



Mackenzie Valley Land and Water Board
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July 17, 2014

File: MV2014D0001
MV2014L2-0001

Mr. Mark Wiseman
Avalon Rare Metals
130 Adelaide Street West, Suite 1901
TORONTO ON M5H 3P5 Email: mwiseman@avalonraremetals.com

Dear Mr. Wiseman:

Waste Management Plan Approval - Conditional

The Mackenzie Valley Land and Water Board (the Board) met on July 17, 2014 and reviewed the Waste Management Plan in accordance with Part G Item 3 of Water Licence MV2014L2-0001, also in accordance with condition 24 of Land Use Permit MV2014D0001.

The Board has approved the Waste Management Plan conditionally upon receipt of the items identified in Table 1: Waste Management Plan (attached). Please submit these updates within 60 days of this letter.

If you have any questions or concerns, please contact Tyree Mullaney at (867) 766-7464 or email tyree@mvlwb.com.

Yours sincerely,

A handwritten signature in black ink, appearing to read "W. Hagen".

Willard Hagen
MVLWB Chair

Copied to: Distribution List

Attachment: Table 1: Waste Management Plan

Table 1: Waste Management Plan

	Topic	Recommendation	Item to be addressed
1	Section 1.4.1: Federal Legislation	For clarity, reference should be made to the new Act "Waters Act S.N.W.T. 2014"	The new "Waters Act S.N.W.T 2014" will be appropriately referenced in the next version of the Waste Management Plan for the Site Preparation and Construction Program.
2	Waste Management Plan Topic 1: Domestic sewage and Waste water Appropriate Categories Required	1) ENR recommends that all waste streams must be properly characterized and managed. 2) ENR recommends that all approved SNP stations specify which wastewater stream has been approved for disposal at each specific location, with associated GPS coordinates. 3) ENR recommends that the WMP should also include a description of available contingencies to prevent discharge of non-compliant or untreated wastewater in the event of treatment plant malfunction.	Avalon is committed to ensuring that all waste streams are properly characterized and managed as discussed in the current version of the Waste Management Plan for the Site Preparation and Initial Construction Program. 2) MVLWB Water Licence MV2014 L2-0001 specifies the waste water streams to be monitored, specific locations to be sampled, and water quality criteria to be achieved. Additional discussions with the MVLWB are planned to further clarify the main project licence requirements prior to entering the next phase of these licenses. 3) The main contingency will be that non-compliant wastewater will not be permitted to be discharged until specified water quality criteria are met. Given the small volume of water (26m ³ /day) non-compliant waste water may be retained in either an onsite water collection basin or storage tank, as determined in detailed engineering.
3	Topic 2: Waste Details (Quantity, Quality, Treatment and Disposal) Missing from Water Licence Application and Waste Management Plan	1) A complete list of all wastes (hazardous and non-hazardous) in a table format - with estimates respective quantities/volumes, quality, treatment and disposal procedures should be provided within the WMP. Furthermore, the storage locations for each waste should also be provided along with respective GPS coordinates.	Tables 1, 2 and 3 in the current version of the Waste Management Plan identify the treatment and disposal options associated with each of the anticipated combustible non-hazardous wastes, recyclable wastes and hazardous wastes. Waste quantity estimates will be incorporated into in the next version of the Waste Management Plan for the Site Preparation and Construction Program. Proposed Waste storage locations are shown in Figures 2 and 3 of the current plan.

4	Topic 3: Membrane Bio-reactor Sewage Treatment Plant and Other Treatment/Reducing Systems	1) ENR recommends that Avalon confirm the source of the design volume and ensure it is consistent with per person volumes generated at other mine sites in the NWT. 2) ENR recommends that the sludge should be characterized to confirm that it will be suitable for use during reclamation.	1) Avalon has confirmed that the design water consumption/treatment volumes to be treated by the MBR sewage treatment system are as reported in Section 3.6.2 of the Waste Management Plan. 2) Avalon is committed to periodically characterizing the sewage sludge (filter cake) to confirm that it will be suitable for future reclamation purposes.
5	Topic 5: Waste Management Plan- Industrial Waste Discharges in the NWT	1) ENR recommends that the Proponent remove reference to ENR Guideline for Industrial Waste Discharges in the NWT from its Waste Management Plan.	As recommended, the current reference to ENR's Guideline for Industrial Waste Discharges in the NWT will be removed from the next version of Avalon's Waste Management Plan.
6	Topic 6: Waste Management Plan- Waste Oil Burner Registration	1) The proponent must not use waste fuel as an energy source until it has demonstrated that the fuel meets ENR's regulations and the device is registered. ENR recommends that the proponent register its used oil burner(s) with ENR. Please contact Gerald Enns; to obtain the registration forms at (867) 920-8044 or via email gerald_enns@gov.nt.ca .	As indicated in a previous response, during the initial Site Preparation and Construction Phase, combustible non-hazardous materials will be incinerated in the existing installed exploration camp dual chamber INCINER8 incinerator, as recommended, installed and operated per recommendation by the ENR land use inspector. The current mode of operation of the camp incinerator is as follows: . No oily rags, etc are burnt in the incinerator in camp. When there is maintenance work done on vehicles at the project, materials such as this are double bagged in plastic bags and shipped to KBL in Yellowknife for proper disposal. . No hydrocarbons are burnt in the incinerator. All waste hydrocarbons are shipped out, also to KBL, for appropriate disposal. . Only "domestic waste" is burnt in the incinerator such as kitchen materials, waste paper, cardboard or paper packaging, etc. The incinerator will be operated by the camp manager, or individuals who have been trained by the camp manager.

