



Staff Report

Applicant: Department of Indian Affairs and Northern Development (DIAND) – Contaminants and Remediation Division (CARD)	
Location: Former Bullmoose, Ruth, Beaulieu, Spectrum, Chipp, Storm, and Joon mines, NT	Application: MV2016L8-0004 & MV2016X0013
Date Prepared: January 17, 2017	Meeting Date: January 26, 2017
Subject: Management Plans: Waste Management Plan; Spill Contingency Plan; Community Engagement Plan; and Sediment and Erosion Control Plan	

1. Purpose/Report Summary

The purpose of this Report is to present to the Mackenzie Valley Land and Water Board (MVLWB/the Board) four management plans for consideration, as submitted by Department of Indian Affairs and Northern Development (DIAND) – Contaminants and Remediation Division (CARD) in support of activities under its Bullmoose-Ruth Remediation (BMR) Project, as required by Water Licence (Licence) MV2016L8-0004 and Land Use Permit (Permit) MV2016X0013:

- a) The Waste Management Plan;
- b) The Spill Contingency Plan;
- c) The Community Engagement Plan; and
- d) The Sediment and Erosion Control Plan.

2. Background

- December 5, 2016 – Issuance of Licence MV2016L8-0004 and Permit MV2016X0013;
- December 22, 2016 – Waste Management Plan; Spill Contingency Plan; Community Engagement Plan; and Sediment and Erosion Control Plan submissions received and review commenced;
- January 10, 2017 – Reviewer comments and recommendations due and received;
- January 13, 2017 – Proponent responses received; and
- **January 26, 2017 – Waste Management Plan; Spill Contingency Plan; Community Engagement Plan; and Sediment and Erosion Control Plan submissions presented to the Board for decision.**

3. Discussion

On December 22, 2016, DIAND-CARD submitted the following four revised management plans (attached) as required by Condition 77 of Permit MV2016X0013: a Waste Management Plan, Spill Contingency Plan, Community Engagement Plan, and Sediment and Erosion Control Plan. Condition 77 reads as follows:

Prior to the commencement of operations, the Permittee shall submit to the Board, for approval:

- a) a revised Waste Management Plan in accordance with MVLWB's 2011 *Guidelines for Developing a Waste Management Plan*;
- a) a revised Spill Contingency Plan in accordance with Aboriginal Affairs and Northern Development Canada's 2007 *Guidelines for Spill Contingency Planning*;
- b) a revised Engagement Plan in accordance with MVLWB's 2013 *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*; and
- c) a revised Sediment and Erosion Control Plan.

Additional requirements for the submission of a Waste Management Plan are outlined in Condition 43 of Permit MV2016X0013 (annual review and revision) and Part F, item 3 of Licence MV2016L8-0004, as follows:

Within 90 days following issuance of this Licence, the Licensee shall submit a revised **Waste Management Plan** to the Board for approval. The Licensee shall not commence operations until the Board has approved the Plan. The Plan shall meet the objectives listed in Part F, item 1, include all components outlined in the Board's *Guidelines for Developing a Waste Management Plan*, and shall also be in accordance with Schedule 3, item 1.

Additional requirements for the submission of a Spill Contingency Plan are outlined in Condition 62 of Permit MV2016X0013 (annual review and revision) and Part G, item 2 of Licence MV2016L8-0004, as follows:

A maximum of 60 days following issuance of the Water licence, the Licensee shall submit to the Board, for approval, an updated **Spill Contingency Plan**.

Additional requirements for the submission of an Engagement Plan are outlined in Condition 79 of Permit MV2016X0013 (annual review and revision) and Part B, item 12 of Licence MV2016L8-0004, as follows:

Within 90 days following issuance of this Licence, the Licensee shall submit a revised **Engagement Plan** to the Board for approval. The Licensee shall not commence operations until the Board has approved the Plan. The Plan shall meet the objectives outlined in the Board's *Engagement and Consultation Policy* and the *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*.

Additional requirements for the submission of a Sediment and Erosion and Control Plan are outlined in Conditions 21 and 22 of Permit MV2016X0013 (act in accordance with plan; and annual review and revision) and Part F, item 5 of Licence MV2016L8-0004, as follows:

Within 90 days of Licence Issuance, the Licensee shall submit to the Board, for approval, a revised **Sediment and Erosion Control Plan**. This Plan shall address all Remediation activities, including all areas of Water flow and Discharge, the Construction and repair of roads and Water crossings; excavations and borrow pits; disposal practices; and site management. The Plan shall meet the objectives listed in Part F, item 1 and shall be in accordance with Schedule 3, item 2.

