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Staff Report

Company: Hamlet of Fort Liard	
Location: Fort Liard	Application: MV2009L3-0025
Date Prepared: January 21, 2010	Meeting Date: February 5, 2010
Subject: Renewal of Type B Water Licence	

1. Purpose/Report Summary

To obtain a board decision on the Type B Water Licence (WL) Application submitted by the Hamlet of Fort Liard for the renewal of their municipal Water Licence.

2. Background

- September 10, 2009 – received WL Application;
- September 24, 2009 – deemed incomplete;
- October 30, 2009 – WL Application sent out for review;
- November 27, 2009 – comments due on WL Application;
- December 22, 2009 – draft WL sent out for review;
- January 20, 2010 – comments due on draft WL; and
- February 5, 2010 – WL Application presented to Board.

3. Discussion

The Hamlet of Fort Liard’s (or Fort Liard’s) current Water Licence N3L3-1478, which is for the use of water and disposal of waste for municipal purposes, will expire on February 28, 2010. Fort Liard has applied for a renewal, which has been assigned a new application number, MV2009L3-0025, for a term of ten years.

As per page 4 of the renewal application, water is drawn from two groundwater wells adjacent to the Liard River for drinking water; Sewage is deposited into lagoons located 15 km from town on the

north side of the Liard Highway; and solid Waste is deposited at the community Waste disposal site, located at the same site as the Sewage lagoons.

The Hamlet of Fort Liard has retained a consultant to produce a 40-year conceptual design for a new solid waste facility. Once the design is complete, the Hamlet of Fort Liard will need to apply for an amendment to the Water Licence prior to construction.

Preliminary Screening

To be exempt from a preliminary screening, a development must meet the requirements outlined in section 2 of Part I, Schedule 1 of the Exemption List Regulations annexed to subsection 143(1) of the *Mackenzie Valley Resource Management Act* which states:

A development, or part thereof, for which renewal of a permit, licence or authorization is requested that:

- a) has not been modified; and
- b) has fulfilled the requirements of the environmental assessment process established by the *Mackenzie Valley Resources Management Act*, the *Canadian Environmental Assessment Act* or the Environmental Assessment Review Process Guidelines Order.

A preliminary screening was approved by the Board on February 28, 2002 when Water Licence N3L3-1478 was issued (see attached). When renewal application MV2009L3-0025 was forwarded to the distribution list on November 20, 2009, reviewers were asked to comment on the exemption question. The Department of Fisheries and Oceans (DFO) provided the only response. In a letter dated November 23, 2009, DFO stated:

Regarding the question of exemption of this application from preliminary screening, we feel that this decision is under the jurisdiction of the MVLWB based on applicable legislation. We have no comment in this regard.

As per the application, the scope of the development, which allows for the use of water and disposal of Waste for municipal purposes, has not changed.

However, prior to constructing a new solid waste facility in the future, the Hamlet of Fort Liard will need to apply for an amendment, at which point the new facility will be screened.

The draft Water Licence

Staff has revised conditions of existing Water Licence N3L3-1478 (see attached) for draft Water Licence MV2009L3-0025 to reflect current requirements.

Aside from new template changes (e.g. sequence of Parts), the revisions of note include:

- The addition of the coordinates for the Waste Disposal Facility in the scope;
- Under Part D, item 2, criteria from Part D, item 14 of WL N3L3-1478 was used. Further, this criteria was recommended by Indian and Northern Affairs Canada (INAC).
- Changing the decant location to reflect the new configuration of the sewage lagoon cells (see page 8 of the application);
- Deleting items 10 through and including 15 under Part D of N3L3-1478, as these requirements have been fulfilled;
- Adding the requirement of a hazardous waste management plan;
- Revising “Part G: Conditions Applying to Abandonment and Restoration” to “Part G: Conditions Applying to Closure and Reclamation”;
- Requiring an updated plan for the Operation and Maintenance of the Waste Disposal Facilities and Water Supply Facilities; and
- Adding the requirement of a sludge management plan for desludging the Sewage Disposal Facility.

