

**Technical Meeting / Pre-Hearing Conference
Compilation of Issues**

ISSUE	INAC	GN-DOE	EC	DFO
Completeness				
	The following items remain outstanding and were required as part of a complete application:			
	1a) Operating capacity of pump used and intake screen size used.			
	1b) Conditions applying to the monitoring Program of the water licence; water sampling is required. (see Part H of the licence)			
	1c) Monthly and annual data for water use and waste disposal is based on water delivery records (water delivered equals effluent waste disposal). INAC considers this an adequate record			
	1d) Items under Part B Item #1 of the water license remain outstanding. These include i) tabular summaries of all data generated under the Monitoring Program. ii) a summary of modifications and major maintenance work carried out on water supply and waste disposal facilities. iii) list of unauthorized discharges. iv) a summary of abandonment and restoration work completed and any work anticipated for the next year.			
	1e) Hazardous waste management plans, procedures and protocols should be adopted.			
			<p>The application documents contain conflicting information on many matters, and clarification was sought in the letter previously submitted to the Nunavut Water Board (NWB) by Environment Canada as part of the Board's Completeness Check. Information that remains outstanding include:</p> <ul style="list-style-type: none"> -Number of sewage lagoons currently in use, and status of those not in use, if any. -Confirmation on the current sewage lagoon wetland flow path(s) -Sewage Lagoon discharge time, duration and method. -Identification of SNP ARV-2 location 	
Technical Review				
Water Supply				
Water supply filtration changes	Water supply filtration changes are mentioned in the license application and should be included in the Operation and Maintenance plan.			

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Drawdown of Wolf River				<p>In order to provide our advice with respect to the impact of fish and fish habitat or determine our potential role related to this Type "A" Water Licence, we require at a minimum, the following additional information on impacts to fish and fish habitat:</p> <p>A detailed description of the proposed water volume of water to be withdrawn from Wolf River against total annual recharge and the potential ramifications of draw down.</p>
Water intake				<p>In order to provide our advice with respect to the impact of fish and fish habitat or determine our potential role related to this Type "A" Water Licence, we require at a minimum, the following additional information on impacts to fish and fish habitat:</p> <p>A detailed description of the proposed water intake. Refer to the Freshwater Intake End-of-Pipe Fish Screen Guidelines (DFO 1995), which is available at www.dfo-mpo.gc.ca/library/223669.pdf.</p>
Solid Waste				
Bulky Metal Storage and Contaminated Soil Site	<p>It is stated in the O & M Plan that "seven hundred and fifty cubic meters of contaminated soil was reportedly removed from the N.W.T. Power Corporation (NWTPC) tank farm and brought to the Bulky Waste site for landfarming. Some of the soil has been spread over the former landfill with approximately 300 m3 still in piles. The soil is believed to be contaminated with diesel. The proposed new landfill site will have an area set aside for bulky metals and a landfarm. It is proposed that the contaminated soil at the bulky metals site be evaluated and handled according to regulations. No time table has been set to address this issue." Nuna Burnside. Standard operating procedures should be provided to indicate how the contaminated material and any run off will be minimized including appropriate timelines and future activities.</p>		<p>A separate Solid Waste site has been identified at 500m south of the community containing vehicles, heavy equipment, tires, appliances, snowmobiles, and 45 gallon drums as well as hydrocarbon contaminated soil. Leachate from this site is unmanaged. EC recommends that this site be captured by this new Type A water licence and require appropriate Bulky Waste management as well as landfarming and monitoring of the contaminated soil. EC recommends decommissioning and restoring this site as soon as an appropriately lined site becomes available. In the meantime, leachate sampling would provide useful information to identify the geographical extent of environmental impact.</p>	
Runoff from the Solid Waste Disposal Facility	<p>Runoff from the solid waste disposal site is required to be prevented and controlled from moving into the environment. As of the last INAC inspection this has not been done. Use of contaminated soil as cover material may accelerate existing runoff from landfill.</p>			