4. Comments

Table 1 below lists the components of the Waste Management Plan required by Schedule 3, item 1 of Licence MV2016L8-0004 and an analysis of the adequacy of this submission.

Table 1: Waste Management Plan Completeness

	Components of the Waste Management Plan as required in Schedule 3, item 1 of Licence MV2016L8-0004	Board staff analysis of the adequacy of the Waste Management Plan in addressing the component
a)	The development and management of excavation areas (trenches, quarries, borrow sources, and overburden) so as to eliminate or minimize the risk of potential for Acid Rock Drainage and Metal Leaching;	Attachment 1(A) Adequate.
b)	The consolidation and disposal of Tailings, including the quantity of Tailings to be consolidated, the location of disposal, and confirmatory sampling plans for the site of origin;	Attachment 1(B) and Attachment 2 Inadequate. More information regarding the location of temporary stockpiles and the duration of storage should be provided, including any monitoring of the stockpiles.
c)	The collection and disposal of impacted sediment, including the amount of sediment moved and the location of sediment disposal;	Attachment 1(C) Inadequate. Total quantity of impacted sediment reported in section C is 500m ³ . This is equivalent to the impacted sediment expected to be addressed at the Bullmoose Sewage Lagoon. The RAP discusses an additional 176m ³ down gradient of the portal seep and 63m ³ within Bullmoose Creek that have also been identified for collection and disposal.
d)	The collection and disposal of metal impacted soils, including the quantity to be collected, the location of disposal, and confirmatory sampling plans for the site of origin;	Attachment 1(D) and Attachment 2 Adequate. Includes calculations of co-mingled soils.

e)	The collection and disposal of petroleum hydrocarbon (PHC) contaminated soils, including the quantity to be collected, the location of disposal, and confirmatory sampling plans for the site of origin;	Attachment 1(E) and Attachment 2 Adequate. Includes calculations of co-mingled soils.
f)	Details of how Groundwater will be managed in areas where Tailings, impacted sediments, and metals-impacted soil are removed;	Section 5 – Wastewater Management Inadequate. This section refers to the establishment of groundwater wells surrounding the Bullmoose landfill, Ruth landfill, and Bullmoose landfarm. More detail on the well locations, monitoring schedule and management of impacted groundwater is required.
g)	Details of how Groundwater and free-product will be managed in areas where free product is identified during PHC contaminated soil excavation;	Section 5 – Wastewater Management Inadequate. This section refers to the establishment of groundwater wells surrounding the Bullmoose landfill, Ruth landfill, and Bullmoose landfarm. More detail on the well locations, monitoring schedule and management of impacted groundwater is required – including monitoring areas where contaminants have been excavated.
h)	Details of how PHC contaminated Groundwater will be delineated and treated;	Attachment 2 Inadequate. The delineation of contaminated groundwater is identified in the purpose of this section but is not discussed in the body of Attachment 2.
i)	The sampling and Discharge of portal and trench Water into soak-away Sumps, including the quantity of Water to be Discharged, and the location of the Sumps and the surrounding environment;	Attachment 1(I) Inadequate. This section refers to water quality in the trenches meeting the maximum allowable concentration of the treated wastewater stated in Specifications Section (SS) 01 35 15. It is unclear how these specifications relate to Water Licence conditions and criteria. This section should explicitly state that water will meet Water Licence criteria (Part F, item 21) prior to discharge. Additionally, this Plan should be updated to include the planned location of sumps for discharge and the quantity of water discharged.

j)	A Wastewater management plan, addressing the management of all Seepage and leachate Waters from all Engineered Structures intended to contain, withhold or divert Waste or Waters, including the management of Water from the equipment decontamination facility and any contact Water;	Section 5 – Wastewater Management Inadequate. This section refers to the establishment of groundwater wells surrounding the Bullmoose landfill, Ruth landfill, and Bullmoose landfarm. More detail on the well locations, monitoring schedule and management of leachate is required. This section does not address the management of leachate waters from the landfills, landfarm or identify potential sources of site-wide contact water.
k)	Any manipulation of the Bullmoose portal seep and adjacent wetland; and	Attachment 1(K) Inadequate. Please discuss installation of a weir and any supporting structures. Some clarification is required.
l)	Any other item as directed by the Board.	N/A

