

MUNICIPALITY OF COLCHESTER COUNTY
SEWER BYLAW COMMITTEE

Joan Baxter, Deb Plestid, David Baxter, August Coombs, Hanna
Hunziker, Chuck Hunziker, Meghan MacCulloch
and Janet Maybee,

Appellants,

SUPPLEMENTAL STATEMENT OF APPEAL

Prepared by:

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INTRODUCTION

Appellants offer this supplemental statement of appeal based on a review of the Record. Capitalized words and terms used in this supplemental statement, have the meanings given to them in the Appellants' statement of appeal.

OBSERVATIONS FROM RECORD

General Observations

The Record appears to reflect that:

1. Assumptions of fact made in the Appellant's statement of appeal are justified
2. There has been no independent sampling of any AIS Wastewater. Appellant's lawyer has been involved in numerous real property transactions involving contaminated property. In each of these instances, the water samples were obtained by independent qualified environmental professionals and reports summarizing their work including the selection of samples, collection containers, methods of collection, handling of collected samples and the resulting laboratory results are included.
3. Except for a consultant's recommendations for AIS addressing the radioactive materials in the AIS Wastewater, the Record reflects no examination of the water quality issues by any individual who has the qualifications and experience to adequately pass upon the information provided and the information which still needs to be provided. The County should have required and considered the evaluations and recommendations of such experts.
4. There is no evidence that prior to the delivery to the applicable laboratory for testing, the water samples tested were gathered, collected, maintained or handled in accordance with, or delivered to the laboratory for testing within the time frame permitted by, any of the established generally accepted protocols. See for example the EPA approved methods for inorganics, radionuclides and organics: http://water.epa.gov/scitech/drinkingwater/labcert/upload/methods_inorganic.pdf
http://water.epa.gov/scitech/drinkingwater/labcert/upload/methods_radionuclides.pdf
http://water.epa.gov/scitech/drinkingwater/labcert/upload/methods_organic.pdf

See also: *Standard Methods for the Examination of Water and Wastewater*
(<http://www.standardmethods.org>):

[which] has represented "the best current practice of American water analysts." This comprehensive reference covers all aspects of water and wastewater analysis techniques. *Standard Methods* is a joint publication of the American Public Health Association ([APHA](#)),

the American Water Works Association ([AWWA](#)), and the Water Environment Federation ([WEF](#)).

5. There is no chain of custody evidence. Although the formal rules of evidence certainly do not apply to this appeal or the determination of the Engineer, the burden was on AIS to demonstrate that the samples delivered to the laboratory were in fact samples taken from the applicable lagoons. Nothing in the record shows that the water samples for which test reports are furnished, were in fact the water taken from the AIS Wastewater and there was no potential for adulteration of the samples. The chain of custody rule should be applied when the evidence is central to the decision to be made. See for example: *Sullivan (Re), 2009 CanLII 91238 (ON RC)*;

6. With the possible exception of chlorides, there is nothing in the Record to reflect the County considered the ability of the Debert STP to reduce or remove the Hazardous and Potentially Hazardous Substances which were present in or reasonably suspected to be present in the AIS Wastewater.

Observations Based on AIS Application

According to the application made by AIS in the form of the AIS letter to the County dated 5 December 2012 (“AIS Application”):

Except for the NORMS and the contaminants reflected in Schedule A of the letter (Waste Survey Report) there were only two contaminants known to exist in the fracking wastewater. See Page 1, Paragraph 3 of the 5 December 2012 Letter. There is nothing offered by AIS in support of this suggestion. It seems incredible given the plethora of contaminants known to be employed in fracking and those known to be the by product of fracking.

Although the AIS Application mentions there were two additional contaminants in the AIS Wastewater, the information AIS provides is a statement that they comprised less than 0.1% of the volume of fracking wastewater and copies of the applicable Material Data Safety Sheets (“MDS”) are included in Appendix C of the Application. When we look at the MDS we see that these are highly toxic and toxic compounds, each comprised of more than one hazardous substance. It was incumbent upon AIS to provide and upon the County to require AIS to provide sampling and test results to establish the levels of each of these hazardous substances. Nevertheless, the Record does not reflect this occurred. 0.1% is actually a very significant quantity of hazardous materials in a volume of 4.5 million liters. Most Hazardous and Potentially Hazardous Substances for which limits have been set or recommended, have those limits set in mg/liter. One milligram per liter (1 mg/liter) is the equivalent of one part per million (1 ppm). 0.1% is the equivalent of one part per 1,000. So asserting these toxic compounds are found at levels lower than 0.1% is not an indication that these toxic substances are present at any level that might be considered acceptable for purposes of discharge into the Debert STP.

