

From: [Lindsay McIntyre](#)
To: [Angela Love - MVLWB](#)
Cc: [jsoucy@fortsmith.ca](#); [bblack@fortsmith.ca](#)
Subject: RE: Draft Water Licence for the Town of Fort Smith
Date: Tuesday, September 06, 2011 3:41:38 PM
Attachments: [image001.png](#)
[MV2011L3-0001 - Conditions TABLE DRAFT comments.docx](#)

Hi Angela,

Please find attached our comments (minimal) for the draft license.

Lindsay McIntyre, GISP

Director of Municipal Services

Town of Fort Smith

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lmcintyre@fortsmith.ca

From: Angela Love - MVLWB [mailto:reg_officer@mvlwb.com]

Sent: August-11-11 10:25 AM

To: screeningofficer@eastarm.com; scellis@eastarm.com; jbrennan@yellowknife.ca; rlong@yellowknife.ca; imandeville@denenation.com; carolc.lands@gmail.com; imadenegurl@hotmail.com; 'Walbourne, Rick'; sao_enterprise@northwestel.net; ec.ea.nwt@ec.gc.ca; frmc53@yahoo.ca; fortsmithmetisCouncil@northwestel.net; Gnwt_ea@gov.nt.ca; 'Rhonda Batchelor'; Patrick_Clancy@gov.nt.ca; Duane_Fleming@gov.nt.ca; K_Johnson@gov.nt.ca; Mark_Davy@gov.nt.ca; Glen_Mackay@gov.nt.ca; hmc@northwestel.net; intergov@inac-ainc.gc.ca; norrisa@inac.gc.ca; consultationsupportunit@inac.gc.ca; james.lawrance@inac.gc.ca; Lorraine.Seale@inac-ainc.gc.ca; 'Michael Martin'; Charlene.Coe@inac-ainc.gc.ca; Robert.Jenkins@inac.gc.ca; cau-uca@iaadnc-aandc.gc.ca; landsnresources@katlodeeche.com; doraenzoe@yahoo.ca; Lkdfn_lands@yahoo.com; vchristensen@reviewboard.ca; lands@nsma.net; Matthew.Spence@cannor.gc.ca; Kate.Witherly@cannor.gc.ca; ima.nwtmn@northwestel.net; lmcintyre@fortsmith.ca; jsoucy@fortsmith.ca; ceo@srfn195.com; bblack@fortsmith.ca; mrichardson@hayriver.com; SusanA@wcb.nt.ca; wfn@northwestel.net; environment@ykdene.com; esangris@ykdene.com; ttsetta@ykdene.com

Cc: 'Amanda Gauthier - MVLWB'; 'Kathy Racher - WLWB'; 'John Donihee'

Subject: Draft Water Licence for the Town of Fort Smith

Good Afternoon All,

Please find attached a copy of the draft Water Licence for the Town of Fort Smith for your perusal and comment. Please note that comments are due on September 6, 2011 by 5 pm.

If you have any questions regarding the draft Water Licence, please contact me.

Thank you for your attention to this matter.

