

Mackenzie Valley Land and Water Board
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Mackenzie Valley Land
Water Board

File

Application for:

New Land Use Permit

Amendment

JAN 06 2014

Application # MV20140001

1. Applicant's name and mailing address: Avalon Rare Metals Inc. 130 Adelaide Street West, Suite 1901 Toronto, Ontario M5H 3P5		Fax number: 416-364-5162 Copied To <u>MV 1 Reg</u>
		Telephone number: 416-364-4938
2. Head office address: Same as Above Same as above		Fax number: 416-364-5162 Telephone number: 604.484.9139
3. Other personnel (subcontractor, contractors, company staff etc.) Field supervisor: Chris Pederson, P.Geo, Radiotelephone: 867.873.3953 Local Contact: Kelly Cumming, Northern Relations Manager, Mobile: 867.445.6065 Geologist/Alt. Site Supervisor: Martin Heiligmann Construction Contractor: To be determined Contract Workers: Expected Initially 100 persons, increasing to 400persons (maximum) for the main construction phase commencing in 2015. Camp/Expeditor: To Be Determined TOTAL: (Number of persons on site): The Preliminary Construction Camp will accommodate approximately 100 persons on site commencing in the summer of 2014. This Construction Camp will subsequently be enlarged to accommodate 400 persons on site for the main construction phase commencing in 2015. The total duration of construction will be approximately 26 months.		
4. Eligibility (Refer to section 18 of the <i>Mackenzie Valley Land Use Regulations</i>): a)(i) Yes a)(ii) a)(iii) b)(i) b)(ii)		
5. a) Summary of operation (Describe purpose, nature and location of all activities.) Avalon is currently operating an exploration program at the Nechalacho Project site under existing Land Use Permit No. MV2011C0006. Avalon also holds Land Use Permit No. MV2012G0005 to expand its existing airstrip. Avalon is proposing an initial twelve (12) month Preliminary site preparation and construction phase commencing in the second quarter of 2014 that will include: <ul style="list-style-type: none">• Preparation of the laydown area near the dock and early development of the plant site• Construction of the sediment control structures.• Upgrade of the road to the Flotation Plant site• Extension of the airstrip to 1000 m• Establishment of a preliminary 100 person Construction Camp and power supply		

- Construction of a preliminary diesel fuel storage tank (1.4 ML tank) near the dock
- Temporary explosives storage
- Development of the underground decline and associated temporary infrastructure.
- Crushing of mine rock for site preparation
- Initiation of concrete foundation construction for Project infrastructure

Development of the underground decline will involve:

- Extraction of approximately 100,000 tonnes of rock
- Completion of in situ geomechanical testing of ground conditions
- Completion of in situ hydrogeologic testing for groundwater intrusion

Subsequently, in accordance with the anticipated MVLWB Type A permit to be issued for the main construction phase, major earthworks, site preparation, foundation work, main construction camp (expansion to 400 man camp) and main fuel tank farm installation would be undertaken, followed by construction of the Flotation Plant, Tailings Management Facility, underground mine and associated Infrastructure. More detailed information on the Nechalacho Mine and Flotation Plant site is provided in the Updated Project Description (Attachment A Supporting Documentation) The overall Project construction phase is currently anticipated to be completed by the end of 2016.

Figure 1 illustrates the general site plan for Avalon's Preliminary site preparation and construction phase. The main components of this phase of overall Project construction are:

- Preliminary 100 person Construction Camp (new)
- Temporary fuel storage sites (new)
- Temporary surface explosives storage facility (new)
- Portal and underground ramp/decline and associated surface construction/maintenance infrastructure (new)
- Barge unloading area (existing)
- Laydown area near the dock (new)
- Access roads (existing)
- Airstrip expansion (existing)

The Preliminary 100 person Construction Camp will be established within the footprint of the proposed Flotation Plant site as indicated in (Figure 1) (An alternative site is also being considered on previously disturbed land located between the plant site and exploration camp (Figure 1) in an effort to reduce construction noise for mine employees that work two shifts). Existing roads and trails will be used to move equipment and personnel on-site. To efficiently conduct the Preliminary site preparation and construction program, portions of the existing access road between the barge unloading area and the portal/decline construction area will need to be upgraded as necessary to facilitate safe and efficient vehicle transportation in the Project area.

