Rhonda Miller - MVLWB

From: Lynn Boettger - MVLWB [lboettger@mvlwb.com]
Sent: July-13-11 4:56 PM
To: 'Rhonda Miller - MVLWB'
Subject: FW: Responses
Attachments: Town_of_Fort_Smith_Responses_to_Interventions_2011-07-13.xlsx

Rhonda – Please post ASAP. For File MV2011L3-0001 Town of For Smith Public hearing - Responses to Interventions

Thanks!
LB

From: Lindsay McIntyre [mailto:lmcintyre@fortsmith.ca]
Sent: Wednesday, July 13, 2011 4:42 PM
To: Lynn Boettger - MVLWB; Jean Soucy
Cc: Rebecca Chouinard; Kathy Racher; Kathleen Graham; zabey@mvlwb.com
Subject: RE: Responses

Attached in matrix format, if other format is required, please let us know.

From: Lynn Boettger - MVLWB [mailto:lboettger@mvlwb.com]
Sent: July-13-11 1:28 PM
To: 'Jean Soucy'; Lmcintyre@fortsmith.ca
Cc: 'Rebecca Chouinard'; 'Kathy Racher'; 'Kathleen Graham'; zabey@mvlwb.com
Subject: re: Responses

Hi Jean –

Can I please get your responses to Interventions....we need to get this material to the Board ASAP.

Thanks,
Lynn

Lynn Boettger
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#	REVIEWER	TOPIC	COMMENT	RECOMMENDATION	TOWN OF FORT SMITH RESPONSE
1	GNWT-ENR	Landfarming		Land farming contaminated soils is not included or applied for as a new activity in the current application, nor is it currently included in the Terms and Conditions of the current WL. ENR understands that the assessment and approval of such operations are outside the scope of this current process. However, information is provided that demonstrates additional contaminated soils have been and/or continue to be dumped at the former landfarm site. Hence, ENR recommends that the monitoring for petroleum indicators continue as a component of the sampling program.	If the landfarming area is currently in use or when the landfarm is used again, monitoring of petroleum hydrocarbon should be continued in the groundwater monitoring wells near the landfarm.
2	GNWT-ENR	Landfarming		ENR recommends that for the continued treatment of hydrocarbon contaminated soils at the Town of Fort Smith Landfill, the site be subject to additional screening, assessment, and authorization that may or may not be a future component/amendment of the current WL, or an activity applied for separately. ENR would provide its expertise to facilitate that process at that time.	If the landfarming area is currently in use or when the landfarm is used again, it should be maintained and operated according to the appropriate regulations
3	GNWT-ENR	Groundwater Monitoring		ENR recommends and the Town commits that a Water and Leachate Modelling and Monitoring Plan (the Plan) be developed for the landfill. The Plan should initially prioritize a study to delineate hydrogeological information at the site, including seasonal variations in the water table and groundwater inflow and outflow. Then, a revision of groundwater and surface water monitoring stations can be conducted, based on this information.	A Groundwater Monitoring Plan could be developed for the site that would include (but not limited to): - a hydrogeological description and interpretation of the site; - a map and description of surface water drainage patterns at the site; - maps showing depth to water table, patterns of groundwater movement and hydraulic gradients at the site; - a map showing the location of existing and additional proposed groundwater monitoring wells at the site and surface water sampling locations; - construction details of existing groundwater monitoring wells; - a description of groundwater monitoring well development protocols; - a list of parameters to be monitored and the monitoring frequency for each groundwater monitoring well and surface water sampling locations; - a description of the groundwater sampling and analytical QA/QC procedures; - a Groundwater Contingency Plan; - a risk basement for any identified groundwater contamination; - any other information relevant to groundwater quality at the site. From the data that AECOM has seen, there is little to no impact of leachate on the groundwater and surface water.
4	GNWT-ENR	Groundwater Monitoring		The suite of parameters for leachate monitoring should also be developed and validated. This suite could be developed either using a conceptual leachate generation model, from a sampling of the leachate within the SWF for an exhausting suite of analytes, or by paralleling a monitoring program from a modern landfill.	It is our understanding that there is currently not a leachate collection system in place (other than collecting surface water in the cell). It would be difficult, dangerous and costly to install a leachate collection system. Parameters currently tested were outlined by MVWLB with the current licence.
5	GNWT-ENR	Groundwater Monitoring		The uranium burial site at this landfill has created a permanent risk of contaminant contribution to leachate and subsequent groundwater contamination from the landfill. Monitoring parameters should include those that can detect whether this material is present in leachate and groundwater.	Comments regarding Uranium burial site will be provided by AECL in writing by no later than Friday.
6	GNWT-ENR	Groundwater Monitoring		The Water and Leachate Modelling and Monitoring Plan should also evaluate mitigative measures to divert water entering the solid waste site, and how these can be integrated into development and application of the recommended Interim Abandonment and Reclamation Plan, and its updated Operations and Maintenance Plan.	Surface water drainage patterns would be addressed in the Groundwater Monitoring Plan and could be evaluated to minimize surface water entering the solid waste site.
7	GNWT-ENR	Groundwater Monitoring		ENR recommends and the Town commits that the Plan be submitted to the MVLWB and technical experts for review and approval prior to implementation. ENR also recommends that a Technical Working Group (TWG) is established specifically for the purpose of providing aid to both the Town and to the MVLWB. At *[sic]* TWG would facilitate a coordinated approach to technical review and provision of expert advice on the development of this Plan, or other issues, on an ongoing basis for the duration of the Water Licence.	A technical review committee could be made up of the Town's consultant that would prepare the Groundwater Monitoring Plan and the regulatory authorities that would review the Plan. The consultant and authorities could provide technical advice for the duration of the Water Licence.
8	GNWT-ENR	Operations and Maintenance Plan	The purpose of an Operations and Maintenance (O&M) Plan is to assist community staff in the proper operation and maintenance of their waste facilities. The current O&M Plan for the solid waste disposal facility (SWDF) was completed in 2004 as part of the previous water licence renewal, and to ENR's knowledge, has not been revised since. The Guideline for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the Northwest Territories23, is endorsed by the Departments of Municipal and Community Affairs (MACA) and ENR, Government of the Northwest Territories. It provides specific advice in this regard, has been developed specifically for use in the NWT, and provides definitions, uses terminology, and instructs on common procedures that will provide all stakeholders certainty and clarity when discussing, planning for, and operating waste facilities. Also, for specific guidance on the development of an O&M Plan, consult the Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories.	a) ENR recommends that the Operations and Maintenance Plan is updated and submitted to the Board for approval. It should be noted that the water licence also requires an O&M Plan for the sewage waste disposal facility. b) The Town should also consult the Guideline for the Planning, Design, Operations and Maintenance of Modified Solid Waste Sites in the Northwest Territories and the Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories in developing this plan. c) The O&M Plan should consider integrating the following additional precautionary procedures: - Waste Reduction and Recovery methods, including measures to reduce the biodegradable organics entering the landfill. - Integrate progressive reclamation strategies on an ongoing basis. d) And, once this plan is developed, ENR recommends that it is made available to any staff, operators, and/or contractors performing any functions related to the management of the SWF, and that the Plan is followed.	As noted, the Town of Fort Smith has an existing operation and maintenance manual for the landfill operations. This manual was prepared with reference to the Guidelines for Planning Design, Operations and Maintenance of Modified Solid Waste Sites in the NWT, and in reference to the Guidelines for the Preparation of an operation and maintenance Manual for Sewage and Solid Waste Sites in the NWT. This documentation is reviewed by the Town on a periodic basis. The Town is interested in Waste Reduction and Recovery methods however, the Town's resources are limited to advance this initiative at this time. The Town fully supports and promotes the Territorial Government's deposit legislation.