Other changes, including ones to the Surveillance Network Program, are highlighted in the reviewer comment summary tables.

The term of the Water Licence

The effective date of Water Licence MV2009L3-0025 has been set as March 1, 2010 because the expiry date of the current Water Licence N3L3-1478 is February 28, 2010. The expiry date is February 29, 2020, as it is a leap year.

4. Comments

n/a

5. Review Comments

Please see attached comment summary tables for the WL Application and draft Water Licence.

In a letter dated December 10, 2009, Dillon Consulting, on behalf of Fort Liard, responded to comments on the application (see attached).

6. Security

No security is recommended for this Water Licence.

The Inspector has not recommended security for this operation.

7. Conclusion

Board staff concludes that:

- a) The development is exempt from preliminary screening as the scope of the project has not been modified, and it has been previously screened; and
- b) Conditions proposed for the Water Licence should mitigate any environmental impacts.

8. Recommendation

Board staff recommends:

- a) The development be exempt from preliminary screening; and
- b) The Board approve the Water Licence with proposed conditions for a term of ten years.

9. Attachments

- Application (CD)
- Comment Summary Table – WL Application
- Comment Summary Table – Draft Water Licence
- Water Licence N3L3-1478
- February 28, 2002 Preliminary Screening for N3L3-1478
- Response letter dated December 10, 2009 from Dillon Consulting
- Draft Cover Page
- Draft Water Licence
- Draft Issuance Letter

Respectfully submitted,



Angela Plautz
Regulatory Officer

Reviewer Comments – Hamlet of Fort Liard – MV2009L3-0025 - Type B Water Licence Application

Reviewer	Comment	Mitigation
<p>Department of Fisheries and Oceans, Western Arctic Area, Rick Walbourne, Habitat Biologist</p>	<p>Excerpt from letter dated November 23, 2009:</p> <p>From the proposal, we understand that the proponent plans to pump a maximum of 50,000 m³ of water from two groundwater wells located adjacent to the Liard River. The proponent is requesting that the Water Licence be valid from 2010 to 2020. After reviewing the proposal, DFO can conclude that the proposal is not likely to result in impacts to fish and fish habitat. However in anticipation of future works, DFO would like to offer the following comment:</p> <p>It is stated throughout the application that relocation of some municipal infrastructure and decommissioning of existing structures may occur within the applied timeframe for the requested Water Licence. If the Hamlet of Fort Liard decides to make these changes to municipal infrastructure, DFO recommends that a formal amendment application be submitted to ensure appropriate mitigation measures are in place at all sites to protect fish and fish habitat.</p> <p>Regarding the question of exemption of this application from preliminary screening, we feel that this decision is under the jurisdiction of the MVLWB based on applicable legislation. We have no comment in this regard.</p> <p>Please be advised that any impacts to fish and fish habitat which result from a failure to implement the proposal as described or incorporate the additional mitigation measures included in this letter could lead to corrective action such as enforcement.</p> <p>Excerpt from letter dated November 24, 2009</p> <p>The Hamlet of Fort Liard is applying to renew their water license for up to a 10 year term to allow for the municipal use of water and deposit of waste. The Sewage Treatment Facility consists of a 3-</p>	<p>Comments forwarded to Applicant.</p> <p>An amendment application would be required.</p> <p>Comments forwarded to Applicant.</p>

