

## Review Comment Table

<b>Board:</b>	MVLWB
<b>Review Item:</b>	North American Tungsten Corporation Ltd. - Water Licence (Renewal) - MV2015L2-0003
<b>File(s):</b>	<a href="#">MV2015L2-0003</a>
<b>Proponent:</b>	North American Tungsten
<b>Document(s):</b>	<a href="#">Water Licence Application</a> (9mb) <a href="#">Work Plan</a> (69kb) <a href="#">Appendix B - Mining Questionnaire</a> (21 mb)
<b>Item For Review Distributed On:</b>	Apr 27 at 16:55 <a href="#">Distribution List</a> Apr 27 at 16:55 <a href="#">Distribution List</a> Apr 27 at 16:55 <a href="#">Distribution List</a>
<b>Reviewer Comments Due By:</b>	May 26, 2015
<b>Proponent Responses Due By:</b>	June 10, 2015
<b>Item Description:</b>	<p><b>June 9, 2015:</b> Upon request from NATCL, the deadline for responses to reviewer comments was extended until June 10, 2015.</p> <p><b>May 11, 2015:</b> Board staff would like to remind reviewers to include comments and recommendations on Cantungs <i>S4-44 Water Quality Assessment Report</i> with their comments and recommendations on the "Renewal" Application. This Report is about, "NATCLs ability to meet water quality objectives" in it's Water Licence. Cantung has referred to this report in its Application but the report has not gone through a formal review process.</p> <p><b>April 27, 2015:</b> On April 21, 2015, North American Tungsten Corporation Ltd (NATCL) submitted an Application for Water Licence MV2015L2-0003 to the Mackenzie Valley Land and Water Board (Board) to renew their existing Water Licence MV2002L2-0019, which expires January 29, 2016. The main purpose of this Application is to renew the term and update and modernize the existing Licence to allow NATCL to continue mining and milling. This Application and a draft work plan have been uploaded to this</p>

	<p>review.</p> <p>Board staff reminds reviewers that this Application is to renew the current Water Licence MV2002L2-0019, as the Minister of GNWT-ENR has not yet distributed his decision regarding the recent amendments requested by NATCL regarding the dry stack tailings facilities.</p> <p>Board staff note that all documents that have been uploaded to this review are also available on the public registry.</p>
<b>General Reviewer Information:</b>	<p>Please use the ORS to provide comments and recommendations to the Board regarding this Application, the draft work plan, and whether this Application should be exempt from preliminary screening under Part 5 of the MVRMA.</p> <p>Please contact Jen at <a href="mailto:jpotten@mvlwb.com">jpotten@mvlwb.com</a> and Julian at <a href="mailto:jmorse@mvlwb.com">jmorse@mvlwb.com</a> with questions.</p>
<b>Contact Information:</b>	<p>Angela Plautz 867-766-7459  Jen Potten 867-766-7468  Julian Morse 867-766-7453  Lindsey Cymbalisky 867-766-7471  Tyree Mullaney 867-766-7464  Zabey Nevitt 867 7667457</p>

## Comment Summary

North American Tungsten (Proponent)				
ID	Topic	Reviewer Comment/Recommendation	Proponent Response	Board Staff Response
1	General File	<b>Comment</b> ( <a href="#">doc</a> ) NATCL - Cover Letter Response Submission <b>Recommendation</b>		
2	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 1 - Revised Table 2 <b>Recommendation</b>		

3	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 2 - Nitrite Investigation <b>Recommendation</b>		
4	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 3 - Fluoride Responses <b>Recommendation</b>		
5	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 5 - Total Aluminum Chart <b>Recommendation</b>		
6	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 6 - TP4 Foundation Prep Info <b>Recommendation</b>		
7	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 7 - Hydrogeology Map <b>Recommendation</b>		
8	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 8 - SOP, UG 044 <b>Recommendation</b>		
9	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 9 - SOP, UG 047 <b>Recommendation</b>		
10	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 4a Process Water Quality Data <b>Recommendation</b>		
11	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 4b Surface WQ data <b>Recommendation</b>		
12	General File	<b>Comment</b> ( <a href="#">doc</a> ) Attachment 10 GSC Fluoride map <b>Recommendation</b>		