7	<p>Topic 8: Waste Management Plan- Incineration</p>	<p>1) ENR recommends that the proponent provide additional details within its WMP that commits to and demonstrates the following: a) Update and provide details in the WMP on how the proponent intends to segregate waste streams prior to incineration (SOPs) including the appropriate selection of an incinerator that is designed for the waste stream. Once an incineration unit is proposed, the IMP should include the specific manufacturer recommended batching requirements to meet the CCME CWS for Dioxins and Furans and Mercury Emissions. In addition, the proponent should highlight how it will reduce metal inputs into the incineration device or provide details on the scrubbing unit to ensure that metals are not dispersed into the environment. This should include standard operating procedures and should be detailed to ensure correct operation of the unit. b) The proponent demonstrate that incineration of waste be conducted in accordance with Environment Canada Technical Document for Batch Waste Incineration. In addition, ENR requests that the proponent provide SOPs and worksheets that demonstrate the daily activities that will be used during the incineration of waste. c) ENR recommends that the</p>	<p>As indicated in the current version of the Waste Management Plan, during the initial Site Preparation and Construction Phase, combustible non-hazardous materials will be incinerated in the existing small volume exploration camp dual chamber INCINER8 incinerator, as recommended, installed and operated per recommendation by the ENR land use inspector. The incinerator will be operated by the camp manager, or individuals who have been trained by the camp manager. Avalon is committed to ensuring that effective waste segregation is implemented to ensure that only wastes which will not generate dioxins and furans will be directed to the current on site incinerator for incineration. Avalon has indicated that for the longer term operations phase and potentially in later phases of the construction program, Avalon intends to install a considerably larger and permanent Environment Canada approved incinerator to handle the wastes to be directed to this facility in the future. Avalon has committed to periodically monitor this facility for Dioxin and Furans and mercury emissions. Avalon will be requiring the supplier of the main project incinerator to provide an incinerator Management Plan that will address the various recommendations identified by both ENR and EC in their comments on the Site Preparation and initial Construction Phase Waste Management Plan.</p>
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8	<p>Topic 9: Waste Management Plan General Comments and Recommendations</p>	<p>1) ENR suggests that more information be provided on the monitoring and management of the Organic Stockpile Area (Pg.13) that will explain how Avalon will prevent wildlife from entering the area. ENR recommends additional mitigation to ensure the safety of both the wildlife and staff at the site. I.e. electric fencing. 2) Table 1: Combustible Non-Hazardous Wastes (Pg. 14) waste management strategy for wood waste will be to store and incinerate. ENR recommends that only clean untreated wood be incinerated and treated wood be stored and transported back to an approved facility. Any incineration that may be done via open pit will need</p>	<p>1) The proposed organic soils stockpile will consist primarily of the overburden soils and associated vegetation debris removed from areas of the project footprint where that will be necessary. In addition, for the short term, it has been proposed that, subject to testing to confirm acceptability, the limited amount of treated sewage sludge filter cake (approx. 7.5 kg/day) will also be buried within the organics stockpile on a regular basis. This will serve to minimize attraction of wildlife to the organics stockpile, thus Avalon is of the view that an electric fence is not warranted. 2) Avalon accepts ENR's recommendation regarding the burning of wood and will incorporate this information into the next version of the Waste Management Plan for the Site Preparation and Construction Program. 3) Avalon accepts ENR's recommendation regarding the disposal of damaged Super Sacks and will incorporate this information into the next version of the Waste Management Plan for the Site Preparation and</p>

	<p>a Permit to Burn between the months of May 1 to September 30 each year. Applications are available at the ENR regional offices. 3) Table 1: Combustible Non-Hazardous Wastes (Pg. 15) waste management strategies for damaged sacks (Super Sacks) are to be incinerated. ENR recommends that any sacks damaged be properly stored and transported by to an approved facility for final disposal. 4) Section 4.2 Waste Management Facility (Pg. 27) states that smaller volume wastes will be stored designated, colour-coded bins prior to being transported to an appropriate recycling or disposal facility. Figures. These bins are to be sealable and made of material that allow for the containers to be cleaned on a regular basis such as plastic (not wood) to prevent wildlife attraction. Please include figures. 5) The annual review of the WMP will need to include regulator participation to assess the mitigation measures effectiveness in preventing or reducing negative impacts. To the environment. 6) Section 1.4.1 Federal Legislation references the Northwest Territories Waters Act. Post devolution, the GNWT has assumed responsibility for waters in the Northwest Territories and as such have drafted Territorial Legislation.</p>	<p>Construction Program. 4) Avalon accepts ENR's recommendation regarding the types of bins to be employed for the temporary storage of wastes. 5) Avalon accepts ENR's recommendation regarding regulator participation in the annual review of the Waste Management Plan. 6) Avalon accepts ENR's recommendation regarding the incorporation of Post devolution changes to Territorial Legislation into the next version of the Waste Management Plan for the Site Preparation and Construction Program.</p>
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		Section 1.4.2 Territorial Legislation must reference the Waters Act and reference to the Northwest Territories Waters Act can be removed from Section 1.4.1.	
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