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	<p>celled system with twice annual decant to a forested area that eventually drains into the Petitot River. Cell 1 is newly constructed to increase retention time, resulting in flow reversal and decommissioning of the previous cell 1. The Solid Waste Facility consists of segregated bulky waste, hazardous waste and construction waste. The Hamlet is currently reviewing design options for a new Solid Waste Facility with a 40-year lifespan.</p> <p>Environment Canada recommends that the following conditions be applied throughout the duration of the license:</p> <p>General</p> <ul style="list-style-type: none"> • The Hamlet must ensure that any effluent discharged from the system's final discharge point is in compliance with Section 36(3) of the <i>Fisheries Act</i>. According to the <i>Fisheries Act</i>, 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. • It is recommended that total volumes of sewage be tracked and recorded to ensure adequate management and planning for tracked volumes. Records could be generated by tracking the number of full or partial sewage truckloads per day/week/year with the associated volume of the sewage trucks tanks. • Environment Canada recommends that proper signage is in place indicating the locations of the SNP sites for the sewage lagoon and solid waste facility, as well as for the relevant segregated waste materials (ie, bulky waste, hazardous waste, etc). • An updated Operations and Maintenance Manual should be submitted for approval as a condition of the water licence to reflect the operation and maintenance of the New Sewage Treatment 	<p style="text-align: center;">Part D of Water Licence (WL)</p> <p style="text-align: center;">Part B and Surveillance Network Program (SNP)</p> <p style="text-align: center;">Part B</p> <p style="text-align: center;">Part I</p>

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	<p>Facilities and the resulting reconfiguration of Solid Waste Facilities. Generally the plan should include:</p> <ul style="list-style-type: none"> ○ A description of how facilities are operated and maintained; ○ How often these tasks are performed; and ○ The personnel responsible for their completion. ○ All applicable Territorial Guidelines <p>Sewage Treatment Facilities Management</p> <p>A Closure and Reclamation Plan should be submitted for approval as a condition of the water licence for the decommissioned sewage cell.</p>	Part G
	<ul style="list-style-type: none"> • A minimum 1 m of freeboard should be maintained within the sewage lagoon at all times. 	Part D
	<ul style="list-style-type: none"> • Maintenance should include removal and disposal of sewage sludge. Estimates should be made of the quantities of sludge likely to be produced, the required frequency of extraction from the lagoons; and operational procedures developed for environmentally sound removal and disposal. These procedures should include characterization to ensure disposal options are appropriate. Environment Canada recommends that prior to desludging occurring, the proponent submit for approval a Sewage Sludge Management Plan that clearly outlines the chemical composite. <p>Solid Waste Management</p> <ul style="list-style-type: none"> • A Hazardous Waste Management Plan needs to be developed and implemented, and should cover handling and storage, as well as identify ultimate disposal of hazardous wastes. • An Abandonment and Restoration Plan is needed for the solid waste site if this is not already in place. 	Part I Part D Part G

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	<p>Monitoring and Compliance</p> <ul style="list-style-type: none"> It is very important that monitoring of the effluent from the sewage lagoon is carried out as per the Surveillance Network Program within the Water Licence. Proper and regular monitoring allow for evaluation and management of the current system and will help to prevent deleterious discharge to the receiving environment. EC notes the requirement for weekly sampling during decant. If the decant period is less than 7 days, sampling requirements should reflect this and be changed to require samples on the first and last day of decant. In order to properly monitor the system over time, it is important to collect SNP samples from the same location. SNP 1478-5 should have an explicit description or provide the GPS or UTM location. In Part D.4 of the licence, the location is described as “the East end of cell three (3) of the Sewage Disposal Facilities” which should be revised to reflect the current configuration. Site visits, inspection reports and the map provided entitled “Existing Sewage Treatment Lagoons and Solid Waste Disposal Site” note the presence of ponded water at the Solid Waste Site. EC recommends an additional SNP station is added to characterize the surface water leachate in order to develop adequate disposal methods. It is noted that groundwater wells exist in the vicinity of the facility. These should be monitored as well to properly manage the extent of the sewage plume. EC notes that the CCME Strategy for the Management of Municipal Wastewater has been signed, and that northern jurisdictions can expect performance standards for BOD5 and TSS to be regulated following a five year period which starts in 2009. We anticipate that the standards for these parameters may be higher than the 25 mg/L for each that is proposed for the southern jurisdictions and the Yukon, and that they will be lower than the NWT Guidelines for the discharge of treated municipal 	<p>Part D and SNP</p> <p>Configuration revised.</p> <p>SNP Station 1478-8 has been added.</p> <p>Carbonaceous Biological Oxygen Demand (CBOD) has been added to the SNP.</p>