The submitted Waste Management Plan does not include all of the requirements of Schedule 3, item 1 of Licence MV2016L8-000 (as described above in Table 1 or all components outlined in the Board's *Guidelines for Developing a Waste Management Plan* (Guidelines), as outlined below. The Waste Management Plan should be a stand-alone document which supports the BMR Project; however, it does not include any description of the project for which it is designed. Details on the following requirements, as laid out in the Guidelines, are missing:

- Environmental and social goals and objectives used for designing the Waste Management Plan;
- Detail on waste characteristics, sources, or potential environmental effects;
- A description of the activities involved in the management (e.g., handling, storage, processing, collection, separation, transportation, treatment, disposal, etc.) of waste;
- Rationale for the methods of waste management chosen;
- Engineering analysis, plans, studies or operational requirements for infrastructure required to manage and contain waste including any detail on the design, structure, capacity, management, monitoring, operation or maintenance of the landfarm or the landfills including any information on cover design(s) (or where this information can be found);
- Detailed descriptions of soak-away sumps including the surrounding environment or any monitoring plans;
- Results of the geochemical characterization of waste rock or plans for sampling to ensure the management methods are successful;
- Identification of all sources, locations and volumes of waste rock or identify locations of possible sources of seepage that may require monitoring or management; and
- A summary of the anticipated volumes of sewage generation, volume balance or treatment time, location of sludge disposal or discharge volumes.

In addition to the missing details outlined above, the Guidelines require an overall summary of each waste type and a plan for its management should be provided in a tabular format for easy reference. This should include, but is not limited to:

- References to reports that contain additional details of waste management planning for specific waste streams;
- References to reports that support the waste management activities that are submitted to the Land and Water Board to satisfy regulatory requirements (i.e. the Remedial Action Plan); and,
- Methods and techniques used to measure the effectiveness of waste management practices, as well as, a description of the steps taken to review and improve the Waste Management Plan or correct any management or operational problems.

Board staff acknowledge that many of the missing Waste Management Plan details are provided in the Remedial Action Plan and Updated Remedial Action Plan which were submitted with the applications. The Waste Management Plan, should, however, be a stand-alone document providing the same level of detail on waste management plans and procedures as understood by Rowe's Outcome Joint Venture (ROJV), the contractor for the BMR Project.

The **Spill Contingency Plan** largely complies with Aboriginal Affairs and Northern Development Canada's 2007 *Guidelines for Spill Contingency Planning*. The only major missing piece is a map showing buildings, roads, culverts, airstrips and other infrastructure, all surface water bodies and direction of water flow, including catchment basins, storage locations of each hazardous material, probable spill locations and direction of flow on land and in water, locations of all response equipment, environmentally sensitive areas, any approved disposal sites, topography (e.g., slope of land), and any other important on- or off-site features.

The **Community Engagement Plan** largely meets the objectives of the Board's *Engagement and Consultation Policy* and the *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*. A summary of engagement activities by party, as identified in Section 3.3 of the *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*, was not provided as part of the Community Engagement Plan. Nor was an indication of any responses to issues raised in previous engagement efforts or outstanding issues that have not been resolved. This should include a summary of engagement with local First Nation organizations, communities, local land owners and lease holders. Additionally, the planned future engagement seems to be one-directional, allowing for the information sharing and provision of project updates at very specific times by the BMR Project team and less opportunity for parties to raise issues or concerns outside of scheduled, structured meetings with a pre-established engagement committee (which does not include local land owners or lease holders). This approach may be restrictive and it is unclear how a two-way communication can be established and maintained for the life of the project between DIAND-CARD and all parties as issues or concerns arise. An example already identified is the lack of engagement regarding the initiation of construction of the winter road (See Reviewer Comment Summary Table). The engagement schedule identified in Table 1 of the Community Engagement Plan does not include this type of engagement which was specifically requested during the course of the application review.

The Sediment and Erosion Control Plan does not reference the requirements of Licence MV2016L8-0004 in Section 1.2 for the purpose of the Plan. The requirements of Part F, item 5 and the associated Schedule (Schedule 3, item 2) should be identified. Table 2 below lists the components of the Sediment and Erosion Control Plan required by Schedule 3, item 2 of Licence MV2016L8-0004 and an analysis of the adequacy of this submission.