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Hazardous Waste storage			Hazardous Waste is stored beside the Public Works Garage. Very little detail is provided about this site except the descriptions that "the area is not fenced or controlled" and that it "is out of compliance with regulations." EC recommends that the site be improved to control the access to the Hazardous Waste and that appropriate containment be in place to reduce spills or leaching into the natural environment. Reference to appropriate management of Hazardous Waste can be found in the GN-DOE Environmental Guideline for General Management of Hazardous Waste.	
Solid Waste Operations and Maintenance Plan			EC considers this document to contain pertinent information and references. The Solid Waste O&M Plan should be revised and resubmitted for approval upon issuance of a new water licence.	
Burning	The Operation and Maintenance (O and M) plan for the solid waste facility states: that the Hamlet burns combustible waste as a way to reduce volumes of wastes. This, however contradicts the water license application where it is stated that burning of combustible waste does not take place	The DOE recommends that wood which has been treated with preservatives (such as creosote, pentachlorophenol, or heavy metal solutions) should not be burned.	Section 3.3 Landfill Operation (Burning) In the Water Licence Application, it is stated that "the Hamlet does not conduct burning." However, the O&M Plan explains that "Burning is used to reduce volumes of waste and is uncontrolled with no segregation of combustible material from non-combustible materials." Furthermore, explicit directions on conditions and methods of burning are provided in the O&M Plan. If burning is not a practice at this landfill, EC recommends that all reference to burning should be removed from the O&M Plan. If burning is indeed occurring as a management measure at the Solid Waste Facility, the following comments are provided: <input type="checkbox"/> In order to provide clear operational instruction regarding material suitable for burning, EC recommends including lists of material that are suitable or non-suitable for open burning. <input type="checkbox"/> A reference should be made in this section to the Government of Nunavut Department of the Environment (GN-DOE) Policy entitled "Municipal Solid Wastes Suitable for Open Burning."	

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Hazardous Waste		The DOE monitors the movement of hazardous wastes, from generators, carriers to receivers of the wastes, through the use of a tracking document known as a Waste Manifest. A Waste Manifest must accompany all movements, and all parties must register with DOE by contacting: Robert Eno (867) 975-7729 reno@gov.nu.ca Ian Rumbolt (867) 975-7748 irumbolt@gov.nu.ca	Section 3.4 Hazardous Waste In order to provide clear operational instruction regarding Hazardous Waste, EC recommends including a list of typical Hazardous Wastes as well as a reference to the location of the Hazardous Waste Disposal Area. Furthermore, the GN-DOE Environmental Guideline for General Management of Hazardous Waste should be referenced in this section.	
Reuse/ recycle			Section 3.9 Reuse Recycle This section contains one paragraph relating to a Reuse Recycle Area followed with a section relating to Hazardous Waste. EC recommends moving the Hazardous Waste information to Section 3.4	
Landfarming contaminated soil			Landfarming of Contaminated Soil The application documents indicate that 750m ³ of diesel contaminated soil is present at the Bulky Metals Sites. However, no operational instruction is given on the proper handling of hydrocarbon contaminated soil. EC recommends including landfarming methods, containment, and sampling as part of this O&M Plan. Please find attached EC's Landfarming Recommendations for your consideration.	
Sewage				
Sewage seepage	In the Operation and Maintenance plan of sewage lagoons it states that the lagoon continuously seeps sewage through the berm to the wetland area. The O and M Plan states that the seepage out of the lagoon equals input into the lagoon as the level of the lagoon remains constant. The O and M plan also calculates retention time in lagoon as 149 days, but this calculation does not consider seepage amounts.			

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	Specifically our concern is around the lack of knowledge of the impact of the sewage seeps through the berms. The concerns are based on the seeps affecting the integrity of the berm and the impact of seepage on the environment as there is no monitoring data to assess impacts. INAC inspectors have noted CCME exceedances during previous inspection years. Clearly the lagoon would afford some form of the intended treatment if some retention time was provided, rather than seeping out at a constant rate as suggested by comment #3a above. Repairs to the berm along with some monitoring would provide some assurance that the lagoon is operating as intended reducing the potential for environmental impacts as well as the potential for catastrophic failure of the berm.			
Sewage decant/ discharge	There is no decanting/discharge schedule provided in the submission. However, in the supplemental Questionnaire to the water license application the proponent states that there is a seasonal discharge of sewage to the wetland area of 3-4 weeks in June and again in September if necessary. No discharge should take place without advising an INAC Inspector first as per water license. Decant operations should also be included in the O and M Plan of the Sewage Treatment Facility.			
Abandonment and restoration	There are two discontinued sewage lagoons that are no longer in use. As a result there should be an abandonment and restoration Plan		EC recommends that Abandonment and Restoration Plans be submitted to the Board for approval for the old Sewage Lagoons if not in use and the current Solid Waste Facility.	
Effluent			The Hamlet must ensure that any effluent discharged from a system's final discharge point is in compliance with Section 36(3) of the Fisheries Act. According to the Fisheries Act, Section 36(3), the deposition of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water, is prohibited.	