Regards,
Angela

Angela Love

Regulatory Officer

Mackenzie Valley Land and Water Board

7th Floor, 4922 48th St, PO Box 2130 | Yellowknife, NT | X1A 2P6

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WATER LICENCE MV2011L3-0001	REVIEW COMMENT	RECOMMENDATION
Part A: Scope and Definitions		
Scope		
A.1 This Licence entitles Town of Fort Smith to use Water and dispose of Waste for municipal undertakings at The Town of Fort Smith, Latitude 60°00'N and Longitude 111°53'00" W, Northwest Territories.		
A.2 This Licence is issued subject to the conditions contained herein with respect to the taking of Water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the <i>Northwest Territories Waters Act</i> , or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform to such Regulations.		
A.3 Compliance with the terms and conditions of this Licence does not absolve the Licensee from the responsibility for compliance with the requirements of all applicable federal, territorial, and municipal legislation.		
Definitions		
In this Licence, MV2011L3-0001:		
“ Act ” means the <i>Northwest Territories Waters Act</i> .		
“ Analyst ” means an Analyst designated by the Minister under subsection 35(1) of the Act.		
“ Average Concentration ” means the discrete average of four consecutive analytical results, or if less than four, the analytical results collected during a batch decant and as submitted to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.		
“ Average Concentration for Faecal Coliforms ” means the running geometric mean of any four consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.		
“ Biotreatment Pad ” means the area and associated engineered infrastructure designed to contain and treat hydrocarbon contaminated soils.		
“ Board ” means the Mackenzie Valley Land and Water Board established under Part 4 of the <i>Mackenzie Valley Resource Management Act</i> .		
“ Freeboard ” means the vertical distance between the Water line and the lowest elevation of the effective Water containment crest on a dam or dyke’s upstream slope.		
“ Engineer ” means a professional Engineer registered to practice in the Northwest Territories in accordance with the <i>Engineering and Geoscience Professions Act</i> , S.N.W.T. 2006, c.16 with the expertise to address specific components of the project.		
“ Greywater ” means all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities but does not include Toilet Wastes.		
“ Inspector ” means an Inspector designated by the Minister under subsection 35(1) of the		

Act.		
“ Licensee ” means the holder of this Licence.		
“ Minister ” means the Minister of Aboriginal Affairs and Northern Development Canada.		
“ Modification ” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work but does not include an expansion.		
“ Regulations ” means Regulations proclaimed pursuant to section 33 of the <i>Northwest Territories Waters Act</i> .		
“ Sewage ” means all Toilet Wastes and Greywater.		
“ Sewage Disposal Facilities ” comprises the area and engineered structures designed to contain Sewage as identified in “Figure 6 – Site Plan Showing Sewage Lagoons and Discharge Pipeline” dated January 2011 in the Fort Smith Water Licence Background Report Volume 1.		
“ Solid Waste Disposal Facilities ” comprises the area and associated structures designed to contain solid Wastes as identified in “Figure 7 – Plan Showing Solid Waste Facility” dated January 2011 in the Fort Smith Water Licence Background Report Volume 1.		
“ Toilet Wastes ” means all human excreta and associated products but does not include Greywater.		
“ Waste(s) ” means Waste as defined by section 2 of the Act.		
“ Waste Disposal Facilities ” mean all facilities designated for the disposal of Waste and includes the Solid Waste Disposal Facilities and Sewage Disposal Facilities.		
“ Water(s) ” means any Waters as defined by section 2 of the Act.		
“ Water Supply Facilities ” comprises the area and associated intake infrastructure as identified in “Figure 3 – Site Plan Showing Intake Pumphouse” dated January 2011 in the Fort Smith Water Licence Background Report Volume 1.		
“ Water Use Fee ” means a fee for the use of Water as defined by section 33 of the <i>Northwest Territories Waters Act</i> .		
Part B: General Conditions		
B.1 The Licensee shall file an annual report with the Board not later than March 31 of the year following the calendar year reported which shall contain the information as set out in Schedule 1, Item 1 as attached to this Licence.		
B.2 The Licensee shall comply with the Surveillance Network Program annexed to this Licence and any amendment to the said Surveillance Network Program as may be made from time to time pursuant to the conditions of this Licence.		
B.3 The Licensee shall comply with the terms of any plans approved pursuant to the conditions of this Licence and with any amendments to the plans as may be made from time to time pursuant to the conditions of this Licence and as approved by the Board.		
B.4 The Surveillance Network Program and compliance dates specified in the Licence may be modified at the discretion of the Board.		
B.5 Meters, devices, or other methods used for measuring the volumes of Water used and Waste discharged shall be installed, operated, and maintained by the Licensee to the satisfaction of an Inspector.		
B.6 The Licensee shall, within sixty (60) days of the issuance of this Licence, post the		