Schedule A of the Application (Waste Survey Report) alleges that the AIS Wastewater does not contain any of the following:

Hazardous Industrial Wastes

Hazardous Waste Chemicals

Reactive Wastes

The Record does not appear to contain any factual basis for such sweeping conclusions.

At the 40th page in the Application, the water test results show:

	Mg/liter Sample	MG/liter Limit
Total Chemical Oxygen Demand	790	200
Dissolved Chlorides	2,000	250
Total Dissolved Solids	33,000	400

At the 42nd page in the Application, the water tests results show:

Barium	4,390	10
Calcium	479,000	1,000
Magneisum	220,000	1,000
Potassium	22,200	1,000
Sodium	12,400,000	10,000
Strontium	16,600	10

At the 50th page in the Application, the water test results show:

Total Chemical Oxygen Demand	310	100
Dissolved Chloride	5,400	120
Total Dissolved Solids	8,600	400

At the 52nd page in the application, the water test results show:

Arsenic	12.4	1	[EPA ceiling is 10 ppb]
Barium	1,330	1	
Calcium	133,000	100	

Lithium	196	2
Magnesium	47,700	100
Potassium	8,400	100
Sodium	3,240,000	100
Strontium	5,010	20
Uranium	0.24	0.1

Time did not permit any in depth analysis of the potential harm from these levels of contaminants, but we note:

According to the EPA (<http://water.epa.gov/lawsregs/rulesregs/sdwa/arsenic/Basic-Information.cfm#three>):

Human exposure to arsenic can cause both short and long term health effects. Short or acute effects can occur within hours or days of exposure. Long or chronic effects occur over many years. Long term exposure to arsenic has been linked to cancer of the bladder, lungs, skin, kidneys, nasal passages, liver and prostate. Short term exposure to high doses of arsenic can cause other adverse health effects, but such effects are unlikely to occur from U.S. public water supplies that are in compliance with the arsenic standard [10 ppb, which is far lower than the 1 mg/liter limit cited above].

The arsenic level of 12.4 mg/liter reflected in the AIS test results, are 1,240 times greater than the level permitted by the EPA in drinking water systems.

Appellants also refer the County to the Appellant’s statement of appeal which included reference material reflecting the potentially significant consequences of discharges of high levels of chlorides, and salts from wastewater treatment plants.

We also note that the above reported levels of total dissolved solids, arsenic, and barium are significantly higher than the levels permitted for discharged under the County’s own Bylaw Policy, Section 6. Those figures are:

	Test Results mg/liter	Bylaw Policy Limit mg/liter
Arsenic	12.4	1
Total Dissolved Solids	33,000	300
	8,600	300
Barium	4,390	5

We could not find anything in the Record which reflects the County considered that the levels exceeded the permitted levels in the Sewer Bylaw Policy.

The very high levels of total dissolved solids and total chemical oxygen demand reflected above are another likely source of harm to aquatic life in the Chinagois River, Cobequid Bay and associated wetlands. According to the City of Vancouver

(<http://www.metrovancouver.org/services/wastewater/treatment/Pages/default.aspx>):

Total Suspended Solids (TSS)

Total suspended solids refers to particles of matter – both large and small – that can be present in wastewater. These particles carry bacteria that can make wastewater harder to disinfect and can use up oxygen in the water as they break down. Solids can also sink, blanketing the bottom of rivers and oceans and destroying habitat for aquatic and marine life.

Biochemical Oxygen Demand (BOD)

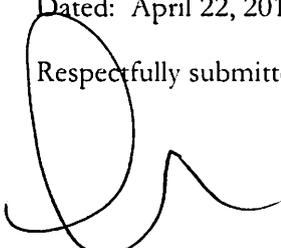
When organic materials— both solid and dissolved—break down in wastewater, they use up oxygen. Biochemical oxygen demand measures the amount of oxygen consumed by these materials in water as they biodegrade. If the biological oxygen demand is high and too much oxygen is being consumed, it can cause problems for fish and other aquatic life that also need to use the oxygen in the water.

CONCLUSION

Appellants express their appreciation for the opportunity review the Record. A review of the Record appears to confirm that the grounds for overturning the Approval are overwhelming.

Dated: April 22, 2013

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Mark Tipperman', written over the typed name below.

Mark Tipperman