Construction of the preliminary diesel fuel storage tank (1.4 ML tank) near the dock facility will provide sufficient fuel storage for the first full winter of site preparation and construction activities. Fuel will be transferred by fuel truck as required from the lower temporary fuel storage depot to a number of 25,000 litre Enviro-tanks to be located at the main plant site (2-4).

Consumables will be shipped to the site by air, seasonal barging from Hay River and/or by winter ice road. Personnel will be transported to site by air.

The Contractor, under the direction of Avalon, will be responsible for implementation of the Preliminary site preparation and construction phase. Details of the underground decline construction component of the overall construction program are provided in Figures 2, 3, and 4, which illustrate the preliminary Portal Collar Layout, Decline Driving Layout Plan and Decline Driving Layout Section, respectively.

Based on the expectation of good quality ground conditions and no significant permafrost concerns, the construction of the portal is expected to be completed in about 4 months. The main decline ramp is planned to be a 4.6 m x 4.8 m dimension, and is expected to take approximately 12 months to complete..

Water to be used for underground drilling will be drawn from Thor Lake. Waste water in the underground will initially be collected in a sump for precipitation of suspended solids prior to being pumped to the surface and directed into a purpose-built settling pond or tank for further polishing, to ensure compliance with anticipated Class B water licence requirements prior to recycle or release to the downstream receiving environment. The settling pond will be located at least 100 m away from the ordinary high water mark of any permanent waterbody or stream.

5 b) Please indicate if a camp is to be set up. (Please provide details on a separate page, if necessary.)

As indicated previously a new Preliminary 100-person construction camp will be established within the footprint of the proposed Flotation Plant site or alternatively on previously disturbed land located between the proposed plant site and the existing exploration camp. The new preliminary construction camp will have its own generator and modular sewage treatment plant.

The existing exploration camp which was established 30 years ago and is located on the northwest shore of Thor Lake (Figure 1), will continue to be maintained in accordance with LUP No. MV2011C0006. Additional facilities associated with this camp include a 27 kW generator enclosure with standby generator, outhouse, fuel storage area, airstrip with heli-pad and waste storage area. Potable water will continue to be obtained from Thor Lake.

Avalon also re-purposed three historic trailers that are now located near the existing airstrip. These trailers will be utilized for overflow activities and management facilities for the Preliminary Program. These trailers have a single generator for power, a fresh water tank and outhouse facilities.

Fuel (diesel) required for the duration of the Preliminary (12 month) site preparation and construction phase will be transported to the site primarily by barge during the annual open water period (July to October). For the initial winter of operation, 1.4 million litres will be barged to the Nechalacho site in the summer/fall of 2014. Additional fuel as required will be transported to the site during the winter by fuel truck via the winter ice road.

6. Summary of potential environmental and resource impacts (describe the effects of the proposed land-use operation on land, water, flora & fauna and related socio-economic impacts). Use separate page if necessary.)

Clearing of trees and leveling of terrain will be necessary for the Preliminary site preparation and construction phase. The overall Project footprint will be kept to a minimum and existing trails/roads and previously disturbed areas will be utilized as much as possible.

The total new area to be cleared during the Preliminary site preparation and construction phase is approximately 40 hectares. This includes about 5 hectares located in the vicinity of the laydown and temporary fuel storage areas adjacent to the barge unloading area and approximately 35 hectares at the Flotation Plant site area, which will initially house the Preliminary 100 person Construction Camp and the portal/decline construction site. Waste rock from the adit will be used for site preparation and excess rock will be stored in the proposed temporary waste rock stockpile to be located at the Flotation Plant site.

Subject to approval, tree clearing activities will be undertaken in the winter of 2014, outside of the May 9 - August 15 period, to prevent accidental mortality of adults, eggs, and pre-fledged young of SARA listed species (e.g. Common nighthawk, Olive-sided flycatcher, Rusty blackbird, etc.) as well as other upland breeding birds. Felled trees will be bucked up and laid flat on the ground so as not to impede wildlife.