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9	GNWT-ENR	Interim Abandonment and Reclamation	It is projected in the application supporting information that, based on the historical expansion rate at the landfill, it is expected the site will have sufficient capacity for the next 20 years and possibly beyond, and that preparation for landfill remediation following the closure of the active area will commence once the expansion has started. However information has not been provided that demonstrates how capacity has been determined. ENR understands that a Closure and Reclamation Plan (C&R Plan) for the current SWDF is not in place. The early stages in the development of a C&R Plan are critical steps in ensuring the community is thinking, preparing and planning for the facility's ultimate closure. This is very relevant in this case, as it has not been demonstrated that the lifespan and capacity of the landfill has been determined. There are three distinct steps, performed in the proper order, through the development of a Final C&R Plan: 1. Preliminary Closure and Reclamation Plan 2. Interim Closure and Reclamation Plan 3. Final Closure and Reclamation Plan	Although the current SWDF is expected to have a lifespan of at least another 20 years, ENR recommends that the Proponent prepare and submit an Interim Closure and Reclamation Plan for the current SWDF. This should be a working document that integrates progressive reclamation strategies, which in turn can be used in conjunction with the facilities Operation and Maintenance Plan. The development of interim abandonment and reclamation planning process will: - Enable the Town to begin discussion of options for the end use of the site (i.e. post abandonment and closure); - Help ensure that the development of progressive reclamation techniques (for example the ongoing construction and closure of solid waste cells) are consistent with or directed toward interim abandonment and reclamation planning; - Integrate leachate characterization and impact mitigation measures, and measures to reduce water infiltration to the landfill, into longer term reclamation and management decisions, operations, and costs.	The Town has no objections to engaging a Landfill Closure & Reclamation Plan. The current operation and maintenance plan has provisions for waste covering that are intended to reduce water infiltration into the landfill, and reduce contaminated runoff (leachate).
10	GNWT-ENR	Adaptive Management		ENR recommends and the Town commits to and submits in an annual report a comparison of annual quantities of solid waste accepted and generated, and compares this annual data to the projected lifespan of the SWF, and modify/update future projections and operations and maintenance requirements accordingly.	The Town of Fort Smith intends to include waste generation quantities as part of its future water licence submissions; the quantities will be based upon truck and vehicle counts.
11	GNWT-ENR	Hazardous Waste Management	Hazardous waste is generated by both the Industrial, Commercial, and Institutional (ICI) sectors as well as by residents. The plan does not clearly state the types of hazardous wastes that are accepted from the ICI sector and which are not. For example, hydrocarbon-contaminated soils, or asbestos may be accepted from the ICI sector where solvent, pesticides, corrosive liquids, etc. would not be accepted from the lCI sector and only from residents.	The Town of Fort Smith develop a comprehensive Hazardous Waste Management Plan that clearly states which materials will or will not be accepted at the solid waste facility, and from which sector, and includes details about the type of household hazardous waste collection. ENR's draft document titled Developing a Community Based Hazardous Waste Management Plan can be referenced for this purpose.	The Town of Fort Smith only accepts household hazardous waste as part of the current landfill operations, which is documented as part of the current operation and maintenance manual. The Town will refer to the ENR draft document on hazardous waste management for any future operation and maintenance document revisions. The household hazardous waste collection and management activities area separate from the landfarm activities, which are managed as a distinct waste stream
12	GNWT-ENR	Lagoon Sewage Sludge	The offsite disposal of sewage sludge originating from the primary treatment cells of the lagoon system, is not included as a Term and/or Condition in the existing WL, and is not applied for as a new activity in the current application. It is ENR's understanding that the disposal of this material offsite requires additional assessment and approval, and is currently outside the scope of this current process. However, this issue has come to ENR's attention through review of consultant reports provided with the application, and through discussion that has occurred at the Technical Session supporting the current review. ENR understands from these sources that the decanting and offsite disposal of sewage sludge originating from primary lagoon treatment cells is presently occurring or may occur in the future. Sewage sludge, particularly untreated and stabilized sludge, is a highly variable mixture of domestic sanitary waste that may also include other discharges from industrial, hospital, laboratory, road runoff, etc. It may contain toxic metals, antibiotic resistant bacteria, pesticides, priority pollutants, etc. ENR does not have any guidelines or standards for the use of and/or disposal of sewage sludge. Furthermore, this is an issue that is currently being reviewed at a national level by the Canadian Council of Ministers of the Environment (CCME) Biosolids Task Group, that has proposed the release of a national guideline for Fall 2011.	ENR understands the final use and/or disposal of dredged sewage sludge and its location, are currently not included in the Terms and Conditions of the current Water Licence, and it has not been applied for in the current Water Licence application. Hence, this issue is outside the scope of the current process and Water Licence. If the offsite disposal of dredged sewage sludge from the primary cells is proposed in the future, ENR recommends that this deposit and/or discharge of sewage waste is subject to additional screening, assessment, and authorization that may or may not be a future component/amendment of the current WL, or an activity applied for separately. ENR would provide its expertise to facilitate that process at that time.	The Town of Fort Smith has periodically removed, dried and composted sewage sludge from the primary cells of the sewage treatment system. The Town plans to include operation and maintenance documentation on this activity as part of an update to the operation and maintenance plan for the sewage lagoon.
13	GNWT-ENR	Technical Working Group		Given the complexity, related technical expertise, and costs required of evaluating the various components of the requirements of the Water Licence, ENR recommends that a Technical Working Group (TWG) is established. The purpose of the TWG is specifically for facilitating and providing a coordinated approach to technical review and provision of advice on an ongoing basis for the duration of the Water Licence. The TWG would benefit the Town of Fort Smith, the MVLWB, and the technical reviewers in the regulatory review phase of the Land and Water Board processes.	A technical working group for the water licence related activity separate from the Water Board regulatory stakeholders, may not be appropriate to the ongoing maintenance of the Town's new water licence because it may produce a degree of redundancy in the overall technical review process.