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Sewage Disposal Facility Operations and Maintenance Plan			EC considers this document to contain pertinent information and references. The Sewage Treatment Facility O&M Plan should be revised and resubmitted for approval upon issuance of a new water licence	
Lagoon storage capacity			Section 3.1.2 Lagoon Storage Capacity This section indicates that sludge removal should be considered starting in 2014. Prior to sludge removal, sludge blanket thickness will need to be assessed. EC recommends including details on how to monitor or assess sludge thickness as part of the O&M Plan.	
Drawings				
Design Drawings			EC recommends that design drawings be submitted to the Board for approval prior to construction of the new Solid Waste Facility.	
As-Built Drawings			Furthermore, EC recommends that As Built Drawings be submitted for the new Sewage Lagoon and the new Solid Waste Facility when it is completed.	
Monitoring				
Monitoring			No water quality results have been provided with the application, and no sampling is known to have taken place in the community, though monitoring was required under the expired licence. With regards to sludge accumulation, the application indicates that "the sludge has not interfered with the efficiency of the lagoon," yet no water samples have been submitted to verify this statement. Furthermore, in the Supplementary Questionnaire, the wastewater wetland is described as utilizing "complex physical and biological processes to treat the wastewater," yet no work or sampling has been done to verify this statement. Therefore, EC recommends that a thorough lagoon discharge and wetland hydrology study which includes water samples be completed as one of the licence conditions to ascertain this information.	

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			In order to monitor the whole effluent effect on the receiving environment, EC recommends including a Pass/Fail Bioassay Toxicity test at an appropriate sampling location prior to effluent discharge to the receiving environment. Toxicity testing provides an evaluation of effluent quality that integrates all the measured parameters, and provides the proponent with an indication of overall effluent characterization with respect to deleteriousness.	
Supporting Plans				
Environmental Monitoring Plan and QA/QC Plan			EC considers this document to be a detailed and complete plan to achieve the objectives of high quality sampling, sample transportation and best management practices. In order to ease the interpretation of sample data results, the Monitoring Station Name (ex. ARV-1, ARV-2) should be specifically identified on the sample label. EC suggests that the words "sample name" in section 4.1.7 be replaced with "Monitoring Station Name." The EMP and QA/QC Plan should be revised and resubmitted for approval upon issuance of a new Water Licence.	
Environmental Emergency Contingency Plan			Environment Canada considers this Plan to be a comprehensive and well written plan. The EEC Plan should be revised and resubmitted for approval upon issuance of a new Water Licence.	
			Section 2.2.4, pg 5: This section should be revised to clarify whether or not spills from 'Other Hamlet Activities' are covered by this contingency plan. As this section is written, it could be understood that this EEC Plan, and those responsible for implementing the plan, applies to any spill that occurs in the municipality, whether or not it is related to activities described in the Water Licence.	
		Appendix A (Contact Information) of the Environmental Emergency Contingency Plan should include the GN-DOE's Manager of Pollution Control, Ian Rumbolt, who can be reached at irumbolt@gov.nu.ca or (867) 975-7748.	Appendix A, Contact Information: EC suggests that the Government of Nunavut, Department of Environment, Environmental Protection Division be added to this list.	

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		The DOE recommends that, should a spill occur on water or ice, Environment Canada be consulted regarding clean-up methods.		
	Under the Environmental Emergency Contingency Plan, section 1.4 heading states Hamlet of Whale Cove. This Heading should be changed to say Hamlet of Arviat.			