All fuel will be stored in conformance with CCME's Environmental Code of Practice for Aboveground and Underground Storage tank systems (CCME 2003). Avalon's current Spill Contingency Plan for the overall Nechalacho Project has been updated to reflect additional activities associated with the Preliminary site preparation and construction Program. A copy of this Plan is provided in Attachment G (Supporting Documentation). Sediment and erosion control measures such as those measures currently being implemented under existing LUP MV2011C0006, will be in place to ensure that potential effects to the aquatic environment are effectively mitigated.

As part of Avalon's comprehensive Health, Safety and Environment induction program, all personnel will be instructed to avoid potential interactions with wildlife. All wildlife observations will be documented and records will be kept in the camp and will be available for inspection at any time.

To minimize any potential for direct and indirect impacts related to habitat and wildlife, Avalon will implement the following mitigation measures for the Preliminary site preparation and construction program:

- Stockpile organics salvaged during site preparation for use in future reclamation activities.
- No hunting policy for all project employees and contractors while working on-site.
- Follow the current standard aircraft procedures for flying in and departing from the site.
- Maintain a minimum flight altitude of 600 m during all times, except during take-off and landings.
- Implement speed limits on all site roads.
- All airstrip-related transportation activities to give the right-of-way to any wildlife including barren-ground caribou that such activity may encounter.
- Alert system to warn personnel of barren-ground caribou or any wildlife in the local area by relaying sighting information to vehicles and equipment operators and on-site personnel to avoid the area, if possible.
- Educate all contract employees of wildlife related policies and mitigation.
- Incinerate all waste foods and human garbage consistent with current industry good management practices to minimize predator attraction to the local area.

With adherence to mitigation as discussed above, potential environmental effects will be minimal with no significant residual environmental impacts expected to occur.

Descriptions of the existing biophysical environmental conditions of the area of interest have been compiled from numerous studies that have been conducted since the late 1980's. Stantec conducted the most recent round of baseline studies in the proposed Nechalacho Mine and Flotation Plant site area starting in 2008 through 2011 and EBA engineering initiated follow-up work in 2010. The complete "Environmental Baseline Reports - Volumes 1-6", the Developers Assessment Report (DAR) and all associated MVEIRB process documentation are found on the MVEIRB's public registry at www.reviewboard.ca

Avalon is committed to developing the Project based on modern CSR principles and reporting on its performance in its annual Sustainability Reports. These CSR principles include commitments to minimize environmental impacts, ensuring the health and safety of employees, maximizing benefits for local communities and providing full transparency in its social and environmental performance.

Avalon is also actively negotiating with local Aboriginal groups and government agencies to develop business, training and employment opportunities for local people and a comprehensive agreement with the Deninu K'ue First Nation has already been signed. Avalon will continue its practice of employing and training a Northern and Aboriginal workforce.

As part of this application, Avalon is pleased to provide a copy of Avalon's complete updated list of commitments for the Nechalacho Project as Attachment A1 of the Supporting Documentation.

Archaeological studies near Thor Lake were conducted in 1988, 2011, and 2012. The survey methods included surface surveys; pedestrian transects and limited subsurface testing. Points West Heritage Consulting evaluated the waste rock stockpile area in 2011 and 2012. The ground assessment found generally forested terrain with little variation and no focal points for human use. The PWNHC has evaluated the archaeological studies and has confirmed that the sites have been appropriately managed. A copy of Avalon's Archaeological Sites Protection Plan for the Nechalacho Project, is provided in Attachment P (Supporting Documentation).

7. Proposed restoration plan (please use a separate page if necessary).

The existing site has been subject to regular inspection by INAC (now AANDC) since Avalon exploration activities commenced in 2007. Avalon has conducted its operations to minimize environmental effects, rehabilitated historical (non-Avalon) exploration impacts and has complied with permit conditions and direction provided by AANDC inspectors. Avalon intends to continue this practice to ensure minimal impact to the existing environment of the Project area.

On the assumption that the main Nechalacho Mine Development Project proceeds, the current plan is to use the waste rock produced from portal/decline construction for road, mine infrastructure pad, air strip expansion and tailing dam construction purposes.