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<p>Indian and Northern Affairs Canada, Carole Mills, Manager</p>	<p>wastewater in the Northwest Territories' guideline levels. Also, it should be noted that carbonaceous Biological Oxygen Demand (CBOD) will be the regulated parameter, and it would be prudent to add this to the list of licence parameters now, in order to gain some idea of the system track record over the next five years.</p> <p>Spill Contingency</p> <ul style="list-style-type: none"> • All spills must be documented and reported to the NWT Spill Line at (867) 920-8130. • The Hamlet should produce an updated Spill Contingency Plan for approval which includes the new operations and infrastructure. The plan should facilitate response to spills which might occur during construction and operation and decommissioning of the project. The plan should include a list of available spill response equipment and the names of trained personnel who will be on-site and available in the case of a spill. If a Spill Plan is not already in place [sic], the Hamlet should submit a Spill Plan for approval. <p>If there are any changes in the proposed activities, EC should be notified, as further review may be necessary. Please do not hesitate to contact me with any questions or comments with regards to the foregoing.</p>	<p>Part B</p> <p>Part F</p>
<p>Indian and Northern Affairs Canada, Carole Mills, Manager</p>	<p>Excerpt from letter dated November 27, 2009</p> <p>GENERAL</p> <p>The information provided by the Hamlet of Fort Liard within its application is useful and complete. INAC would like to thank the Hamlet of Fort Liard for providing this information with the applications. INAC would like to note that due to its familiarity with the site, the comments provided herein are based on the application as well as experience and familiarity with the site.</p>	

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	<p>WATER TREATMENT</p> <ul style="list-style-type: none"> The application states that Backwash Water is being collected in a sump and subsequently pumped into the Liard River. Presently no sampling of the backwash water is performed prior to discharge. INAC recommends that Backwash Water be sampled prior to discharge and tested for a basic suite of parameters including chlorine and metals. The frequency of backwash discharge was not identified in the application. INAC recommends the Hamlet of Fort Liard provide this information to determine appropriate sampling frequency. Following a review of the sampling results, disposal options should be evaluated to confirm whether or not direct discharge to the Liard River is the most appropriate disposal method. <p>SEWAGE DISPOSAL</p> <ul style="list-style-type: none"> The application states that in 2009, Cell 2 and 3 will be decanted and flow direction will be reversed. The application also notes that future operation of the lagoon will include Cell 2, 3 and 4 only and that Cell 1 will be decommissioned. INAC recommends that the Operation and Maintenance Manual for the Sewage Disposal Facility be updated to reflect this change. The Closure and Reclamation Plan for the site should also be updated to include reclamation of Cell 1. The application states that the Hamlet is not recording the quantity of sewage that is being discharged into the lagoon. INAC recommends that this information be collected and reported in the annual report. The Hamlet identifies that the ideal volume of all cells occurs when the freeboard is only 0.5m. INAC would like to note that the freeboard limit contained within water licences is generally a minimum of 1.0m and INAC recommends that with respect to this application, the freeboard limit should remain at 1.0m. 	<p>SNP Station 1478-7 has been added.</p> <p>Part I and Part G</p> <p>Part B</p> <p>Part D</p>