	necessary signs, where possible, to identify the station(s) of the Surveillance Network Program. All postings shall be located and maintained to the satisfaction of an Inspector.												
B.7	The Licensee shall, within sixty (60) days of issuance of this Licence, post signs in the appropriate areas to inform the public of Water Supply and Waste Disposal Facilities. All postings shall be located and maintained to the satisfaction of an Inspector.												
B.8	The Licensee shall immediately report to the 24-hour Spill Report Line (867) 920-8130 any spills of Waste which are reported to or observed by the Licensee within the municipal boundaries or in the areas of the Water supply or Waste Disposal Facilities.												
B.9	The Licensee shall ensure a copy of this Licence is maintained at the municipal office at all times.												
Part C: Conditions Applying to Water Use													
C.1.	The Licensee shall obtain all Water from the Slave River using the Water Supply Facilities or as otherwise approved by the Board.												
C.2.	The annual quantity of Water used for all purposes shall not exceed 600,000 cubic metres per year.												
C.3.	The Water intake hose used on the Water pumps shall be equipped with a screen having a mesh size in accordance with the Department of Fisheries and Oceans Guidelines.												
Part D: Conditions Applying to Waste Disposal													
D.1.	The Licensee shall discharge all Sewage to the approved Sewage Disposal Facilities or as otherwise approved by the Board.												
D.2.	All Waste discharged from the Sewage Disposal Facilities shall not exceed the following effluent quality standards: <table border="1" data-bbox="400 1185 1100 1403"> <thead> <tr> <th>Parameter</th> <th>Maximum Average Concentration</th> </tr> </thead> <tbody> <tr> <td>Suspended Solids</td> <td>200 mg/L</td> </tr> <tr> <td>BOD₅</td> <td>300 mg/L</td> </tr> <tr> <td>Faecal Coliforms (FC)</td> <td>1 x 10⁶ CFU/100mL</td> </tr> <tr> <td>Oil and Grease</td> <td>No visible sheen</td> </tr> </tbody> </table> <p>The Waste discharged shall have a pH between 6 and 9.</p>	Parameter	Maximum Average Concentration	Suspended Solids	200 mg/L	BOD ₅	300 mg/L	Faecal Coliforms (FC)	1 x 10 ⁶ CFU/100mL	Oil and Grease	No visible sheen		
Parameter	Maximum Average Concentration												
Suspended Solids	200 mg/L												
BOD ₅	300 mg/L												
Faecal Coliforms (FC)	1 x 10 ⁶ CFU/100mL												
Oil and Grease	No visible sheen												
D.3.	The Licensee shall complete monitoring of Waste discharged from the Sewage Disposal Facilities for carbonaceous biological oxygen demand (CBOD) and biological oxygen demand (BOD) for a minimum of three years. The study finding, including a trend analysis, shall be submitted to the Board in a report that is completed before March 1, 2015.												
D.4.	A Freeboard limit of one (1.0) metre, or as recommended by a qualified Engineer and as approved by the Board, shall be maintained in the Sewage Disposal Facilities.												
D.5.	The Sewage lagoon shall be maintained and operated in such a manner as to prevent structural failure.												

D.6. The Licensee shall maintain the Sewage Disposal Facilities to the satisfaction of an Inspector.		
D.7. The Licensee shall dispose of all solid Wastes at the Solid Waste Disposal Facilities or as otherwise approved by the Board.		
D.8. The Licensee shall submit to the Board for approval within ____ months after issuance of this Licence a plan for a Groundwater Monitoring and Protection Program that meets the following objectives and satisfies Schedule 2, Item 1 attached to this Licence: a. to identify and delineate any contamination of groundwater due to landfill activities; and b. identify the need additional impact mitigation measures to reduce or eliminate unacceptable environmental effects.	24 months	
D.9. If not approved by the Board, the plan for the Groundwater Monitoring and Protection Program referred to in Part D, Item 8 shall be revised and resubmitted for approval within three months of receiving notification of the Board's decision.		
D.10. The plan for the Groundwater Monitoring and Protection Program shall be implemented as and when approved by the Board.		
D.11. The Licensee shall review and update the plan for the Groundwater Monitoring and Protection Program as necessary to reflect changes in the operation of the Solid Waste Disposal Facility or ninety days prior to use of the Biotreatment Pad, or as requested by the Board. Any proposed changes to the Groundwater Monitoring and Protection Program must be submitted to the Board for approval.		
D.12. The Licensee shall submit to the Board on every May 1 a report summarizing the results of monitoring completed under the Groundwater Monitoring and Protection Program in the preceding year, including but not limited to the information identified in Schedule 2, Item 2 attached to this Licence.		
D.13. The Licensee shall submit a Discussion Paper to the Board by ____, 20xx that outlines and assesses options for improvements to the Sewage Disposal Facilities that will reduce the amount of ammonia in the final Sewage discharge. The Discussion Paper shall contain the information as per Schedule 2, Item 3 attached to this licence.	March 1, 2015	
D.14. The Board shall arrange for interested parties to submit comments on the Discussion Paper submitted under Part D, Item 13 and, upon review of those submissions, will consider providing directions to the Licensee as appropriate for the preparation of the Sewage Treatment Improvement Plan required under Part D, Item 15.		
D.15. The Licensee shall submit Sewage Treatment Improvement Plan to the Board for approval by ____, 20xx. The Sewage Treatment Improvement Plan shall be based on the Discussion Paper and any directions from the Board and shall include: a. Recommended measures for improving Sewage treatment and reducing the amount of ammonia in the discharge; b. A schedule for implementation of the recommended measures; and, c. A plan for how progress in improving Sewage effluent quality will be measured and reported to the Board.	March 1, 2015	
D.16. The Licensee shall implement the Sewage Treatment Improvement Plan as and when approved by the Board.		