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14	Environment Canada	Effluent Quality Criteria	Effluent quality criteria are being reviewed under the lens of the Mackenzie Valley Land and Water Board's Water and Effluent Quality Management Policy, dated March 2011. At this point, neither the mixing zone boundaries, nor the Water Quality Standards for the receiving environment in question have been considered. The Fisheries Act, S. 36(3) prohibits the deposit, into fish-bearing waters, of substances that are deleterious to fish. One measure of a deleterious substance (such as a liquid discharge) is acute lethality as measured by the standard 96 hour fish bioassay test. Toxicity testing provides an evaluation of effluent quality that integrates all the measured parameters, their interactions and bioavailability, and provides the proponent with an indication of overall effluent characterization with respect to deleteriousness. The water quality data provided through the monthly sampling reports indicate a variance in the effluent quality from season to season. In order to ascertain whether toxic effluent is being deposited into the receiving environment throughout the year, quarterly bioassay sampling would be appropriate.	EC recommends that the Town of Fort Smith conduct an Acute Lethality Pass/Fail Bioassay Test for Rainbow Trout quarterly in accordance with the test method in EPS 1/RM/13 with 50% success rate. EC recommends including a condition in the water licence that the waste discharged shall not be acutely lethal, as determined through quarterly testing.	The AWG is the middle of its 5 year mandate to collect data on the performance of lagoons in the north in order to refine the CCME guidelines for the north, therefore any addition to the licence concerning the bioassay would be premature to the findings of the AWG, and the implementation of these findings. The Town currently conducts an acute lethality bioassay within the mixing zone of the sewage discharge on an annual basis, and this has been occurring for 6 years.
15	Environment Canada	Bioassay testing of effluent	The Town of Fort Smith has confirmed that bioassay samples for Acute Toxicity Testing are collected in the initial mixing zone of the river where the effluent is discharged. The standard for bioassay sampling of sewage discharge is to collect full-strength effluent before it mixes with the receiving environment. At the technical meeting it was confirmed that it would be possible to collect composite sample from within the culvert where monthly samples are collected.	EC recommends that all sampling for the sewage effluent at SNP 567-2, including bioassay samples, be collected from full-strength effluent before mixing with the receiving environment.	The Town has been conducting acute lethality bioassay within the mixing zone of the sewage discharge on an annual basis for past 6 years. This practice has been supported by local water resources officer and it is consistent with the 1992 Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories, which recognized the mixing zone as a component of the overall wastewater management system. The change of the sampling point for the acute lethality bioassay test to the Town's water licence would not be appropriate at this time because it would be inconsistent with the intent of the rollout of the CCME guidelines for municipal wastewater which is occurring in conjunction with the Arctic Working Group (AWG) of Environment Canada. The AWG is the middle of its 5 year mandate to collect data on the performance of lagoons in the north in order to refine the CCME guidelines for the north, therefore any addition to the licence concerning the bioassay would be premature to the findings of the AWG and the implementation of these findings.
16	Environment Canada	Sludge Management Plan	Lagoon operations should include removal and treatment of sewage sludge, which is said to occur every 5 years from the primary cells. If left unmanaged, the sludge build-up can reduce its treatment efficiency. 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 treatment. These details should be in place for all of the lagoon cells. Environment Canada recommends that prior to further sludge removal, the proponent submit for approval a Sewage Sludge Management Plan that clearly outlines the chemical composition of the sludge, including metals, nutrients and pathogens, and how sludge will be stored and treated. Final use or disposal method and location would be subject to additional assessment, planning and authorization that may be beyond the scope of the current licence.	EC recommends that Fort Smith develop a Sludge Management Plan that includes, but is not limited to, operational practices of sludge level measurement and monitoring methods, sludge removal, location of sludge storage and sludge treatment. The sludge management information can be contained within the Sewage Facility Operation and Maintenance Plan that the Town of Fort Smith committed to preparing and submitting to the Board for approval.	The Town of Fort Smith has periodically removed, dried and composted sewage sludge from the primary cells of the sewage treatment system. The Town plans to include operation and maintenance documentation on this activity as part of an update to the operation and maintenance plan for the sewage lagoon