A temporary waste rock stockpile has been identified within the proposed footprint and within the drainage basin of the sediment ponds. Following removal and re-use of the waste rock, and on the assumption that the detailed engineering determines this location is not required for operations, the temporary waste rock stockpile area will be progressively reclaimed by loosening exposed, compacted soils, and applying a cover of overburden or stockpiled organics in preparation for re-vegetation. Removal of all the waste rock is expected to be completed within the first year of operations. Further information about the Nechalacho Project is available

on the public registry of the MVEIRB.

If the main Nechalacho Development Project does not proceed, Avalon will reclaim the waste rock stockpile and other cleared areas in accordance with standard, accepted closure and reclamation procedures. The waste rock stockpile will be leveled and covered with available stockpiled overburden. The site would then be re-vegetated. The proposed plan would be reviewed with regulators and Avalon's Aboriginal partners. The site would be monitored to confirm that the re-vegetation efforts have been successful.

Avalon's Waste Rock Management Plan and Conceptual Closure and Reclamation Plan are provided in Attachments E and H (Supporting Documentation), respectively.

8. Other rights, licenses or permits related to this permit application (mineral rights, timber permits, water licenses, etc.)

Avalon Rare Metals holds the following mining leases in the project area:

MINING LEASES AND MINING CLAIM DATA – THOR LAKE PROPERTY				
Lease Number	Area (ha)	Legal Description	Effective Date	Expiration Date
3178	1,053	Lot 1001, 85 1/2	22/05/1985	22/05/2027
3179	939	Lot 1000, 85 1/2	22/05/1985	22/05/2027
3265	367	Lot 1005, 85 1/2	2/3/1987	2/3/2029
3266	850	Lot 1007, 85 1/2	2/3/1987	2/3/2029
3267	1,040	Lot 1006, 85 1/2	2/3/1987	2/3/2029
TOTAL	4,249			

Avalon also holds the following mineral claims:

Mineral Claim Number	Mineral Claim Name	Claim Sheet Number	Mining District
K12405	Angela 1	85I2	Mackenzie
K12406	Angela 2	85I2	Mackenzie
K12407	Angela 3	85I2	Mackenzie

9. Proposed waste disposal methods.

Wastes from the Preliminary Construction Camp and other site preparation and construction activities will be disposed of in accordance with the updated Waste Management Plan for the overall Nechalacho Project which is provided in Attachment C (Supporting Documentation).

a) Garbage:

Burned on site at existing exploration camp twice per day, remainder transferred to municipal landfill in Yellowknife.

b) Sewage (Sanitary & Grey Water):

Grey water and sewage will be treated with a modularized Sewage Treatment Plant prior to discharge to the downstream receiving environment.

c) Brush & trees:

Bucked up and laid on ground.

d) Overburden (Organic soils)

Stockpiled for future use for reclamation.

10. Equipment

Surface construction equipment is expected to include:

Emergency Response Vehicle	1
Pick-up trucks	4
Haul Trucks	2
Dozers	4
Front-end Loaders	2
Fuel tanker truck	1
Rock Crusher	1
Rock Grinding Mill	1
Concrete Batch Plant	1

