

MEMORANDUM

TO: Charter Municipalities
FROM: Greg Louder, Municipal Review Committee, Inc.
RE: Environmental Performance of the PERC Facility
DATE: 31 October 2016

Executive Summary

In August 2016, an independent third-party testing firm performed the annual test of air emissions from the exhaust stack of the PERC. All emissions tested were demonstrated to comply with the limits in PERC’s air emissions license from the Maine Department of Environmental Protection (Maine DEP). An important part of the MRC’s mission is to ensure that waste disposal by its membership is environmentally sound. This memorandum presents the summary results of the stack emissions tests as part of the MRC’s efforts to fulfill its mission by providing information to enable the Charter Municipalities to understand the environmental performance of the PERC facility, and by presenting accurate information to those with interest in the PERC facility’s record.

Air Emission Test Results

Every year PERC conducts tests to assess whether the facility complies with the emissions limits and operating conditions that are specified in its air emissions license from the Maine DEP. The tests are intended to ensure that the level of various constituents emitted by the PERC facility avoid significant impacts on public health and the environment. Some constituents are measured around the clock using devices known as continuous emissions monitoring systems, or CEMS. For other constituents, PERC hires an independent third-party testing firm to conduct special tests known as “stack tests” to measure what is being emitted. Tests are conducted for the following:

<i>Type</i>	<i>Measured constituent</i>
Acid gases	Hydrogen chloride (HCl)
Particulate matter	Total particulates, opacity
Trace metals	Arsenic, beryllium, cadmium, chromium, lead, mercury, nickel
Trace organics	Dioxins and furans

The most recent stack tests were conducted on August 9-11, 2016. To ensure objectivity, the tests are conducted by an independent contractor in accordance with strict protocols and standards, and the conduct of the tests can be witnessed by representatives of the Maine DEP.

All involved have reason to be proud of the results of these tests. As presented in Exhibit A, not only did the PERC facility comply with all of the standards in its air emissions license, but it performed significantly better than the license requirements – often by a wide margin. Specific results can be summarized as follows:

- Emissions of total particulates were at 15.1 percent of the permitted level.

- Emissions of all trace metals were very low. Emissions of cadmium, chromium, lead, mercury and nickel were at small fractions of the permitted levels. Emissions of arsenic and beryllium were too low to be detected during the test.
- Emissions of dioxins and furans were very low. In fact, emissions of dioxins and furans together were at 1.7 percent of the permitted level.
- Emissions of HCl (a contributor to acid rain), which are controlled by the facility's dry scrubbers, were at only 24.1 percent of the permitted level.

Exhibit A. Summary Results of Air Emissions Testing at the PERC Facility in 2016

<i>Constituent</i>	<i>Allowable limit</i>	<i>Average of test results</i>	<i>Test result value as percent of allowable limit</i>
Dioxins/furans	25 ng/dscm @ 7% O ₂	0.43 ng/dscm @ 7% O ₂	1.7% of limit
Particulate matter	22.9 mg/dscm @ 7% O ₂	3.45 mg/dscm @ 7% O ₂	15.1% of limit
Trace metals			
• Arsenic	• No limit in permit	• <0.00007 mg/dscm @ 7% O ₂	No permit limit
• Beryllium	• No limit in permit	• < 0.00006 mg/dscm @ 7% O ₂	No permit limit
• Cadmium	• 0.03500 mg/dscm @ 7% O ₂	• <0.00005 mg/dscm @ 7% O ₂	0.1%.of limit
• Chromium	• No limit in permit	• 0.0138 mg/dscm @ 7% O ₂	No permit limit
• Lead	• 0.400 mg/dscm @ 7% O ₂	• 0.0014 mg/dscm @ 7% O ₂	0.4% of limit
• Mercury	• 0.0280 mg/dscm @ 7% O ₂	• 0.0004 mg/dscm @ 7% O ₂	1.4% of limit
• Nickel	• No limit in permit	• 0.014 mg/dscm @ 7% O ₂	No permit limit
Hydrogen chloride (HCl)	29 ppm @ 7% O ₂	7.00 ppm @ 7% O ₂	24.1% of limit
Opacity	• <10.0% Unit A • <10.0% Unit B	• 0.7 on Unit A • 1.3 on Unit B	of limit of limit

Abbreviations

- ppm_{dv} = parts per million dry volume
- mg/dscm = milligrams per dry standard cubic meter
- ng/dscm = nanograms per dry standard cubic meter

Values with < (a "less than" sign) are the detection limits, which are provided for tests when the identified constituent was not detected. In such cases, emission of such identified constituent was below the lowest value that could be detected by test equipment used during the test (the detection limit) for some test runs. Values are adjusted to 7% oxygen concentration to correct for dilution by excess combustion air.