**Dehcho First Nations: Carrie Breneman**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>
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1	AEMP WL Conditions	<p><b>Comment</b> DFN agrees with NATCL that an Aquatic Effects Monitoring Program will be included in the Water License as part of the renewal process.</p> <p><b>Recommendation</b> DFN recommends that the WL Renewal include the following: "The Licensee shall submit within one year of the effective date of this Licence an Aquatic Effects Monitoring Program (AEMP) Design Plan for approval by the Board. The Aquatic Effects Monitoring Program Design Plan should be developed in accordance with AANDC's "Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the NWT". The Licensee shall adhere to the approved Aquatic Effects Monitoring Program Design Plan and shall annually review the Plan and make any necessary revisions to reflect changes in operations, technology, chemicals or fuels, or as directed by the Board. Revisions to the Plan shall be submitted to the Board for approval. The Licensee shall submit an AEMP Annual Report to the Board for approval on or before (DATE TO BE DETERMINED BY MVLWB) and each year thereafter."</p>	<p><b>June 10:</b> NATCL has no issue with the comment, it is standard wording for Water Licenses. The annual reviews will be internal with a complete review every 3 - 5 years as per AEMP guidelines.</p>	
2	ICRP WL Conditions	<p><b>Comment</b> DFN agrees with NATCL that an Interim Closure and Reclamation Plan (ICRP) be included as part of the Water License Renewal.</p> <p><b>Recommendation</b> "The Licensee shall submit within (time length to be determined by MVLWB) of the Licence being issued an</p>	<p><b>June 10:</b> NATCL acknowledges this is standard working for a water license. Suggest the progress report be required as part of the annual reporting.</p>	

		Interim Closure and Reclamation Plan for approval by the Board. The Licensee shall adhere to the approved Interim Closure and Reclamation Plan and shall annually review the Plan and make any necessary revisions to reflect changes in operations, technology, chemicals or fuels, or as directed by the Board. Revisions to the Plan shall be submitted to the Board for approval. The Licensee shall provide an Annual Closure and Reclamation Plan Progress Report no later than (DATE TO BE DETERMINED BY MVLWB) following the calendar year being reported. A minimum of 24 months prior to the end of Commercial Operations, the Licensee shall submit a Final Closure and Reclamation Plan to the Board for approval."		
3	SNP Site S4-44	<p><b>Comment</b> In Table 2 of the report– There appears to be an error for SNP Station S4-44. The mean value highly exceeds the maximum value for that site and the values are almost identical to SNP Station S4-33.</p> <p><b>Recommendation</b> DFN recommends that NATCL double-check the table and rectify the values in this table.</p>	<p><b>June 10:</b> The values reported for S4-44 (max.=0.087 mg/L, mean=0.012 mg/L) are in fact accurate. However, the values reported for S4-5 (max.=0.037 mg/L, mean=0.096 mg/L) were incorrectly entered as very similar to the S4-33 results (max.=0.037 mg/L, mean =0.0096 mg/L). Upon careful review, it has been confirmed that the actual results for S4-5 are max.=0.094 mg/L, mean=0.0182 mg/L and min.</p>	
4	SNP Site S4-44	<p><b>Comment</b> NATCL acknowledges that they exceeded the maximum limit for nitrite on May</p>	<p><b>June 10:</b> More information has come to light following the initial</p>	

6 2013. NATCL is unsure what the cause of the exceeded concentration of nitrite – they note that it could possibly be mine waste water or a seasonal influx of nutrients into the receiving environment during spring freshet or heavy rain events. On May 6 2013, there was no water sampling from 4 km upstream of the mine site (however the maximum recorded value observed for this station only is 0.006). SNP Station S4-20 (site located at the discharge point for the wastewater treatment facility) recorded a nitrite concentration of 0.909 mg/L, which is consistent with the elevated levels of nitrites found in the Flat River. Also, the concentration of nitrite generally becomes more diluted the further away the samples are taken down river of the Mine Site. May 6, 2013 SNP Water nitrite

SNP Station	Location	Nitrite mg/L
SNP S4-20	Discharge point	0.909 mg/L
SNP S4-44	180m downstream of the final discharge point	1.
1.	480m downstream of the final discharge point	1.
SNP S4-5	1km downstream	1.
SNP S4-33R	3km downstream	1.

In addition, there were nitrite levels experienced at S4-44 that were approaching the

S4-44 report that indicates a strong increase of nitrites on the winter from the mine site discharge WWTF. Investigations into the cause/source of the rise is on-going, with input from chemists and biologists. At this point in time it appears that the reducing conditions that occur in the winter months with ice-on conditions and the nitrogen cycle are the primary reasons for the elevated nitrite levels. Sources of nitrogen are typically explosives and sewage effluent, both are being investigated. A simple solution of increasing the oxygen level in the TP5 is being actively pursued. See Attachment 2 - Nitrite Investigation, for more information on the factors being investigated.

