



Application for Amendment to Construct and Operate New Solid Waste Disposal Facilities; City of Iqaluit Municipal Water Licence 3AM-IQA1626

Small, Jody (EC) <jody.small@canada.ca>

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To: Richard Dwyer <richard.dwyer@nwb-oen.ca>, Licensing Department <licensing@nwb-oen.ca>

Cc: "Auser, Trish (EC)" <trish.auser@canada.ca>, "Fairbairn, Margaret (EC)" <margaret.fairbairn@canada.ca>, "Asher, Brian (EC)" <brian.asher@canada.ca>, "EE Nord RPN NU / EA North PNR NU (EC)" <ec.eenordrpnru-eanorthpnrnu.ec@canada.ca>

Good afternoon,

As discussed during the Technical Meeting for the above mentioned Water License amendment on September 17, 2020, Environment Climate Change Canada is providing the attached summary of the outstanding technical comments for the project that we presented yesterday.

We look forward to hearing from you regarding the re-scheduling of the Pre-Hearing Conference.

Sincerely,

Jody Small

Acting Head, Environmental Assessment South

Environment and Climate Change Canada / Government of Canada

jody.small@canada.ca / Tel: 780-951-8961 / Cell: 780-217-8269

Chef intérimaire, Évaluation environnementale du sud

Environnement et Changement climatique Canada / Gouvernement du Canada

Table 1: City of Iqaluit Municipal Water License Amendment (Type “A” License 3AM-IQA-1626) - Summary of ECCC’s outstanding technical comments and requests presented at Nunavut Water Board Technical Meeting September 17, 2020.

Topic: Baseline Monitoring, ECCC Technical Comment #1			
Outstanding recommendation	Notes	Request	Commitment
<p>ECCC recommends that the proponent:</p> <ul style="list-style-type: none"> • Provide raw and summarized data (including field results, laboratory reports, a tabulated summary, and a comparison of monitored parameters to relevant guidelines) for the baseline conditions assessment of the Waste Transfer Station and landfill conducted by Dillon Consulting in 2019; and • Show how the baseline information has been used and incorporated into design/mitigation as needed. 	<p>The City of Iqaluit’s response indicates that information will be included in the 100 % submission.</p>	<p>ECCC requests that the City provide the outstanding information (see column 1) for review.</p>	
Topic: Unbaled Waste, ECCC Technical Comment #2			
Outstanding recommendation	Notes	Request	Commitment
<p>ECCC recommends that:</p> <ul style="list-style-type: none"> • The proponent identify measures to ensure the containment of unbaled C&D debris and any unbaled MSW within the landfill cell. • Contingency measures, such as potential cover sources, should be available to ensure containment of unbaled waste in the event of any extended or recurring operational issues at the Waste Transfer Station. • The proponent conduct an evaluation of the durability of the baled wastes’ plastic cover, which should include a discussion of alternative cover methods. 	<p>The City of Iqaluit’s response document indicates that text reflecting this comment has been added to Sections 8.3.1 and 9.1 of the Operations & Maintenance Manual.</p>	<p>ECCC requests that the City provide the updated Sections 8.3.1 and 9.1 of the Operations and Maintenance Manual for review.</p>	
Topic: Acid Rock Drainage/Metal Leaching (ARD/ML), ECCC Technical Comment #3			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> • ECCC recommends that the proponent sample project borrow source locations in order to identify any Acid Rock Drainage/Metal Leaching potential that could affect water quality. Testing should be 		<p>ECCC suggests this recommendation could be resolved by a license condition, or by inclusion of this item in a quarry plan.</p>	

<p>completed using static and kinetic methods to characterize representative units.</p> <ul style="list-style-type: none"> ECCC recommends that the proponent should avoid quarry/units that are determined to have ARD/ML potential. 			
Topic: Leachate treatment – Landfill, ECCC Technical Comment #4			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> ECCC recommends that the proponent identify treatment options beyond the existing system, and determine the lead-time needed to install and commission the treatment system. 		ECCC suggests this recommendation could be resolved by inclusion of a licence condition that requires the City of Iqaluit to (1) characterize the leachate and (2) submit a treatment plan for Board approval.	
Topic: Leachate retention ponds, ECCC Technical Comment #5			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> ECCC requests that the City describe how volumes of effluent and precipitation would be managed under a potential high precipitation scenario (i.e., annual increase of 9 percent over baseline climate) during the first 2 years of operations. 	The City of Iqaluit's response document states that to account for a 9% increase over baseline conditions [i.e., the upper range precipitation projection scenario], storage volume of the [leachate retention] lagoons will have to be increased from 11,000m ³ to 14,000m ³ .	ECCC requests that the City provide the outstanding information (see column 1) for review.	
Topic: Groundwater, ECCC Technical Comment #6			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> ECCC recommends that the proponent revise the Environmental Protection Plans [i.e., EPP-Construction Phase; and EPP-Operations, Closure and Post-Closure Phases] to include groundwater as an environmental consideration for this project. 	The City of Iqaluit's response indicates that this information will be included in the 100 % submission.	ECCC requests that the City provide the outstanding information (see column 1) for review.	
Topic: Environmental Protection Plans, Section 4.0 – Mitigation measures tables, ECCC Technical Comment #7			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> ECCC recommends that the mitigation measures tables located in Section 4.0 of both Environmental Protection Plans (EPPs) each include a measure specifying that 	The City of Iqaluit's response document indicates that Section 4.0 of both Environmental Protection Plans (EPP-C, EPP-O) have been updated as requested.	ECCC requests that the City provide the updated Section 4.0 for both Environmental Protection Plans (i.e., EPP-Construction	