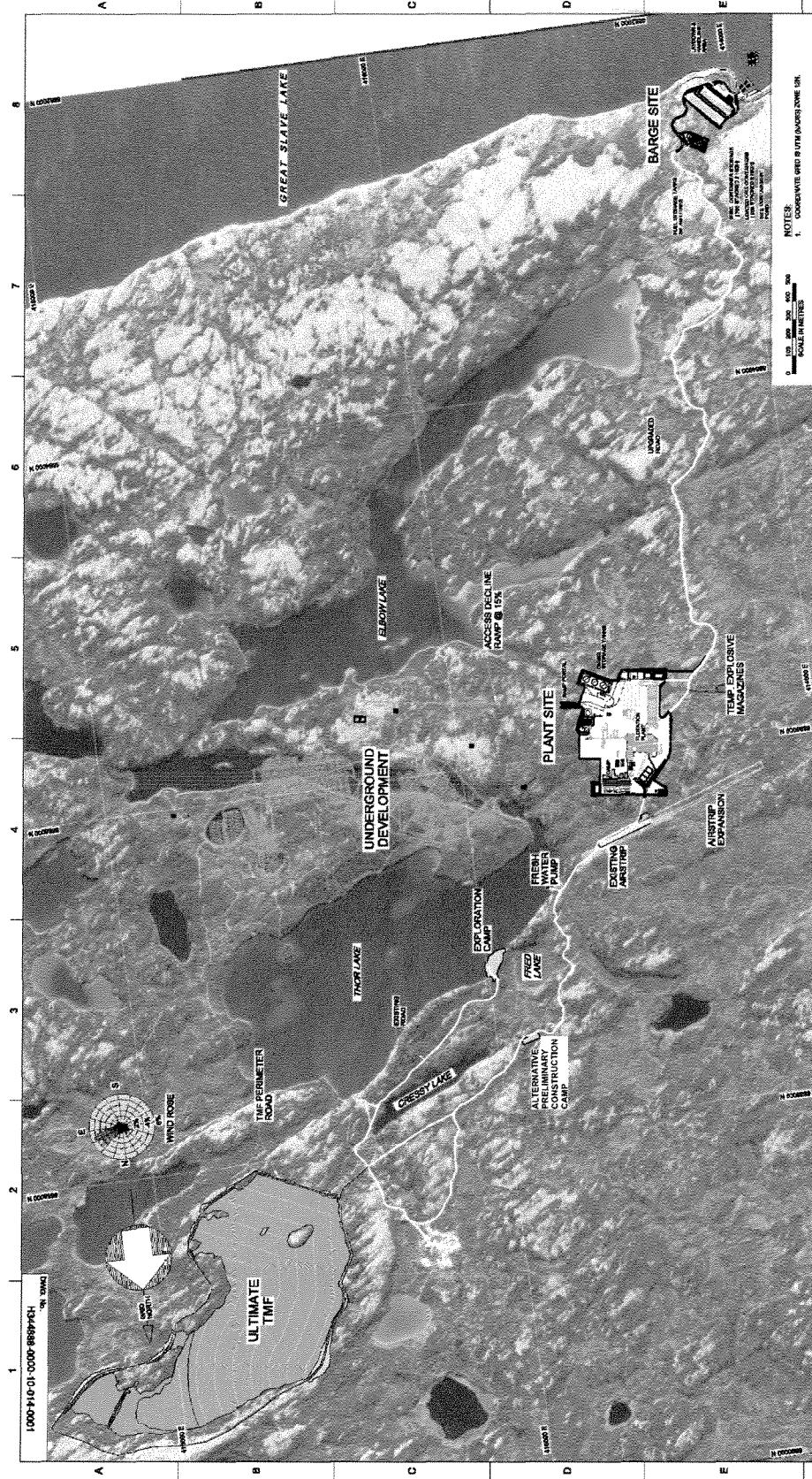
The anticipated mine equipment list is expected to include:

Haulage Truck	6
LHD	4
Development Jumbo	3
Boom Bolting Jumbo	2
Deck Bolting Jumbo	2
Production Drill	2
Development ANFO Loader	2
Production ANFO Loader	2
LHD	1
Scissor Deck	2
Boom Truck	2
Crew Carrier	2
Personnel Vehicles	2
Production Blasting Crew	1
Backfill Crew	1
Electrician Vehicle	1
Mechanics Service	2
Technical Staff	2
Mine Supervision	2
Backhoe	2
UG Fork Lift	3
Fuel/Lube Truck	1
Shotcrete Sprayer	1
Transmixer	1
Grader	1
Remote Block Holer	1

11. Fuels				
Fuel Type	Number of containers	Volume	Capacity of containers	Location
Diesel	1	1.4 ML	1.4 ML	Temporary bulk fuel storage area
Diesel	5	125,000 litres	25,000 litre Enviro-tanks	1 located at the Preliminary Construction Camp and 2-4 located at the Portal/Decline construction site