Table 2: Sediment and Erosion Control Plan Completeness

	Components of the Sediment and Erosion Control Plan as required in Schedule 3, item 2 of Licence MV2016L8-0004	Board staff analysis of the adequacy of the Sediment and Erosion Control Plan in addressing the component
a)	The details of erosion and sediment control measures implemented prior to, during and after Reclamation activities are completed, until all disturbed areas are completely stabilized;	<p>Inadequate.</p> <p>Table 4-2 identifies the control measures implementation schedule in a general sense. Methods of control are identified and the locations of anticipated control requirements for project activities are identified in Table 5-1.</p> <p>Based on reviewer comment DFO-3, clarification of the criteria that will be used to determine the site conditions that require silt fence barriers is needed to satisfy this component of the condition. DFO also recommends that CARD clarify the process that will be used in determining the need for additional silt fencing. This includes providing rationale as to why additional silt fencing would be chosen versus alternative complementary control measures.</p> <p>Based on reviewer comment DFO-6, clarification of the criteria that will be used to determine the need for using erosion control matting for long term use is required. DIAND-CARD deflects any discussion of long-term measures to the Long Term Monitoring Plan, however, discussion of ‘control measures prior to, during and after Reclamation activities are completed, until all disturbed areas are completely stabilized’ is clearly required to satisfy this component of the condition.</p> <p>Is it important to note that it is CARD’s responsibility to ensure that project</p>

		impacts do not result in serious harm to fish which is prohibited under section 35(1) of the Fisheries Act.
b)	The details of Water management during excavation;	<p>Inadequate.</p> <p>Section 3.3.2 states that the contractor will “Maintain excavations free of water” and Section 3.3.3 states that they will “Provide temporary drainage and pumping as necessary to keep excavations and site free of water” and “Transfer potentially contaminated wastewater to storage tanks.” It is not clear if or how water collected in excavations will be tested prior to treatment or disposal.</p> <p>Based on reviewer comment DFO-2, clarification on the statement of 'address fisheries sensitive areas or areas that may affect fisheries sensitive areas' in Section 3.3.3 is needed to satisfy this component of the condition. DFO also recommends that CARD describe the process for how sensitive areas will be identified and protected during construction. For example, outlining sediment and erosion control measures for sensitive areas. This information is important for approval of the Sediment and Erosion Control Plan.</p> <p>Based on reviewer comment MVLWB-4, clarification on the types of activity referred to in Section 3.3.3 of the Plan is required. The Sediment and Erosion Control Plan should be a stand-alone document and should not require reference to additional documents to explain project activities being described.</p>
c)	A monitoring program that ensures the effectiveness and maintenance of all sediment and erosion control measures, stabilization and re-vegetation success; and,	<p>Inadequate.</p> <p>Section 4.3 identifies the inspection (monitoring) program and Appendix C provides an example inspection sheet for sediment and erosion control measures.</p> <p>Based on reviewer comment ENR-1, more information indicating when a floating turbidity curtain should be</p>

		installed (e.g. triggers) and a detailed Monitoring Program of the curtain's performance to ensure they are performing as designed should be included in the Plan. This information would better ensure the contractors understand when and how to install and maintain a floating turbidity curtain for the specific objectives of the project.
d)	A contingency plan that will be undertaken in the event that sediment and erosion issues are identified.	Inadequate. Detailed contingency plans in the event of failure are not well developed.

Board staff would like to remind DIAND-CARD that submissions required by Board authorizations must conform to the requirements as laid out in Licence MV2016L8-0004 and Permit MV2016X0013 which may not reflect the contract between DIAND-CARD and ROJV. DIAND-CARD should provide clarification on all issues and concerns identified in the Reviewer Comment Summary Table. In response to some reviewer comments which identify deficiencies in the Sediment and Erosion Control Plan, DIAND-CARD has indicated that it intends to submit a revision to this Plan.

5. Reviewer Comments

Board Staff distributed the four management plans for separate reviews. By January 10, 2017, comments and recommendations were received from five reviewers:

- Department of Fisheries and Oceans Canada (DFO);
- Government of the Northwest Territories (GNWT) – Department of Environment and Natural Resources (ENR);
- GNWT – Department of Lands (Lands);
- Mr. Brian Sundberg; and
- MVLWB staff.