erosion and sediment control activities be conducted in accordance with the Erosion and Sediment Control Plan.		Phase; and EPP-Operations, Closure and Post-Closure Phases) for review.	
Topic: Environmental Protection Plans, Section 5.0 (Monitoring and Inspection), ECCC Technical Comment #8			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> ECCC recommends that the proponent submit the monitoring and inspection sections of the Environmental Protection Plans [i.e., EPP-Construction Phase; and EPP-Operations, Closure and Post-Closure Phases] prior to commencement of construction. 	<p>The City of Iqaluit's response document indicates that the Monitoring and Inspection section of the Construction Phase EPP document has been updated accordingly.</p> <p>The intent of Recommendation 8 is that the monitoring and inspection sections (i.e., Section 5.0) of both Environmental Protection Plans (i.e., EPP-Construction Phase; and EPP-Operations, Closure and Post-Closure Phases) be submitted prior to commencement of construction. The City's response indicates that only the Construction Phase EPP document has been updated.</p>	<p>ECCC requests that the City:</p> <ul style="list-style-type: none"> Submit the updated monitoring and inspection section (i.e., Section 5.0) of the Environmental Protection Plan – Construction Phase document for review; and Update and submit the monitoring and inspection section (i.e., Section 5.0) of the Environmental Protection Plan – Operations, Closure and Post-Closure Phases document for review. 	
Topic: Total Suspended Solids (TSS)/Turbidity monitoring, ECCC Technical Comment #9			
Outstanding recommendation	Notes	Request	Commitment
<p>ECCC recommends that the proponent:</p> <ul style="list-style-type: none"> Conduct sediment monitoring in relation to any project disturbances in or near water (e.g., in-stream construction); and Conduct TSS/turbidity monitoring routinely during in-stream works, and identify thresholds and accompanying management actions in advance of such in-stream works. 	<p>The City of Iqaluit's response document indicates that Section 4.3 of the Erosion and Sediment Control Plan document has been updated accordingly.</p>	<p>ECCC requests that the City provide the updated Section 4.3 of the Erosion and Sediment Control Plan for review.</p>	
Topic: Visual Monitoring, ECCC Technical Comment # 10			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> ECCC recommends that the proponent increase the frequency of visual monitoring during and following freshet and major rainfall events, particularly with respect to monitoring for signs of erosion and 	<p>The City of Iqaluit's response document indicates that this will be included in the 100 % submission.</p>	<p>ECCC requests that the City provide the outstanding information (see column 1) for review.</p>	

monitoring the capacity of the leachate holding ponds.			
Topic: Landfill surface monitoring, ECCC Technical Comment #11			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> ECCC recommends that the proponent add TSS and phenols to the surface water monitoring parameters listed in Section 3.5.1 (Surface Water Monitoring Plan) of the Facility Monitoring Plan. 	The City of Iqaluit's response document indicates that this will be included in the 100 % submission	ECCC requests that the City provide the outstanding information (see column 1) for review.	
Topic: Groundwater Monitoring, ECCC Technical Comment #12			
Outstanding recommendation	Notes	Request	Commitment
<p>ECCC recommends that the proponent:</p> <ul style="list-style-type: none"> Include the monitoring of dissolved metals, in addition to total metals, for groundwater samples; and Incorporate a description of how the groundwater monitoring results will be assessed (for example, compare results to baseline sample concentrations, applicable license requirements and recognized groundwater guidelines) into Section 3.7 (Active Layer Groundwater Monitoring) of the Facility Monitoring Plan. 	The City of Iqaluit's response document indicates that this will be included in the 100 % submission.	ECCC requests that the City provide the outstanding information (see column 1) for review.	
Topic: Effluent discharge, ECCC Technical Comment #13			
Outstanding recommendation	Notes	Request	Commitment
<ul style="list-style-type: none"> ECCC recommends that the proponent characterize the effluent to determine compatibility with the wastewater treatment process prior to transporting effluent to the City's Waste Water Treatment Plant (WWTP). The proponent may need to implement alternative small-scale treatment if effluent quality would render the options discussed unacceptable. 	The City of Iqaluit's response document indicates that Section 12.2 of the Operations and Maintenance Manual and Section 3.9 of the Facility Monitoring Plan have been updated accordingly.	ECCC requests that the City provide the updated Section 12.2 of the Operations and Maintenance Manual and the updated Section 3.9 of the Facility Monitoring Plan for review.	