17	Environment Canada	Solid Waste Disposal Facility	Under the SNP Appendix of the Water Licence, Section B. "Sampling and Analysis Requirements" requires sampling for total metal concentrations for Station Numbers 567-4 & 567-5. However, as noted in the AECOM Report (May, 2011) under Section 5.2 (i.e. Recommendations, pg 7) it states, "Because the Licence requires that total metals in the groundwater samples be analyzed but only dissolved metals analysis has been conducted, the Town should specify this to the consultant providing the groundwater monitoring service for future events". Based on this report, it appears the Proponent may not be fully following the terms and conditions of the Water Licence with respect to SNP groundwater sampling and reporting for total metals (i.e. Station Numbers 567-4 & 567- 5). In addition, groundwater guidelines should be applied where applicable. For example, for the purposes of evaluating the groundwater monitoring program between 2006-2010,both CCME Guidelines for the Protection of Aquatic Life (CCME, Dec/10) and Guidelines for Canadian Drinking Water Quality (Health Canada, Dec/07) were used to compare with laboratory analytical results which may not always be appropriate benchmarks for which to compare groundwater concentrations.	Federal Interim Groundwater Quality Guidelines (Federal Contaminated Sites Action Plan, May 2010) were recently developed to assist Federal Custodians in managing federal contaminated sites as an interim measure until Canadian groundwater quality guidelines are available. These Guidelines, which are based on a tiered approach, have generally been developed using methods consistent with nationally approved protocols published by CCME. Therefore, EC recommends that the Federal Interim Groundwater Quality Guidelines (May, 2010) be applied when assessing SNP groundwater monitoring samples at this site. In addition, two other sets of guidelines may be relevant for groundwater at this site: 1. Guidelines for Canadian Drinking Water Quality (Health Canada, 2008) a. It is recommended that these guidelines be used when investigating groundwater that could be used as a potable water source. 2. Canadian Water Quality Guidelines for the Protection of Aquatic Life a. It is recommended that these guidelines be applied to the receiving water body, groundwater within 10m (i.e. high water mark) of a surface water body, and to the groundwater-surface water transition zone (i.e. porewater in sediment in the transition zone).	The determination of dissolved metals for groundwater is common practice in other jurisdictions. Alberta Environment's Standards for Landfills in Alberta (February, 2010) requires that the groundwater monitoring programs for landfills in Alberta test for dissolved metals (Table 5.2 in Section 5.2). This same standard states in Section 5.2(a)(ii) that a groundwater monitoring program should: "establish groundwater quality control limits for each naturally occurring parameter;" There are a number of parameters that currently indicate a concentration above the criteria for the Federal Interim Groundwater Quality Guidelines and CCME aquatic life. Some of these exceedances can be found in all of the wells at the site including the background wells. Where the background wells have parameters that exceed the guideline, it is recommended that new performance standards be developed using a statistical analysis of the historical data. This analysis will find a value that is "statistically significantly" higher that the background, natural value for each parameter. The determination of dissolved metals for groundwater is common practice in other jurisdictions. Alberta Environment's *Standards for Landfills in Alberta* (February, 2010) requires that the groundwater monitoring programs for landfills in Alberta test for dissolved metals (Table 5.2 in Section 5.2). The current parameters tested were determined by MVWLB with the current licence.
18	Environment Canada	Groundwater Contingency Plan	Currently, groundwater sampling data suggests that metals, at elevated concentration levels, may be leaching from the landfill towards an adjacent stream that leads in the general direction of the Slave River. It is unknown as to what current measures are in place to minimize migration of detected elevated contaminants from the landfill site to the receiving environment. It should be noted that there is no Groundwater Contingency Plan currently in place to address the action required when elevated exceedances are detected via the monitoring program.	EC recommends that a Groundwater Contingency Plan be included as a requirement under the terms and conditions of the Water Licence. The Plan should outline in detail the corrective action required whenever contaminants in the groundwater exceed applicable guideline criteria.	As indicated in response #17 above, exceedances for metals above the Federal and CCME guidelines have been observed downgradient of the landfill, upgradient of the landfill (and downgradient of the landfarm cell) as well as upgradient of the land farm cell and landfill. Due to the presence of metals across the site at similar concentrations, there is no evidence to indicate that leachate containing elevated metals is migrating down gradient of the landfill cell. Preparation of a contingency plan is common industry practice for operating facilities and landfills. A plan summarizing the corrective actions that should be addressed in the event that contaminants in groundwater exceed the applicable regulations could be developed for the Fort Smith landfill site
19	Environment Canada	Upgradient Surface Water Location	The AECOM Report (May, 2011) indicates that in 2008, IEG Consultants Ltd. recommended that an upgradient and down-gradient surface water sample should be collected, and therefore, two surface water samples were collected 2009 and 2010. Figure 3 of the AECOM Report (May, 2011) illustrates the approximate location of the up-gradient location which is still potentially down-gradient of possible contaminant migration from the landfill based on the general direction of near surface groundwater flow and surface run-off.	EC recommends that the up-gradient surface water sampling station be located further upstream (as a reference/control point) to avoid any possible influence from potential contamination migrating from the landfill.	The current upgradient surface water sampling location is potentially upgradient (or sidegradient) to the municipal waste landfill, but could be downgradient of the metals area and construction and demolition waste area. Since a surface water samplemay not be able to be taken upgradient of all the on-site activities, the Town doesn't object to exploring options of determining a sufficient upgradient sample location.