DIAND-CARD responded on January 13, 2017. The 4 reviewer comment summary tables (attached) present the concerns identified through the review of the plans. Many comments and recommendations reflect those identified above in the Discussion. In response to reviewer comments on the Waste Management Plan, Spill Contingency Plan, and Sediment and Erosion Control Plan, DIAND-CARD has indicated that it intends to submit revised versions of the Plans. Board staff would encourage the Board to expand on the requirements for resubmission to include all points of clarification raised by Reviewers through the Review of the Sediment and Erosion Control Plan. The additional engagement referred to by DIAND-CARD in its response to reviewer comments is not reflected in the Engagement Plan as submitted. Any engagement activities not identified in the Engagement Plan should be reflected in updated Engagement Logs which include details on the information exchange(s).

6. Security

Not applicable.

7. Conclusion

Board staff conclude that the Waste Management Plan, as submitted, reflects the scope and scale of the Permit MV2016X0013 and can be approved to support activities associated with the construction of the winter access road. However, it does not conform to the requirements of Licence MV2016L8-0004, or reflect the level of detail required to describe the waste management activities associated with the BMR Project.

Board staff conclude that the Community Engagement Plan, Sediment and Erosion Control Plan, and Spill Contingency Plan could be approved, on an interim basis, to allow for progress on winter road construction, as planned by DIAND-CARD. However, the plans, as submitted, do not fully satisfy the requirements of the Licence, Permit or applicable guidelines and should, in Board staff's opinion be revised to reflect commitments made by DIAND-CARD and any further direction provided by the Board. DIAND-CARD has indicated they will be submitting revised versions of the Waste Management Plan, Sediment and Erosion Control Plan, and Spill Contingency Plan. Board staff believe that the Community Engagement Plan also requires revision and re-submission.

All revised plans should provide additional information as identified in the Reviewer Comment Summary Tables and laid out in the attached Reasons for Decision to be in line with applicable guidelines and authorization requirements before final approval.

8. Recommendation

Board staff recommend the Board:

- a) Approve the Waste Management Plan for activities associated with Permit MV2016X0013, including winter access road construction;
 - i. Approve the associated Reasons for Decision;
- b) Reject the Waste Management Plan for activities under the Licence MV2016L8-0004 and require revision and resubmission, for Board approval;
 - i. Approve the associated Reasons for Decision;
- c) Approve the Spill Contingency Plan, on an interim basis, and require revision and resubmission to reflect commitments made by DIAND-CARD and direction provided by the Board;
 - i. Approve the associated Reasons for Decision;
- d) Approve the Community Engagement Plan, on an interim basis, and require revision and resubmission to reflect commitments made and direction provided by the Board;
 - i. Approve the associated Reasons for Decision; and
- e) Approve the Sediment and Erosion Control Plan, on an interim basis, and require update and resubmission to reflect commitments made by DIAND-CARD and direction provided by the Board;
 - i. Approve the associated Reasons for Decision.

Board staff recommend that revisions to all plans be submitted by February 27, 2017. The revised plans should provide additional information identified in the Reviewer Comment Summary Tables and laid out in the attached Reasons for Decision to be in line with applicable guidelines and authorization requirements before final approval. Board staff recommend that final approval of the Spill Contingency Plan, Community Engagement

Plan, and Sediment and Erosion Control Plan can be completed by the Board following a conformity check by staff, however, suggest that the Waste Management Plan be redistributed for review and comment prior to Board approval.

Board staff recommend including the following text in the decision letter:

- DIAND-CARD shall adhere to the commitments made in their responses to reviewer comments dated January 13, 2017.
- DIAND-CARD shall include a detailed conformity table in each plan revision in accordance with Part B, item 3 (c) of Licence MV2016L8-0004.