Part E: Conditions Applying to Modifications		
E.1.	The Licensee may, without written approval from the Board, carry out Modifications to the Water Supply and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met: a) The Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications; b) Such Modifications do not place the Licensee in contravention of either the Licence or the Act; c) The Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and d) The Board has not rejected the proposed Modifications.	
E.2.	Modifications for which all of the conditions referred to in Part E, Item 1 have not been met may be carried out only with written approval from the Board.	
E.3.	The Licensee shall provide to the Board site plans of the Modifications referred to in this Licence within ninety (90) days of completion of the Modifications.	
Part F: Conditions Applying to Contingency Planning		
F.1.	The Licensee shall submit to the Board for approval within sixty (60) days of the issuance of this Licence, an updated Spill Contingency Plan in accordance with Indian and Northern Affairs Canada's 2007 "Guidelines for Spill Contingency Planning".	
F.2.	If not approved by the Board, the Spill Contingency Plan referred to in Part F, Item 1 shall be revised and resubmitted within thirty (30) days of receiving notification of the Board's decision.	
F.3.	The Licensee shall review the Spill Contingency Plan annually and, if necessary, modify the plan to reflect changes in operation(s) and technology. An updated Spill Contingency Plan shall be submitted to the Board for approval.	
F.4.	If, during the period of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall: a) Employ the appropriate contingency plan; b) Report the incident immediately via the 24-hour NWT Spill Report Line. Currently the number is (867) 920-8130; and c) Submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.	
Part G: Conditions Applying to Closure and Reclamation		
G.1.	The Licensee shall submit to the Board for approval an Interim Closure and Reclamation Plan for the Solid Waste Disposal Facilities within one (1) year after the issuance of this Licence. The Interim Closure and Reclamation Plan shall contain the information as set out in Schedule 3, Item 1, included in this Licence.	
G.2.	If not approved by the Board, the Interim Closure and Reclamation Plan, referred to in Part G, Item 1 shall be revised and resubmitted for approval within sixty (60) days of receiving notification of the Board's decision.	