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20	Environment Canada	Natural Background Levels of Metals around Solid Waste Facility	Given the potential for elevated levels of metals in the vicinity of the Solid Waste Facility (i.e. primarily arsenic), it is important to identify the natural level before analysing the impact of drainage from the landfill in order to distinguish between the two. In our initial comment letter dated May 27th 2011, EC recommended that an investigation into the source of the metals should be undertaken, as until it can be shown that the high levels of metals present in drainage from the Solid Waste Facility are due to elevated background levels, these results remain a concern. Elevated metals in the site drainage have been documented, and the source needs to be identified and further action taken if warranted.	EC recommends that the Proponent characterize background site conditions with respect to metals in the vicinity of the Solid Waste Facility, and propose appropriate criteria. In addition, consideration must be given to remedies should the source of elevated metals be the landfill.	The natural levels of metals in the groundwater has been determined by the background monitoring wells. The source of the metals concentration in the background wells could be naturally occurring. If the source of the metal concentrations is not the landfill (as the background wells suggest), the source does not need to be determined.
21	Environment Canada	Interim Closure and Reclamation Plan	Currently, Part F under the Water Licence requires an approved "Abandonment and Restoration Plan" at least six months prior to abandoning any waste disposal facility. Closure and Reclamation Plans are prepared as conceptual (i.e. preliminary), interim, and final depending on which phase the facility is at, i.e. pre-project, operational or closure. Given that the facility is currently in its operational phase, having an Interim C&R Plan in place can assist with stakeholder involvement that is proactive (as opposed to reactive) in the establishment of closure objectives and remedial criteria. The Interim Plan can also ensure modification of operations take place as necessary to reduce risks to closure objectives, ensure and promote progressive rehabilitation when applicable and be in place for any unexpected closures.	EC recommends that the title of the "Abandonment and Restoration Plan" in the Water Licence under Part F be updated to "Closure and Reclamation Plan" to be consistent with current terminology. In addition, EC supports ENR's recommendation to require the Proponent to submit an Interim Closure and Reclamation Plan for the Solid Waste Disposal Facility that is approved by the Board.	The Town of Fort Smith has no objections to the rewording of the title of Abandonment and Restoration plan nor to completing afore mentioned C & R Plan.
22	Environment Canada	Sewage O&M Plan	The previous water licence, MV2003L2-0006 Part H stipulated that Operation and Maintenance of the Sewage and Solid Waste Disposal Facilities be updated and submitted for approval. The town did submit an O&M plan for the Solid Waste Disposal Facility but not for Sewage Disposal. The presence of a Sewage System Operations and Maintenance Plan is an important tool for operators, and for consistent and efficient operation, as well as to enable reviewers the opportunity to comment on the procedures being utilized at the facility.	An Operations and Maintenance Manual should be developed for the wastewater system and distributed for review, preferably within the first 12 months following issuance of the new licence. Following the initial submission, the Operations and Maintenance Manual should be reviewed and updated annually, with changes filed with the Board in the Annual Report. If annual updates are not submitted for approval by the Board, there should be a requirement for re-submission of the plan for approval in the event there are significant changes.	The Town of Fort Smith has an existing operation and maintenance manual for the landfill operations. This manual was prepared with reference to the Guidelines for Planning Design, Operations and Maintenance of Modified Solid Waste Sites in the NWT, and in reference to the Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Sites in the NWT. This documentation is reviewed by the Town on a periodic basis.
23	Environment Canada	WL Term	The Proponent is requesting a 15 year licence term within their application. EC does not support this length of licence. While the Proponent has shown progress on the requirements of the existing licence, a number of submissions and/or actions were carried out well past the due dates with recommended actions not yet implemented. There will be a number of action items as requirements in the renewal licence, and the renewal process provides a good opportunity for performance review and licence amendments to update and reflect changes in operating conditions.	EC recommends a licence term of no longer than ten years.	Given the attention that the Town has given to its water and sewer infrastructure, particularly during crisis situations such as the embankment collapse which destroyed the sewage lagoon discharge pipeline, the Town of Fort Smith may be entitled to a water licence term greater than 10 years. The Town has also been proactive with its water and sewer infrastructure, for example the water treatment plant improvements and the intake pumphouse and intake pipeline improvements as well as water and sewer main upgrades. Even with a fifteen year license, reviews of the operating conditions, amendments and performance can still be done regularly without having to renew the license.