9. Attachments

- [The Waste Management Plan.](#)
- Reviewer Comment Summary Table – Waste Management Plan;
- [The Spill Contingency Plan;](#)
- Reviewer Comment Summary Table – Spill Contingency Plan
- [The Community Engagement Plan;](#)
- Reviewer Comment Summary Table – Community Engagement Plan;
- [The Sediment and Erosion Control Plan;](#)
- Reviewer Comment Summary Table – Sediment and Erosion Control Plan;

- Draft Reasons for Decision – Waste Management Plan;
- Draft Reasons for Decision – Spill Contingency Plan;
- Draft Reasons for Decision – Community Engagement Plan;
- Draft Reasons for Decision – Sediment and Erosion Control Plan;

- Draft Decision Letters from the Board:
 - Interim Approval (LUP) and Denial (WL) of the Waste Management Plan;
 - Interim Approval of the Spill Contingency Plan;
 - Interim Approval of the Community Engagement Plan; and
 - Interim Approval of the Sediment and Erosion Control Plan.

Respectfully submitted,



Julian Morse
Regulatory Officer



Shannon Allerston
Regulatory Officer

Review Comment Table

Board:	MVLWB
Review Item:	INAC-CARD - Bullmoose Ruth Remediation Project - Waste MGMT Plan (MV2016X0013 & MV2016L8-0004)
File(s):	MV2016L8-0004 MV2016X0013
Proponent:	INAC - Contaminants and Remediation Directorate
Document(s):	MV2016X0013 MV2016L8-0004 - INAC-CARD - Waste Management Plan (9MB)
Item For Review Distributed On:	Dec 22 at 15:30 Distribution List
Reviewer Comments Due By:	Jan 10, 2017
Proponent Responses Due By:	Jan 13, 2017
Item Description:	<p>Indigenous and Northern Affairs Canada - Contaminants and Remediation Directorate (INAC-CARD) submitted their Waste Management Plan on December 22, 2016. This Plan was originally submitted in conceptual form in support of INAC-CARD's Applications for a Permit and Licence for remediation activities associated with the Bullmoose Ruth Remediation Project. The Plan has now been revised and re-submitted in accordance with conditions in Licence MV2016L8-0004 and Permit MV2016X0013.</p> <p>Reviewers are invited to submit questions, comments, and recommendations on this submission using the Online Review System (ORS) by the review comment deadline specified below. All documents that have been uploaded to this review are also available on our public registry. If you have any questions or comments about the ORS or this review, please contact Board staff identified below.</p>
Contact Information:	Julian Morse 867-766-7453 Shannon Allerston 867-766-7458

Comment Summary

Fisheries and Oceans Canada: Mark D'Aguiar				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
1	General	<p>Comment Fisheries and Oceans Canada - Fisheries Protection Program has reviewed the Waste management plan according to our mandate and has no comments.</p> <p>Recommendation Fisheries and Oceans Canada - Fisheries Protection Program has reviewed the Waste MGMT Plan according to our mandate and has no comments.</p>	<p>Jan 13: Thank you for your review</p>	Noted.
GNWT - ENR: Central Email GNWT				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Response
4	General File	<p>Comment (doc) ENR Letter with Comments and Recommendations</p> <p>Recommendation</p>		Noted.
1	Topic 1: Site Map	<p>Comment The MVLWB Guidelines for Developing a Waste Management Plan (2011) suggest the inclusion of a map identifying the proposed location for all waste management activities with GPS coordinates and where applicable, the location of historical waste management areas.</p> <p>Recommendation 1) Rowe's Outcome JV (ROJV) should provide a map of each former mine site included in the Bullmoose Ruth Remediation project and identify the proposed locations of all waste</p>	<p>Jan 13: Maps with locations of all waste management activities, both construction related and historic, will be included in the revised version of the Plan.</p>	Adequate.

		management activities with GPS coordinates and where applicable, the locations of historical waste management areas.		
2	Topic 2: Site Description	<p>Comment The MVLWB Guidelines for Developing a Waste Management Plan (2011) suggest a description of the site physical, surface and subsurface characteristics, site water management (flow and drainage patterns) and geotechnical characteristics.</p> <p>Recommendation 1) ROJV should provide a separate description of each former mine site included in the Bullmoose Ruth Remediation project and include a description of the site physical, surface and subsurface characteristics, site water management (flow and drainage patterns) and geotechnical characteristics. This information could be included within the map referenced in the preceding recommendation.</p>	Jan 13: Individual site descriptions will be provided in revised version of the Plan.	Adequate.
3	Topic 3: Landfarm and Landfill	<p>Comment It is stated in the Waste Management Plan (WMP) that a Landfarm Design Plan and a Landfill Design Plan will be prepared by April, 2017. As the project involves the transport and remediation of a significant amount of petroleum hydrocarbon contaminated soils, the WMP should include more detailed information concerning the landfarm and landfill design, operation and maintenance.</p> <p>Recommendation 1) The</p>	Jan 13: Information regarding landfarm and landfill design will be included in the submission of the Landfill Design Plan and Landfarm Management Plan as per Water Licence requirements. Any elements of the WMP that change as result of the finalized Plans will be reflected as revisions to the WMP.	The <i>Guidelines for Developing a Waste Management Plan</i> requires engineering analysis, plans, studies or operational requirements for infrastructure required to manage and contain waste including any detail on the design, structure, capacity, management,