Topic: Leachate Management – Landfill, ECCC Technical Comment #14			
Outstanding recommendation	Notes	Request	Commitment
<p>ECCC recommends that the proponent:</p> <ul style="list-style-type: none"> • Provide details for assessing landfill leachate/effluent characteristics; and • Include a summary in the annual report of the landfill leachate management system, including leachate generation rates, leachate/effluent characteristics, holding pond capacity, and an update on leachate management/treatment. 	<p>The City of Iqaluit's response document indicates that Section 12.2 of the Operations and Maintenance Manual has been updated accordingly.</p>	<p>ECCC requests that the City provide the updated Section 12.2 of the Operations and Maintenance Manual for review.</p>	
Topic: Leachate Management – Waste Transfer Station, ECCC Technical Comment #15			
Outstanding recommendation	Notes	Request	Commitment
<p>ECCC recommends that the proponent:</p> <ul style="list-style-type: none"> • Provide secondary containment for the leachate holding tank; • Characterise the WTS leachate to determine compatibility with the wastewater treatment process prior to transporting leachate to the City's WWTP; • Track the WTS leachate generation rates/volumes and treatment/disposal details; and • Report the WTS leachate generation rates/volumes, treatment/disposal details, and characterization results in the annual report. 	<p>The City of Iqaluit's response document indicates that Section 12.1 and Section 14.0, item 10 of the Operations and Maintenance Manual have been updated accordingly.</p>	<p>ECCC requests that the City provide the updated Sections 12.1 and 14.0 of the Operations and Maintenance Manual for review.</p>	
Topic: Liner installation timing and planning, ECCC Technical Comment #16			
Outstanding recommendation	Notes	Request	Commitment
<p>ECCC recommends that the proponent provide in the Annual Report:</p> <ul style="list-style-type: none"> • An update on the capacity of the landfill cell currently in use, including the installation timing calculation (inputs and result); and • Discuss the required actions/schedule for the design and installation of the next lined disposal area in the sequence. 	<p>The City of Iqaluit's response to this recommendation states "Refer to Section 14.0, item 7 of the Operations and Maintenance Manual".</p> <p>ECCC notes that, although Section 14.0, item 7 of the O&M manual discusses the landfill cell liner installation, it does not</p>	<p>ECCC suggests that the licence include a condition under the annual reporting requirements for (1) an update as outlined in the first bullet of the recommendation [i.e., an update on the capacity of the landfill cell currently in use, including the installation timing calculation (inputs and result)], and (2) a brief status report on the</p>	

	indicate whether the items listed in this recommendation will be included in the annual report.	requirements for the next disposal area in the sequence.	
Topic: New Technology/ Lessons Learned, ECCC Technical Comment #17			
Outstanding recommendation	Notes	Request	Commitment
ECCC recommends that the proponent: <ul style="list-style-type: none">• Identify and describe measures to prevent/mitigate the challenges described (i.e., substantial volumes of poor quality leachate, and down time during mechanical breakdowns and for maintenance), and discuss their anticipated effectiveness;• Describe how the effectiveness of these prevention/mitigation measures will be monitored; and• Document lessons-learned to inform subsequent stages of construction and operation.	<p>As baling of municipal solid waste is not a proven technology for Canada's arctic environment, it is important to proactively identify and address potential new challenges/ issues at the outset of the project, to the extent possible.</p> <p>ECCC notes that the baling facility located in Yellowknife has been experiencing ongoing challenges, including generation of substantial quantities of poor quality leachate, management and disposal of leachate, and challenges with operation of the machinery including down time for repairs and maintenance. It would be prudent to consider whether such issues could occur at the City of Iqaluit's planned baling operations.</p>	<p>ECCC requests that the City provide the outstanding information (see column 1) for review.</p> <p>ECCC suggests that the Proponent contact the City of Yellowknife to see if there are common elements in the proposed system that may lead to problems. ECCC can provide the City of Iqaluit with contact information for the City of Yellowknife's Manager of Sustainability and Solid Waste.</p>	