24	Aboriginal Affairs and Northern Development	Annual Reporting	AANDC believes that the following recommendations will provide greater clarity to the Town and reviewers in understanding the state of engineered structures, operations and quality testing results covered under the Town of Fort Smith's water licence. Part B, Section 1 l) describes that the Annual Report is also to include results of sampling and testing of the Groundwater Monitoring Wells at the landfill.	Aboriginal Affairs and Northern Development Canada recommends that the following also be reported in the Town's Annual Report, under Part B: - results of any inspections of all dams, berms, dykes, and control structures; - updates or revisions to snow disposal locations; - updates or revisions to the operations and maintenance plan; - sludge management details and sampling results; comparisons of the Surveillance Network Program data to the water licence regulated limits and sample and analysis requirements.	The Town of Fort Smith has no objections to the reporting requests concerning, inspections, snow disposal, operation and maintenance documentation updates, and sludge management.
25	Aboriginal Affairs and Northern Development	Annual Reporting		Aboriginal Affairs and Northern Development Canada recommends that all sampling results of leachate form the Hydrocarbon Landfarm Treatment Facility be reported within the Water Licence Annual Report.	The Town of Fort Smith has not objections to the reporting requests concerning the sampling results of landfill runoff (leachate).
26	Aboriginal Affairs and Northern Development	Annual Reporting		Aboriginal Affairs and Northern Development Canada recommends that Part B, Section 1 l) be updated to include " The results of sampling and testing of the Groundwater Monitoring Wells at the landfill, as modified and approved by the Board on September 27th, 2006; or as per future sampling regime to be approved by the Board".	The Town of Fort Smith requests that the groundwater monitoring to be included in Part B, Section 1, be modified to reflect the recommendations in the 2011 AECOM report. This Town has no objections to the reporting requests concerning the sampling results recommended in the 2011 AECOM report.
27	Aboriginal Affairs and Northern Development	Sewage Disposal Facilities	AANDC believes that the following recommendation will provide clarity within the water licence with respect to Terms and Conditions applying to the Town of Fort Smith's sewage treatment facilities.	Aboriginal Affairs and Northern Development Canada recommends that the Operations and Maintenance Plan include a sub section on Sludge Removal and Management. This could be included within the Sewage Disposal Facility Section.	The Town of Fort Smith has periodically removed, dried and composed sewage sludge from the primary cells of the sewage treatment system. The Town plans to include operation and maintenance documentation on this activity as part of an update to the operation and maintenance plan for the sewage lagoon
28	Aboriginal Affairs and Northern Development	Sewage Lagoon Maintenance	The Town of Fort Smith Sludge Management Practices consists of removal of the sludge from its lagoon on average every 5 years. Information provided at the technical session held on June 15, 2011, stated that after being removed, the sludge was then transferred to a drying bed where it is allowed to dry for a period of approximately 2 years. The resulting material has been donated and collected by the local golf course. AANDC understands that this material is tested for regular bacteria analysis such as Fecal coliforms.	Aboriginal Affairs and Northern Development Canada recommends that all sewage lagoon treated sludge used for municipal purposes meet CCME Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (Residential/Parkland).	The Town of Fort Smith has not objections to the provision for treated sewage sludge to meet the CCME guidelines, and can assure the Board that the sludge is not used for municipal purposes.
29	Aboriginal Affairs and Northern Development	Snow Disposal Locations	The Town of Fort Smith has provided their Snow Disposal Locations to the Board. AANDC recommends that these locations be reviewed yearly and any revisions be identified in the Annual Report. Future locations should be selected following Best Practices for Snow Disposal (2006 City of Yellowknife Disposal Siting Study, Dillon Consulting Limited) namely the avoidance of locations within or near the Town's Municipal Landfill to reduce contaminated runoff generation, or within 200 meters of any water body.	Aboriginal Affairs and Northern Development Canada recommends that a condition applying to Waste Disposal be added under Part D of the Water Licence, stating that provided Snow Disposal Location and associated coordinates be reviewed annually; and that any changes in these locations shall be identified in the Annual Report.	The Town has no objections to the request to update and report the location and associated coordinates of the snow disposal site as part of the Annual Report. The Town currently has 2 locations used for snow removal. Site one is on the south east section adjacent to the lagoon, and site two is on the east side of NTPC lot. Site one will not be required as site two has adequate storage for all snow disposal.
30	Aboriginal Affairs and Northern Development	Snow Disposal Locations		Aboriginal Affairs and Northern Development Canada recommends that future snow disposal locations reflect Best Practices for Snow Disposal (2006 City if Yellowknife Disposal Siting Study, Dillon Consulting Limited), namely the avoidance of location within or near the Town's Municipal Landfill, or within 200 metres of any water body.	The Town of Fort Smith will review the Best Practices for Snow Disposal (2006 City of Yellowknife) and adopt provisions which may be appropriate to the scope of the snow disposal operations in Fort Smith. It should be recognized that because of the difference in size of the communities, and the unique climatic , geologic, and geographic characteristics of Fort Smith, the Yellowknife document may have limited application.