		<p>WMP should be updated and resubmitted to include the required information concerning the landfarm and landfill, according to the referenced regulations and guidelines listed in the MVLWB Guidelines for Developing a Waste Management Plan (2011). The Landfarm Design Plan and the Landfill Design Plan should then be submitted to the board for review, with an addendum to the WMP for the temporary stockpiles and handling of the hydrocarbon contaminated material.</p>		<p>monitoring, operation or maintenance of the landfarm or the landfills including any information on cover design(s). The Waste Management Plan should provide details on where this information can be found. These updates should be made in subsequent revisions to the plan.</p>
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January 10, 2017

Shannon Allerston
Regulatory Officer
Mackenzie Valley Land and Water Board
7th Floor – 4910 50th Avenue
P.O. Box 2130
Yellowknife, NT
X1A 2P6

Dear Ms. Allerston,

**Re: INAC CARD
Water Licence Application – MV2016L8-0004
Bullmoose Ruth Remediation Project
Waste Management Plan
Request for Comments**

The Department of Environment and Natural Resources (ENR), Government of the Northwest Territories has reviewed the plan at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act*, the *Species at Risk (NWT) Act*, the *Waters Act* and the *Wildlife Act* and provides the following comments and recommendations for the consideration of the Board.

Topic 1: Site Map

Comment(s):

The *MVLWB Guidelines for Developing a Waste Management Plan* (2011) suggest the inclusion of a map identifying the proposed location for all waste management activities with GPS coordinates and where applicable, the location of historical waste management areas.

Recommendation(s):

- 1) Rowe's Outcome JV (ROJV) should provide a map of each former mine site included in the Bullmoose Ruth Remediation project and identify the proposed locations of all waste management activities with GPS coordinates and where applicable, the locations of historical waste management areas.

Topic 2: Site Description

Comment(s):

The *MVLWB Guidelines for Developing a Waste Management Plan* (2011) suggest a description of the site physical, surface and subsurface characteristics, site water management (flow and drainage patterns) and geotechnical characteristics.

Recommendation(s):

- 1) ROJV should provide a separate description of each former mine site included in the Bullmoose Ruth Remediation project and include a description of the site physical, surface and subsurface characteristics, site water management (flow and drainage patterns) and geotechnical characteristics. This information could be included within the map referenced in the preceding recommendation.

Topic 3: Landfarm and Landfill

Comment(s):

It is stated in the Waste Management Plan (WMP) that a Landfarm Design Plan and a Landfill Design Plan will be prepared by April, 2017. As the project involves the transport and remediation of a significant amount of petroleum hydrocarbon contaminated soils, the WMP should include more detailed information concerning the landfarm and landfill design, operation and maintenance.

Recommendation(s):

- 1) The WMP should be updated and resubmitted to include the required information concerning the landfarm and landfill, according to the referenced regulations and guidelines listed in the *MVLWB Guidelines for Developing a Waste Management Plan* (2011). The Landfarm Design Plan and the Landfill Design Plan should then be submitted to the board for review, with an addendum to the WMP for the temporary stockpiles and handling of the hydrocarbon contaminated material.

Comments and recommendations were provided by ENR technical experts in the Water Resources Division and the North Slave Region, and were coordinated and collated by the Environmental Assessment and Monitoring Section, Conservation, Assessment and Monitoring Division (CAM).

Should you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at (867) 767-9233 Ext: 53096 or email patrick.clancy@gov.nt.ca.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Clancy', written in a cursive style.

Patrick Clancy
Environmental Regulatory Analyst
Environmental Impact Assessment Section
Conservation, Assessment and Monitoring Division
Department of Environment and Natural Resources
Government of the Northwest Territories