Northwest Territories Environment and Natural Resources

September 27, 2010 VIA EMAIL

Paul Mercredi
Environmental Assessment Officer
Mackenzie Valley Review Board
200 Scotia Centre
P.O. Box 938
Yellowknife, NT X1A 2N7

Dear Mr. Mercredi:

Re: EA0809-002 Avalon Rare Earth Elements, Thor Lake Project, Scoping Comments

Please find attached the Government of the Northwest Territories (GNWT) scoping comments for the Thor Lake Project.

Please call Amy Jenkins at (867) 920-6593 with any questions regarding the attached submission.

Sincerely

Gavin More

Gavin More
Manager
Environmental Assessment and Monitoring
Environment and Natural Resources

The GNWT recommends that the Developers Assessment Report for the Thor Lake Project include, but not be limited to, the following:

ENVIRONMENTAL ISSUES

Air Quality

Provide an air quality assessment for each site (i.e. mine site and hydrometallurgical plant site), for both the construction and operation phases. This would include:

- detailed emissions inventory of criteria air contaminants (CACs) and mining-related metals, for mining and camp operations, including but not limited to: process-related emissions, electricity generation, transportation and mobile equipment, heating, incineration, dust (from mining, materials handling, escapement from trucks, barges or train, wind or mechanical kick up from road surfaces, etc), and blasting. *Note that process-related emissions and dust should include specific assessment of REE content.*
- air quality modeling for dispersion and deposition of the emissions, using the CALPUFF version 6 model with 3-D meteorological data gathered from a minimum of 1 year on-site data. Isopleth maps for the predicted ground-level concentrations and depositions should be provided, along with output files presented in raw CALPUFF format.
- a comparison of dispersion results to GNWT Ambient Air Quality Standards, and other jurisdiction as required.
- a commitment to an air quality monitoring program, designed to provide verification of the emissions inventory and modeled results, which may include any or all of the following: stack testing, ambient air quality monitoring, and deposition monitoring.

Provide details of air quality mitigation measures from the alternative energy plans (geothermal, wind, hydro) including timelines for study results, anticipated benefits/offsets to the sites emissions inventory and modeled dispersion/deposition, feasibility for implementation, and implementation timelines.

Blasting Impacts

- Description of handling and application procedures for blasting materials
- Identification of mitigation measures to limit/prevent nitrate and ammonia impacts to the receiving environment.

Waste Management

Waste

- Identification of all waste types, segregation measures, storage location and method, and discussion of disposal plans (off-site, on-site landfill), contingencies, treatment, testing.
- Details on the temporary waste management facility.
- Details of on-site disposal facility (landfill), including a conceptual design.
- Details of off-site disposal, wastes designated, location, mode of transportation, responsibility

Incineration

- Fully address incineration devices and practices, in accordance with *Environment Canada's Technical Document on Batch Waste Incineration*, including details of the waste streams and anticipated volumes, appropriate technology selection for the waste streams, operation and operator training, maintenance, and reporting.

Tailings Management Facility(TMF)/Water Quality

Hydrometallurgical Plant Site

- Full details of the newly proposed 'open pit tailings management facility' at the hydrometallurgical site including:
    - facility design, indicating verified liquid migration pathways including all applicable environmental considerations, and potential impacts on aquatic resources and habitat
    - water quality of tailings, water management and contingency measures
    - water treatment
    - control measures
- Description of water quality and quantity monitoring, adaptive management systems in place to deal with extreme short-term precipitation events, snowpack build up, geologic instability or seismic activity, freezing effects.
- Estimated time period until infiltration through base of the pit is no longer an option, subsequent water management/disposal options.
- Identify sulphuric acid supply (plant vs supplier), detail handling and spill contingency measures.

Nechalacho Mine

- Water quality of tailings, water management and contingency measures at the mine site including:
    - facility design, indicating verified liquid migration pathways
    - control measures
    - water treatment (i.e. water treatment plant/polishing pond) - provide performance expectations, monitoring, treatment volumes.

