were submitted in 2015. Sample results indicated that there were no tests exceeding the provincial aesthetic objectives for the General Chemical category.

Water Rates

Sewer and water charges are billed quarterly. All services have a flat rate charged regardless of whether or not any water is used. The residential rates for 2015 were:

Flat rate for water	$8.00 per month or $24.00 per billing period
Flat rate for sewer	$11.00 per month or $33.00 per billing period (residential)
	$26.00 per month (commercial)
	$11.00 per month plus $3.00 per unit/room (multi-unit)
Water Consumption	$8.00 per 1,000 gallons

All treated water used was billed as consumption at a charge of $8.00 per 1,000 gallons. Bulk loading of water was charged at $5.50 per cubic metre to resource companies. Water rates will be reviewed on an ongoing basis. However, no increase is anticipated. In addition, the utility bill contains a charge for environmental services. This payment covers operation of the landfill, garbage collection and recycling operations. In 2015 this rate for residential was increased from $20.00 to $25.00 per month.

Waterworks Policy

The Town of Eston policy is that the revenues from the water and sewer services must as a minimum meet the operating costs for the services, including interest and capital repayment. Any operating surplus that exceeds the operating and amortization costs combined is placed into reserve for future capital projects. The long range target is to provide for future infrastructure requirements by ensuring that the rates cover the amortization costs and that an amount equal to the amortization is placed into reserves to minimize long term debt.

Financial Overview December 31, 2015

The provision of water and sewer services are considered a "stand alone" service and rates are set to estimate a slight surplus each year. In 2015 there was a $101,238 surplus before amortization expense which was $44,980. The remaining surplus was moved to utility reserves. The surplus resulted from deferral of capital projects.

The 2016 budget forecasts a $45,682 surplus before amortization which would then bring the department to approximately breakeven. There is a $90,000 transfer from reserves scheduled to complete several capital projects. Resource revenues are estimated remain comparable to 2015 due to continued low oil prices. The Town is maintaining an asset management plan that will continue to build reserves for future capital expenditures.

2015 Financial Summary

Revenues	$469,629 R
Expenditures	$368,391 E
Operating Surplus	$101,328
Loan Principal	$47,668 D
Amortization	$44,980 A
Ratio R/(E+D)	1.13
Ratio R/(E+D+A)	1.02

Long Term Debt

- 2010 CMHC Loan – EK Pipeline Upgrades, $400,000 borrowed, $34,952 annual to 2025
- 2014 Long Term Debt – Sewer Force Main, $300,000 was borrowed for sewage force main to 2024

Reserves

December 31, 2015 = $154,199
$50,000 was added to reserves at year end from remaining utility surplus.

Capital Improvements

AECOM completed the five year Waterworks System Assessment Round 3 Report which provided a series of recommendations for system improvements and future capital upgrades. This information will be used to develop a future capital plan.

Replacement of old hydrants and valves has been ongoing for the past several years. It is anticipated that by 2020 all hydrants and valves will have been replaced.

As part of the future plans, additional land is being sought for potential well expansion at South Saskatchewan River.

The R.M. of Snipe Lake #259 has plans for a rural water line that would obtain the treated water from the Town of Eston. The project is contingent on grants to assist with the cost and has no scheduled date. AECOM is completing a report to assess the feasibility of expanding the EK system to serve rural partners.

In 2015 several capital projects are scheduled including servicing of water and sewer lines to new lots on 2nd Avenue SW, a new EK pump and butterfly valve, a new EK shield well, hydrant and valve repairs, and replacement of the 8th avenue sewer main.

Long Term Challenges

The water supply pipeline from the river to Snipe Lake is over 40 years old. Any repair work that has been done has indicated that the condition of the pipeline, steel lined with concrete, is excellent. Regardless of current condition there is some potential for future failures. The new line for the first 10 km from the river will replace the portion of the line that has had the highest operating pressures and should be the most prone to failure.

As a result of the new pump house at Snipe Lake, the capability to pump direct from Snipe Lake to the water treatment plant exists in the current system but there may be control upgrades that are estimated to cost $120,000 to $150,000 for the water treatment plant to automate these controls. This would improve the raw water quality, lowering treatment costs and increasing the capacity of the plant. The raw water reservoirs at Eston will continue to be used as a reserve and back up supply for emergencies.

A shield well at the river was replaced in 2012 and in 2016 an additional shield well is scheduled for installation. The wells at the South Saskatchewan River were serviced in 2013. Successful servicing should continue to provide adequate water for the upgraded pipeline capacity. As part of the well replacement in 2012 there was exploration to determine the best location for future expansion by test drilling east and west of the existing site. The most suitable site is to the east and negotiations have begun to acquire property for future well expansion.

The pipeline from the Snipe Lake Reservoir into Eston is concrete. No concerns exist about its current condition but occasional repairs will likely be required.

Resource companies have been obtaining water from the Town of Eston for use in well fracturing. Arrangements were made to develop a designated location. Profit exceeding $100,000 annually is possible.

Cleaning of the treated water reservoir took place in 2012. The water tower was examined and cleaning and painting was completed in 2014.