G.3.	The Licensee shall submit to the Board for approval a Final Closure and Reclamation Plan at least six months prior to abandoning any component of the Waste Disposal Facilities.		
G.4.	The Licensee shall implement the plan specified in Part G, Item 1 and Item 3 as and when approved by the Board.		
Part H: Conditions Applying to Construction			
H.1.	Prior to construction of any dams, dykes, or structures intended to contain, withhold, divert, or retain Water or Wastes, the Licensee shall submit to the Board for approval design drawings stamped by a qualified Engineer registered in the Northwest Territories.		
H.2.	Construction of designed structures shall be carried out as approved by the Board.		
H.3.	The Licensee shall provide to the Board as-built plans and drawings of the construction referred to in Part H, Item 1 within ninety (90) days of completion of the construction.		
Part I: Conditions Applying to Operation and Maintenance			
I.1.	The Licensee shall, within _____ months of the issuance of this Licence, submit to the Board for approval, a plan for the operation and maintenance of the Sewage Disposal Facilities. The plan shall be contain the information as set out in Schedule 4, Item 1, included in this Licence.		
I.2.	The Licensee shall, within _____ months of the issuance of this Licence, submit to the Board for approval, a plan for the operation and maintenance of the Solid Waste Disposal Facilities. The plan shall contain the information as set out in Schedule 4, Item 2, included in this Licence		
I.3.	The Licensee shall, 90 days prior to use, submit for approval a plan for the operation and maintenance of the Biotreatment Pad located within the Solid Waste Disposal Facilities. The plan shall contain the information as set out in Schedule 4, Item 3, included in this Licence.		
I.4.	If not approved by the Board, the plans referred to in Part I, Items 1, 2 and 3 shall be revised and resubmitted for approval within sixty (60) days of receiving notification of the Board's decision.		
I.5.	The Licensee shall implement the Plans specified in Part I, Items 1, 2 and 3 as and when approved by the Board.		
I.6.	The Licensee shall annually review the plans specified in Part I, Items 1 and 2 and shall modify the plans to reflect changes in operations and technology or as directed by the Board All proposed updates or revisions to the plans shall be submitted to the Board for approval.		
Schedule 1: General Conditions			
1.	The Annual Report referred to in Part B, Item 1 shall include, but not be limited to, the following:		
a)	The total quantity of water pumped from the Slave River at Station Number 567-1;		

<ul style="list-style-type: none"> b) The total quantity of Sewage discharged to the Slave River at Station Number 567-2; c) Tabular summaries of all data generated under the “Surveillance Network Program”; d) The monthly and annual quantities in cubic metres of fresh water obtained from all sources; e) A detailed record of Modifications and/or major maintenance work carried out on the Water Supply Facilities and Waste Disposal Facilities and all associated structures; f) Results of any inspections of all dams, berms, dykes and control structures; g) A summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year; h) A list of unauthorized discharges; i) Updates or revisions to the approved Operation and Maintenance Plans for both the Sewage Waste Facilities and the Solid Waste Disposal Facilities; j) Updates or revisions to the approved Spill Contingency Plan; k) Updates or revisions to the locations and associated coordinates of the snow disposal sites; l) Summary of sludge management activities, if any; m) Comparison of the Surveillance Network Program data to Water Licence regulated limits and sampling and analysis requirements; n) A summary of progress on the implementation of the Sewage Treatment Improvement Plan, as per Part D, Item 15; o) A summary of any studies requested by the Board that relate to Waste disposal, waste use or reclamation, and a brief description of any future studies planned; p) The inclusion of all correspondence between the Inspector and the Licensee; and, q) Any other details on water use or waste disposal requested by the Board by November 1st of the year being reported. 		
<p>Schedule 2: Conditions Applying to Waste Disposal</p> <p>1. The plan for the Groundwater Monitoring and Protection Program (GMPP referred to in Part D, Item 8 shall include, but not be limited to the following:</p> <ul style="list-style-type: none"> a) A summary of potential impacts to groundwater and surface water due to operation of the Solid Waste Disposal Facility. This summary should include: <ul style="list-style-type: none"> i. A hydrogeological description and interpretation of the Facility, ii. A map and description of surface water drainage patterns at the Facility, iii. Maps showing depth to water table, patterns of groundwater movement and hydraulic gradients at the Facility, iv. A map and summary of the types of solid waste at the Facility, v. An estimation of the background groundwater and surface water quality at the Facility, and vi. Any other information relevant to groundwater or surface water quality at the Facility. 		