#	REVIEWER	TOPIC	COMMENT	RECOMMENDATION	TOWN OF FORT SMITH RESPONSE
31	Aboriginal Affairs and Northern Development		The Town has provided the Board with a Fuel Spill Contingency Plan which includes spill contingency information for a 25,000 litre fuel tank. Under the NWT Waters Act (sec. 6g (i) and the NWT Waters Regulations, all operations requiring a licence for water use and waste disposal must prepare a Spill Contingency Plan (SCP). In a Municipal Water Licence context, operations covered under the water licence include the Water Treatment Plant, Landfill and Sewage Lagoon facilities. Therefore, the Town's SCP should also include spill contingency measures for any other hazardous materials used or stored at their licenced facilities. The response measures should be specific to each facility to enable prompt action and effective response to a spill and better support employees in a potential emergency situation. Components of a SCP include: response organization, initial actions, spill reporting, containing and cleaning, transferring and managing wastes, restoration of affected areas, etc. As a guiding tool, AANDC recommends that the Town refer to the AANDC Guidelines for Spill Contingency Planning, released in April 2007. The guidelines are intended to help minimize the impacts of spills of petroleum products and other hazardous materials by establishing a predetermined line of response and action plan. A hard copy of the Guidelines was provided to the Town of Fort Smith during the technical session held on June 15, 2011. These Guidelines are available online at http://nwt-tno.AANDC-ainc.gc.ca/wrd-gl_e.htm and additional copies can be obtained from the Water Resources Division by contacting Jeanette Hernberg at 867-669-2564, or eanette.Hernberg@inac.gc.ca.	Aboriginal Affairs and Northern Development Canada recommends that Condition 1, Part I should refer to AANDC's "Guidelines for Spill contingency Planning" April 2007.	The Town of Fort Smith has no objections to the requirement for spill contingency plans for all of the Town's hazardous materials
32	Aboriginal Affairs and Northern Development	Operations and Maintenance Plan	Currently, there exists a requirement for the Town's Operations and Maintenance (O&M) Plan for Sewage and Solid Waste Disposal Facilities to be reviewed on a yearly basis. The MVLWB is to be advised of amendments made to the O&M Plan, if any.	Aboriginal Affairs and Northern Development Canada recommends that Part H, Section 3 reads as follows: " The licensee shall annually review the updated Operations and Maintenance Plan and shall modify the plan to reflect changes in operations and technology and the results of research and other studies. All proposed updates or revisions to the plan shall be submitted to the Board for approval and included as an update in the Annual Report."	The Town of Fort Smith has not objections to the requirement for an annual review and update of the operation and maintenance documentation and the reporting on the review and update
33	Aboriginal Affairs and Northern Development	Operations and Maintenance Plan		Aboriginal Affairs and Northern Development Canada recommends the Operations and Maintenance plan for Sewage and Solid Waste Disposal Facilities to be completed according to the Government of Northwest Territories, Municipal and Community Affairs 1996 "Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories."	The Town of Fort Smith has an existing operation and maintenance manual for the sewage lagoon operations. This manual was prepared with reference to the Guidelines for the Preparation of an operation and maintenance Manual for Sewage and Solid Waste Sites in the NWT. This documentation is reviewed by the Town on a periodic basis.
34	Aboriginal Affairs and Northern Development	Operations and Maintenance Plan		Aboriginal Affairs and Northern Development Canada recommends that Part H: Conditions Applying to Operation and Maintenance be updated to include a map depicting all existing (and/or planned) Surveillance Network Program including the latitude and longitude of each location, as well as a copy of the Water Licence.	The Town of Fort Smith has not objections for the inclusion of a map showing the location and geographic coordinates of the SNP stations
35	Aboriginal Affairs and Northern Development	SNP Sampling - CBOD Analysis	The Town currently tests for BOD5 at SNP 567-2. Currently, the CCME Municipal Wastewater Strategy for the Treatment of Municipal Wastewater Effluent uses CBOD as an indicator of the quality of municipal wastewater. AANDC recommends that both parameters be sampled for a specified period of time within the renewed water licence. This would maintain the existing long-term BOD5 dataset collected by the Town, and also provide a period of overlap with CBOD analysis. The period of overlap will provide time to identify any relationship between BOD5 and CBOD while moving the Town towards compliance with the upcoming CCME requirements. AANDC believes CBOD and BOD should be tested for a minimum of 3 years in order to achieve such a relationship. After 3 years, it is recommended that the Town provide a trend analysis of the data collected for review and approval by the Board. At that time, the sampling requirements could be revisited.	AANDC Recommends that CBOD be added to the list of parameters sampled at SNP 567-2 in Part B, Section 1 of the SNP section of the current water licence, for a minimum period of 3 years. After the 3 year period, the Town should provide a trend analysis to the Board for review and approval, and sampling requirements should be revisited.	The Town of Fort Smith has not objections for the addition of CBOD as a sample parameter for SNP 567-2
36	Aboriginal Affairs and Northern Development	Effluent Quality Criteria	On July 6, 2011, AANDC received the document prepared by Golder & Associates relating to the development of Effluent Quality Criteria for the Town of Fort Smith's Municipal Discharge. AANDC has not critically reviewed this document. To this end, no recommendations with respect to EQC's for municipal wastewater, other than recommendation #12, are included within this intervention. AANDC will review this document and be prepared to speak to this issue at the upcoming public hearing, should public hearing be held		