- Description of water quality and quantity monitoring, adaptive management systems in place to deal with extreme short-term precipitation events, snowpack build up, geologic instability or seismic activity, freezing effects
- Dam Classification (low, significant, high, very high, extreme).
- Identify the monitoring features in place to ensure performance goals.
- Estimated volume of paste backfill to be placed underground and TMF.

Uranium/Thorium

- Provide further details and laboratory results to ensure levels are within acceptable/safe limits.

Waste Rock

- Identify the suitability (criteria) of waste rock material intended for construction activities, and management activities/disposal if not appropriate.

Acid Rock Drainage/Metal Leaching Potential (ARD/ML)

- Detail ARD/ML potential of tailings, paste backfill, waste rock and ore stockpiles.
- Identify mitigative measures, if a concern.

Emergency Response Measures/Contingency Plans

- Assessment of the likelihood and consequences of accidents and malfunctions.
- A description of the measures to be used to prevent, prepare for, respond to and recover from any accident or malfunctions at the mine site, hydrometallurgical site, or along any transportation route.
- Discussion of storage, transportation, management and disposal of fuel, reagents, hazardous materials, etc.

Progressive Reclamation

- Identify standards and criteria to meet, and potential monitoring.

Closure and Reclamation

- Overall reclamation objectives for the various mine components
- Discuss how closure considerations have been incorporated into the mine design.
- The long-term physical integrity of permanent features.

Wildlife

- Describe the potential impacts on wildlife and wildlife habitat
    - Potential for increased mortality from all sources (including vehicle collisions and changes to hunting access)
    - Potential for increased attraction to the site
- Identify wildlife deterrent procedures (most especially bear) from project facilities, waste management and tailings management facility. Refer to ENR's Bear Response Guidelines.
- Describe how project planning has considered potential impacts on wildlife and wildlife habitat, best management practices to minimize impacts on wildlife, and

what mitigation commitments have been made (e.g. rules for road use, reduction of attractants, spill response plans).

- Identify the wildlife species (including SARA-listed, COSEWIC-assessed and species identified in the General Status of NWT Species as 'may be at risk" or "sensitive") that will potentially be affected by the Project,
- For any wildlife at risk species identified as potentially affected, provide proposed mitigation measures and monitoring commitments for each species.
- Provide details on how wildlife sightings will be managed as well as recorded and reported to the Department of Environment and Natural Resources.

SOCIO-ECONOMIC ISSUES

Training Programs

Provide details regarding:

- Training partnerships and funding arrangements;
- Measures of success or benchmarks;
- Plans to promote training and employment opportunities to the impacted communities and other NWT communities;
- Pre-employment and technical training programs or initiatives;
- Number and type of apprenticeship positions for NWT residents;
- Career counselling and guidance plans for employees;
- Strategies to advance an entry-level employee from one level of employment to another (e.g. entry-level to semi-skilled or skilled); and
- On site essential skills and literacy support for workers.

NWT Resident and Aboriginal Employment

It is important that employment benefits of the Avalon project that can be realized by NWT residents, including Aboriginal residents, during the pre-operation, operation, processing and closure/reclamation phases are documented. The economic opportunities associated with the employment of NWT residents and steps the developer will take to ensure they can succeed at their jobs, must be scoped into this environmental assessment.

Provide explicit details on

- economic opportunities associated with the employment of NWT residents during the pre-operation, operation, processing and closure/reclamation phases;
- priority hire policies;
- steps the developer will take to ensure they can succeed at their jobs
- Work scheduling for mine site and plant workers;

- Mine site and Plant accommodations for workers;
- Prior learning assessment recognition hiring policies;
- Northern attraction and retention plans and strategies;
- Cross-cultural orientation for workers;

Contracting and Procurement

Contracting and procurement from NWT businesses, including Aboriginal-owned businesses, provides secondary employment opportunities in the territory and contributes to the NWT economy. The cost of doing business in the NWT can be higher because of the lack of economies of scale and the distance goods must travel to market. As a result, competitive pricing by NWT companies can be difficult when competing with southern companies. It is important that efforts are made to assist NWT businesses to successfully compete for contract and procurement opportunities. For these reasons, the contracting and procurement policies for the Avalon project need to be included in the scoping of this environmental assessment.