12. Containment fuel spill contingency plans. (Please attach separate contingency plan if necessary).
<p>As previously described, fuel required for the Preliminary site preparation and construction phase will be transported to the site primarily by barge in the summer and late fall of 2014. Approximately 1.4 million litres of winter diesel fuel storage is anticipated to be required. The fuel will be stored in one) 1.4 ML fuel storage tank to be located at the temporary bulk fuel storage depot.</p>
13. Methods of fuel transfer (to other tanks, vehicles, etc.)
<p>Fuel will be transferred by fuel truck as required from the lower temporary fuel storage depot to a number of 25,000 litre Enviro-tanks to be located at the Portal/Decline construction site (2-4) and the Preliminary Construction Camp site (1).</p> <p>All fuel will be stored in conformance with CCME's Environmental Code of Practice for Aboveground and Underground Storage tank systems (CCME 2003). Avalon's current Spill Contingency Plan for the overall Nechalacho Project has been updated to reflect additional activities associated with the Preliminary site preparation and construction Program. A copy of this Plan is provided in Attachment G (Supporting Documentation).</p>
14. Period of operation (includes time to cover all phases of project work applied for, including restoration)
<p>Subject to MVLWB authorization, Avalon anticipates that the Preliminary site preparation and construction infrastructure components (including the camp, fuel storage facilities, construction and mining equipment and consumables and fuel would be moved to site primarily by barge in the summer and late fall of 2014.</p> <p>Construction of the portal and underground ramp/decline is anticipated to extend from October 2014 to the end of February 2015. If the main Nechalacho Development Project does not proceed, reclamation of the lands disturbed by the Preliminary site preparation and construction program would be initiated upon the decision not to proceed with the project.</p>
15. Period of permit (up to five years)
<p>Avalon is proposing a twelve (12) month Preliminary site preparation and construction phase commencing in the Summer of 2014, followed by continued construction of the remainder of the Nechalacho Mine and Flotation Plant Project infrastructure, to be completed by the end of 2016.</p> <p>However, Avalon wishes to note that to complete this Preliminary site preparation and construction phase, Avalon needs to secure interim financing. Furthermore, Avalon cannot account for unexpected delays due to acts of God or equipment breakdowns. Avalon is therefore requesting for the normal permit issuance period of five (5) years. When the permit is no longer required, a discontinuance notice (as per s.37 of the Regulations) can be provided to the MVLWB by the Permittee.</p>
16. Location of activities by map co-ordinates (attached maps and sketches) Please see attached maps.

Minimum latitude (degree, minute): 62°03'31" N	Maximum latitude (degree, minute) 62°40'76" N								
Minimum longitude (degree, minute) 112°32'30" N	Maximum longitude (degree, minute) 112°39'21" N								
Map Sheet no. 85 I/2 The proposed activities are centred at latitude 62° 05'56"N and longitude of 112°35'37" W.									
<p>17. Applicant Print name in full Mark Wiseman  Signature: Date: December 19, 2013 On behalf of Avalon Rare Metals Inc.</p>									
<p>18. Fees Type A - \$150.00 ** Type B - \$150.00 ** (**Application Fees are Non-Refundable**)</p> <table> <tr> <td>Application fee</td> <td>\$150.00</td> </tr> <tr> <td>Land use fee: 40 minus 2 hectares = 38 @ \$50.00/hectare</td> <td>\$1900.00</td> </tr> <tr> <td>Assignment fee: \$0.00</td> <td>\$0.00</td> </tr> <tr> <td>Total application and land use fees</td> <td>\$2050.00</td> </tr> </table> <p><i>Please make all cheques payable to "Receiver General of Canada"</i></p>		Application fee	\$150.00	Land use fee: 40 minus 2 hectares = 38 @ \$50.00/hectare	\$1900.00	Assignment fee: \$0.00	\$0.00	Total application and land use fees	\$2050.00
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Assignment fee: \$0.00	\$0.00								
Total application and land use fees	\$2050.00								



NECHALACHO PROJECT			
Nechalacho Mine and Flotation Plant General Arrangement			
CLIENT	AVALON	PROJECT NO.	V1510102/04
OFFICE	EBA-VANC	DATE	December 13, 2013
NOTES:	Coordinate grid BLM 100Z zone 10N.	REV.	0
SOURCE:	Consult Mine Site General Arrangement Plan Rev. A (Inches, 2013)	MEZ	0
STATUS:	ISSUED FOR USE	SL	0
ISSUED:	TETRA TECH COMPANY	DATE	
		FIGURE	1