#	REVIEWER	TOPIC	COMMENT	RECOMMENDATION	TOWN OF FORT SMITH RESPONSE
37	Aboriginal Affairs and Northern Development	Groundwater Monitoring - SNP 567-5	The Town of Fort Smith should develop and submit a Groundwater Monitoring and Protection Plan identifying any risks to the environment or human health posed by the existing groundwater impacts, identifying whether the level of existing contamination requires remediation and identifying measures that will be implemented to prevent further impacts to the groundwater.	Aboriginal Affairs and Northern Development Canada recommends that the Town of Fort Smith should submit a Groundwater Monitoring and Protection Plan which includes the following: • Groundwater monitoring locations • Parameters sampled and sampling frequency • Comparisons of results to applicable standards • Evaluation of risks to potential receptors • If necessary, evaluation of any remedial or preventative measures required.	A Groundwater Monitoring Plan may be developed for the site has outlined in response #3
38	Aboriginal Affairs and Northern Development	Hazardous Waste Management	During the Technical session hosted on June 15, 2011, The Town recognized the need for hazardous waste to be better managed at the SWDF. The development of a Hazardous Waste Management will enable the Town to better understand its role and responsibilities in accepting/refusing hazardous waste at its SWDF.	Aboriginal Affairs and Northern Development Canada recommends that Part H: Conditions Applying to Operation and Maintenance be updated to include an Hazardous Waste Management Plan. This Plan should be completed according to GNWT ENR 2009 – Developing a Community Hazardous Waste Management Plan.	The Town should have a Hazardous Waste Management Plan
39	Aboriginal Affairs and Northern Development	Landfarm Treatment Facility	At the June technical sessions held by the MVLWB, it was indicated by the Town that they had no plan to start a new business using the landfarm, but that the facility was still available for soil treatment. The Town clarified that they had no plans to expand their hazardous waste landfarm; but that should there be a spill or a need for it, then they would want to be ready. AANDC would like to clarify that the operation of a contaminated soil treatment facility, even on a temporary basis, will impose further responsibilities on the Town of Fort Smith with respect to planning (O&M Plan) monitoring (facility leachate monitoring) and reporting (sampling results to be reported in Annual Report). Therefore, new conditions should be added to the Town's water licence to ensure the Town is carrying out the necessary steps to prevent contaminated leachate from the Landfarm Soil Treatment Facility. AANDC recommends that the Town update its Operation and Maintenance Manual to include operations from the Hydrocarbon Landfarm Treatment Facility. The Plan should include how the Town is operating and managing its Landfarm facility, the yearly maximum treatment capacity, how leachate will be tested and analyzed, how results will be reported, and how leachate will be discharged or stored. AANDC also recommends that all sampling results of leachate from the Hydrocarbon Landfarm Treatment Facility be reported within the Water Licence Annual Report	AANDC recommends that the Town update its Operation and Maintenance Manual to include operations from the Hydrocarbon Landfarm Treatment Facility. The Plan should include how leachate will be tested and analyzed, how results will be reported, and how leachate will be discharged or stored.	If the landfarming area is currently in use or when the landfarm is used again, monitoring of the leachate should be included in the Groundwater Monitoring Plan
40	Aboriginal Affairs and Northern Development	Landfarm Treatment Facility		AANDC recommends that all sampling results of leachate from the Hydrocarbon Landfarm Treatment Facility be reported within the Water Licence Annual Report.	If the landfarming area is currently in use or when the landfarm is used again, the results of monitoring the leachate should be reported in the annual report
41	NSMA		With respect to the above noted application, the NSMA does not have sufficient funding or qualified staff to read and evaluate the information available on the public registry, to meet with the proponents, to visit and inspect the site, to solicit input from the community, or to review our archival information. We therefore cannot contribute our traditional knowledge or formulate our community's views, and we can also not assess the likelihood that the quality, quantity or rate of flow of the Slave River, Great Slave Lake or any other surface or groundwater's that flow onto or under our lands, may be impacted or whether our use of our traditional waters will be interfered with. As a result, we must regretfully inform you that there has NOT been adequate Crown Consultation with respect to this application, and appropriate compensation for interference with our existing water rights has been neither agreed to nor paid.		