Provide explicit details on

- the contracting and procurement policies for NWT businesses, including Aboriginal-owned businesses

Travel and Site Access Policies

Travel and site access policies greatly influence the ability of NWT residents to be employed at NWT mine sites. These policies also influence employee decisions to retain residency in the NWT and therefore affect the NWT economy. Whether employment is directly through Avalon or one of the mining company's contractors or suppliers, it is important that NWT residents have equal opportunity to realize the benefits of working at the Avalon project and be able to remain living in NWT communities. For these reasons the travel and site access policies of Avalon must be considered in the environmental assessment.

Provide explicit details on

- travel and site access policies for local and regional Northern residents and southern hires;
    - o including incentives for the company's or contractors employees to live in NWT communities.

Traditional Economy

Traditional economic pursuits are a significant element of the NWT economy and way of life. It is important to be able to assess the impacts the project will have on traditional

economic activities. Plans for any ongoing monitoring and adaptive management to mitigate and minimize possible adverse effects on traditional land use and resource harvesting are needed to understand the socio-economic impacts of the project.

Provide explicit details on

- the impacts the project will have on traditional economic activities; and
- plans for any ongoing monitoring and adaptive management to mitigate and minimize possible adverse effects on traditional land use and resource harvesting.

Tourism Activities

The tourism industry is an important component of the NWT economy. It is important to be able to assess the impacts the project will have on tourism activities. Plans for any ongoing monitoring and adaptive management to mitigate and minimize possible adverse effects on tourism activities are needed to understand the socio-economic impacts of the project.

Provide explicit details on

- the impacts the project will have on tourism activities; and
- plans for any ongoing monitoring and adaptive management to mitigate and minimize possible adverse effects on tourism activities.

Closure Plans

The local workforce, local businesses, and the broader community become accustomed to and reliant on the economic benefits of mining projects. At the end of a mine life cycle it is important there are plans in place to ensure these stakeholders can successfully transition away from reliance on the mine project. Similarly, plans are also needed to prevent negative impacts should the mine require a temporary shutdown during its operation. The environmental assessment must include an assessment of the impacts of temporary shutdowns and mine closure on local and regional employees, businesses and communities and mitigation plans designed to ensure successful transitions and address negative impacts.

Provide explicit details on

- assessment of the impacts of temporary shutdowns and mine closure on local and regional employees, businesses and communities;
- mitigation plans to address negative impacts of temporary closures; and
- mitigation plans designed to ensure successful transition for the local workforce, local businesses, and the broader community during mine closure.

Follow-up Plans and Annual Reporting

It is difficult to determine the success Avalon will have in meeting socio-economic commitments made during the environmental assessment process. It is for this reason that follow-up plans, monitoring plans and annual reporting should be included in the environmental assessment for this project.

Provide explicit details on

- follow-up plans, monitoring plans and annual reporting for socio-economic aspects of the project

TRANSPORTATION ISSUES

Provide explicit details on

- The logistics and transportation plans for the Project by component including:
    - the volume of truck traffic for ore and reagent movement by rail, barge and highway systems including fuel, resupply, and other freight by month
    - a description of the containers to be used for each transportation method; and
    - describe the alternative means of transportation [e.g. is railway is the only option for the movement of the ore south or if trucking by highway may be used].
- Describe any new or upgraded haul road(s) required to connect with the highway from the barge landings and staging areas.
- Indicate what transportation will be contracted out and what will be conducted by the company.

ARCHAEOLOGICAL RESOURCES

- Provide an archaeological impact assessment of the project, including mitigation recommendations for all archaeological sites at risk of direct or indirect impact from project activities.
- Outline an archaeological resources protection plan that will facilitate the continued protection and management of archaeological resources during the operations phase of the project.