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	<ul style="list-style-type: none"> • The Canadian Council for the Ministers of the Environment (CCME) recently signed a Canada-Wide Strategy (the Strategy) to regulate Municipal Wastewater Effluent (MWWEE) across Canada. Within this Strategy, a period of 5 years is allocated to identify National Performance Standards appropriate to remote or Northern conditions. The current treatment system operated by the Hamlet appears to have no problem meeting the new recommended requirements of 1000 CFU/100 ml, 40 mg/l BOD, and 30 mg/l TSS. Since no Northern Standards have been set by the CCME, INAC suggests that the above criteria may be appropriate for this application and assist [sic] in the development of northern performance standards. <p>INAC would also like to note that a Northern Research Working Group (NRWG) co-chaired by INAC and Environment Canada has been formed to facilitate understanding of municipal wastewater effluent and site conditions in the North by providing a communication forum and a technical base of expertise on Northern municipal wastewater issues.</p> <p>SOLID WASTE DISPOSAL</p> <ul style="list-style-type: none"> • A new solid waste facility is planned to be constructed in the near future. INAC recommends that a final Solid Waste Facility design be submitted to the Board for review and approval. The Plan should include where the site will be located and the environmental conditions at that location (substrate, drainage patterns, etc.), as well as how the site will be constructed and operated (monitoring, maintenance, etc.). <p>Once the Hamlet decides to decommission the current solid waste disposal site, it is recommended that a Closure and Reclamation Plan be submitted to the Board for review and approval as described in Part F, Section 1.</p>	<p>Criteria adopted in Part D.</p> <p>An amendment application would be required prior to construction.</p>

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	<p>• It is INAC's understanding that the Hamlet of Fort Liard has been storing hazardous materials onsite for an extended period of time and has not been regularly shipping these wastes for [sic] offsite for proper disposal. INAC would like to note the importance of proper disposal of Hazardous Wastes such as used oil, waste fuel and batteries. It is necessary to ensure the proper long term management and operation of the Hamlet's solid waste disposal facility, as well as prevent negative long term impacts to the environment.</p> <p>WATER LICENCE CONDITIONS</p> <p>In addition to the recommendations above, INAC would like to provide the following recommendations with respect to the terms and conditions to be placed within the water licence. If possible, INAC would appreciate the opportunity to review the draft water licence prior to issuance.</p> <ul style="list-style-type: none"> • Part B: General Conditions <p>Item 1 should also include the annual quantities of Sewage disposed in the Wastewater Treatment Facility.</p> <ul style="list-style-type: none"> • Part I: Spill Contingency Planning <p>Item 1 should refer to INAC's new "Guidelines for Spill Contingency Planning" April 2007.</p> <p>SURVEILLANCE NETWORK PROGRAM</p> <ul style="list-style-type: none"> • The application notes that in 2009, Cell 2 and 3 will be decanted and flow direction will be reversed. SNP Station 1478-4 and SNP Station 1478-5 should be relocated to reflect this change. 	<p>A Hazardous Waste Management Plan is required under Part D.</p> <p>Draft WL sent out for review on December 22, 2009.</p> <p>Recommendation included.</p> <p>Recommendation adopted.</p> <p>As per Environment Canada's comments dated January 19, 2101, a new SNP Station was added to reflect the current configuration and to maintain consistent records.</p>

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<p>Environment and Natural Resources, Government of the Northwest Territories, Patrick Clancy, Environmental Assessment Analyst</p>	<p>Excerpt from letter dated December 2, 2009</p> <p>Operations and Maintenance for New Facility Discussion</p> <p>Section 4.3 Solid Waste Disposal of the Project Description states:</p> <p>“Dillon Consulting Limited was retained by the Hamlet, to produce a 40-year conceptual design for a new landfill. This design has been presented to Council, and 3 possible sites were outlined. Council selected a site adjacent to the current landfill as a preferred option and is looking into re-zoning of this land. Dillon will be completing design of the new solid waste facility. Once complete, details will be forwarded onto the MVLWB for approval.”</p> <p><u>Recommendation</u></p> <p>The current WL should authorize Terms and Conditions for use only at the existing facility, as the current Project Description only references this facility. Operation and Maintenance requirements specific to any new facility should only be proposed and determined at such time that a new facility location and design are approved.</p>	<p>Recommendation adopted.</p> <p>SNP Station 1478-8 was added.</p> <p>Recommendation adopted.</p> <p>Comments forwarded to Applicant.</p> <p>An amendment application would be required to construct the new Solid Waste Facility.</p>