<p>b) A description, including rationale, of the type and frequency of monitoring required to achieve the objectives listed in Part D Item 8. The rationale should, at a minimum, include:</p> <ul style="list-style-type: none"> i. A map showing the location of existing and additional proposed groundwater monitoring wells at the Facility and surface water sampling locations; ii. Construction details of existing groundwater monitoring wells; iii. A description of groundwater monitoring well development protocols; iv. A description of monitoring protocols, methodologies, and parameters for each groundwater monitoring well and surface water sampling location; v. A description of the groundwater sampling and analytical QA/QC procedures, vi. A description of how the data will be analyzed for each monitoring type; <p>c) A Groundwater Contingency Plan including a description, with rationale, of thresholds for measured parameters and corrective actions that will be taken if thresholds are reached.</p> <p>2. The Groundwater Monitoring and Protection Program (GMPP) Annual Report referred to Part D, Item 12 shall include, but not be limited to, the following information:</p> <ul style="list-style-type: none"> a) A summary of monitoring activities conducted under the GMPP carried out in a given year, b) Summaries of all data and information generated under the GMPP in a format acceptable to the Board; c) An analysis and interpretation of the results; d) An evaluation of any identified environmental changes that have occurred as a result of the Solid Waste Disposal Facility; e) An evaluation of the overall effectiveness of the GMPP to date and recommendations, if necessary, for refining the GMPP to improve its overall effectiveness; and, f) A description of any actions taken under the Groundwater Contingency Plan. <p>3. The Discussion Paper, referred to Part D, Item 13, shall include, but not be limited to, the following information:</p> <ul style="list-style-type: none"> a) Options for achieving the lowest effluent quality criteria for ammonia practical at the Sewage Disposal Facilities; b) For each option identified, a description of environmental, operational and financial implications of applying each option including an estimated timeline for implementation; and c) Recommendations for which option, in the Licensee's opinion, is the most appropriate for the Facilities. 		
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Schedule 3: Conditions Applying to Closure and Reclamation

1. The Interim Closure and Reclamation Plan referred to in Part G, Item 1 shall include, but not be limited to, the following:

- a) Maps delineating all disturbed areas, borrow material locations and site facilities;
- b) A staging plan for closure of the Solid Waste Disposal Facility (SWDF) or portions of the SWDF;
- c) A plan to manage surface water infiltration or moisture additions according to the design intent of the SWDF cells or areas during and after closure;
- d) A proposed design for the final SWDF cover system and the identification of source materials for the cover;
- e) General information of the final elevation and slopes;
- f) A re-vegetation plan of completed areas of the SWDF; and
- g) A description of the potential end-use of the SWDF after final closure.

Schedule 4: Conditions Applying to Operation and Maintenance

1. The Operation and Maintenance Plan for the Sewage Disposal Facilities (SDF) referred to in Part I, Item 1 shall be prepared in accordance with the "Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories" (Government of the Northwest Territories, Municipal and Community Affairs, 1996) and include, but not be limited to, the following:

- a) Site description showing specific location of the SDF, drainage and distance to water bodies by means of maps and drawings;
- b) List of people by positions and phone numbers who are responsible for the operation and maintenance for the SDF;
- c) A description of the normal operation and maintenance procedures for the SDF;
- d) Frequency of each of the operation and maintenance steps carried out (i.e., daily, weekly, annually, etc.);
- e) Site records including volumes of effluent discharged to the environment, Sewage volume collected, and details of any maintenance undertaken;
- f) Safety procedures for the operator,
- g) A description of weed and insect control;
- h) Methods of controlling access to the SDF such as signs and fencing
- i) A list of chemicals used in the treatment process, if any;
- j) A description of the frequency of inspection of dams, dykes and drainage courses;
- k) A description of procedures used for removal of floating materials from the SDF;
- l) Runoff and drainage control within and around the facilities, and restoration of erosion; and

m) A description of how Sewage sludge is managed, treated and disposed of.

2. The Operation and Maintenance Plan for the Solid Waste Disposal Facilities (SWDF) referred to Part I, Item 2 shall be prepared in accordance with the "Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories" (Government of the Northwest Territories, Municipal and Community Affairs, 1996) and include, but not be limited to, the following:

- a) A site description including maps of the area showing;
 - i. Location of the SWDF,
 - ii. Dimensions of SWDF,
 - iii. Distance to water bodies and drainage paths,
 - iv. Prevailing wind, and
 - v. Segregation of solid wastes into sections such as bulky waste, waste oil, honey bag, refuse area, hazardous waste, recyclable and reusable waste, Biotreatment Pad;
- b) List of people by position and their phone numbers what are responsible for the normal operation and maintenance of the SWDF;
- c) Classification of the solid wastes including hazardous waste which are expected to be generated by the community;
- d) Disposal procedures for all solid Waste generated by the community;
- e) Basic maintenance procedures of the SWDF and frequency of maintenance activities including waste compaction, waste collection, methods of preventing windblown debris, fencing and signs, odour control and burning where permitted;
- f) Conditions that hinder the normal operation so the SWDF such as permafrost and access to cover material;
- g) Safety procedures for the operator;
- h) Water and leachate management and monitoring; and,
- i) Site records including
 - i. Date, description, estimated volume and generator of waste placed in compound,
 - ii. Any maintenance activities done at site;
- j) A hazardous Waste management plan that shall be completed in general accordance with the Government of the Northwest Territories, Department of Environment and Natural Resources 2009 guidelines for "Developing a Community Based Hazardous Waste Management Plan".

3. The Operation and Maintenance Plan for the Biotreatment Pad referred to Part I, Item 3 shall include, but not be limited to, the following:

- a) A description of how of future increases in soil volume will be managed;
- b) Details of contaminated soil sources, volume, and characteristics;
- c) A description of the frequency and spatial details for soil sampling during treatment;

- d) A description of how leachate will be tested and analyzed;
- e) A description of how results will be reported; and,
- f) A description of how leachate will be discharged and stored.

MACKENZIE VALLEY LAND AND WATER BOARD SURVEILLANCE NETWORK PROGRAM

A. Location and Description of Surveillance Network Stations

Station Number	Description	Rationale
567-1	Raw water supply from the Slave River at the Intake House.	To determine the quality of the water for use as a municipal water source.
567-2	Sewage Disposal Facilities effluent discharged to the Slave River	SITE OF COMPLIANCE. To monitor final effluent quality before discharge into receiving environment.
567-3	Raw Sewage prior to entering Sewage Disposal Facilities.	To characterize the quality of Sewage.
567-4	Run-off directly below the Solid Waste Disposal Facilities.	To monitor final effluent quality discharged.
567-5	The established groundwater monitoring wells in the Solid Waste Facility.	To monitor potential impacts to groundwater surrounding the Solid Waste Facility System.

B. Sampling and Analysis Requirements

1) Water at Station Number 567-2 shall be monthly and analysed for the following parameters:

- | | |
|------------------------|------------------|
| BOD ₅ | pH |
| Total Suspended Solids | Fecal Coliforms |
| Ammonia | Total Phosphorus |
| Nitrate | Nitrite |
| CBOD | |

2) Water at Station Number 567-4 shall be sampled twice per year in June and September for the following parameters:

- | | |
|------------------------|------------------------|
| pH | Total Iron |
| Conductivity | Total Lead |
| Total Suspended Solids | Total Mercury |
| Faecal Coliforms | Total Nickel |
| BOD ₅ | Total Zinc |
| Total Arsenic | Total Chromium |
| Total Cadmium | Total Sulphate |
| Total Copper | Visible Oil and Grease |

3) Water at Station Number 567-2 and 567-4 shall be inspected monthly during periods of flow for the presence of an oily sheen. If sheen is detected, then a sample shall be

collected and analysed for the presence of oil and grease.		
4) All sampling, sample preservation, and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standards Methods for the Examination of Water and Wastewater" or by such other methods approved by an Analyst.		
5) All analyses shall be performed in a laboratory approved by an Analyst.		
6) Station Number 567-1 shall be sampled and analyzed to the satisfaction of an Environmental Health Officer/Inspector.		
C. Flow and Volume Measurement Requirements		
1) The monthly and annual quantities of Water pumped from the Slave River at Station Number 567-1 shall be measured and recorded in cubic metres (m ³).		
2) The monthly quantity of Sewage discharged from the Sewage Disposal Facilities to the Slave River at Station Number 567-2 shall be measured and recorded in cubic metres (m ³).		
3) The monthly and annual quantities of Sewage solids removed from the sewage disposal facility shall be measured and recorded.		
D. Reports		
1) The Licensee shall, unless otherwise requested by an Inspector, include all of the data and information required by the Surveillance Network Program in the Licensee's Annual Report, which Report shall be submitted to the Board on or before March 31 st of the year following the calendar year being reported.		