		<p>water quality objective limit of 0.06 mg/L several times in 2013 and 2014. DFN also notes that the water sampling is more frequent at S4-20 (final discharge point for the wastewater treatment facility – culvert that drains from Stinky Pond to the Flat River). At S4-20, there were 15 occurrences where the concentration of nitrite exceeded 0.9 mg/L, however, as there is less sampling at S4-44, there are only 2 corresponding water quality samples at S4-44. These correspond to the May 6, 2013 event described above and September 15, 2014 where the recorded nitrite concentration at S4-44 was 0.032 mg/L.</p> <p><b>Recommendation</b> DFN recommends that NATCL investigate the nitrate concentrations at S4-20 and potential causes for the level of nitrites found at this location.</p>		
5	SNP S4-43	<p><b>Comment</b> Site S4-43 is located directly at the wastewater treatment facility and is sampled weekly. Although nitrite and fluoride are sampled at SNP S4-43 - they are not compliance parameters.</p> <p><b>Recommendation</b> DFN recommends that NATCL provide nitrite and fluoride concentration at SNP 4-43 to further investigate the contribution of mine effluent as the source of the excess nitrite and fluoride concentrations.</p>	<p><b>June 10:</b> Refer to response above regarding Nitrites. Refer to Attachment 3 - Fluoride Response The S4-43 data set from Jan 2013 to Jun2015 is attached for your reference. Attachment 4 - WQ data</p>	
6	Fluoride	<p><b>Comment</b> NATCL has recorded 5 exceeded concentrations of fluoride at S4-44. The current water quality objective for fluoride is 0.12 mg/L. NATCL has recorded that the average</p>	<p><b>June 10:</b> Refer to the Attachment 3 for responses to fluoride questions</p>	

		<p>concentration at S4-20 (final discharge point) is 1.45 mg/L. NATCL asserts that this value is low compared to the concentration of fluoride present at the hot springs and groundwater in the TSF6 area. DFN agrees that there is a contribution of fluoride from mine effluent and natural sources. Given that fluoride concentration increases as you progressively move downstream of the mine site indicates the contribution of natural sources may be significant.</p> <p><b>Recommendation</b> Does NATCL know what the total contribution of fluoride is from the mine vs. natural sources? Is it possible that the influence of the mine is exacerbating or contributing to a stream with an already elevated fluoride content?</p>		
7	Fluoride	<p><b>Comment</b> NATCL has proposed to increase the water quality objective for fluoride from 0.12 mg/L to 1.5 mg/L. NATCL's rationale for a changing the water quality objective to 1.5 mg/L is the following:</p> <ul style="list-style-type: none"> <li>• Using the mean hardness measured at the Cantung mine site (mean 152 mg/L CaCO<sub>3</sub>) the result of the BC formula is; <math>(-51.73 + 92.57\text{Log}_{10}(152)) \times 0.01 = 1.502 \text{ mg/L}</math></li> <li>• The SSD benchmark established by De Beers for Snap Lake is 2.46 mg/L</li> <li>• The maximum acceptable concentration of fluoride for the protection of drinking water set forth by Health Canada is 1.5</li> </ul>	<p><b>June 10:</b> Refer to the Attachment 3 for responses to fluoride questions</p>	

		<p>mg/L</p> <p>DFN is of the opinion that changing the water quality objective for fluoride needs additional research and consideration. We recognize that fluoride toxicity in aquatic invertebrates and fishes increases with increasing fluoride concentration, exposure time and water temperature, and decreases with increasing intraspecific body size and water content of calcium and chloride. Freshwater invertebrates and fishes, especially net-spinning caddisfly larvae and upstream-migrating adult salmon, appear to be more sensitive to fluoride toxicity than estuarine and marine animals. Because, in soft waters with low ionic content, a fluoride concentration as low as 0.5 mg F<sup>-</sup>/l can adversely affect invertebrates and fishes, safe levels below this fluoride/l concentration are recommended in order to protect freshwater animals from fluoride pollution (from Camargo, J. 2003. <i>Fluoride toxicity to aquatic organisms: a review</i>. Chemosphere, Jan 50 (3) 251:61),</p> <p><b>Recommendation</b> DFN recommends that NATCL provide more information on invertebrate and fish species present in the Flat River and their sensitivity to fluoride toxicity. More information is also needed on influence on water temperature and the variability of hardness (CaCO<sub>3</sub>) in the Flat River on fluoride toxicity. Although NATCL used the mean hardness measure in their calculation of an acceptable water quality standard for fluoride – it would be</p>		
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		helpful in evaluating what the standard deviation of CaCO <sub>3</sub> is in the Flat River and also what the range of values are in winter when fluoride levels tend to be higher.		
8	NATCL WL Renewal Letter	<b>Comment</b> <a href="#">(doc)</a> N/A <b>Recommendation</b> N/A		
9	Chromium, zinc and aluminium	<b>Comment</b> NATCL indicated that they had one case of elevated levels of chromium, zinc and aluminium. NATCL also states that "similar elevated results can be observed during these particular sampling events at S4-29 (August 12th, 2014 for Al and Cr; March 4th, 2013 for Zn), indicating a natural, ephemeral cause of these increases." <b>Recommendation</b> DFN would like more information and justification on why NATCL thinks the elevated levels of chromium, zinc and aluminium point to a natural, ephemeral cause of these increases.	<b>June 10:</b> Referring to Attachment 5 - Total Aluminum graph with Flat River sites and the date in August 2013 when the elevated level occurred. This shows S4-29 (located above the effects of the mine) having higher values than that discharged by the mine and higher than the station S4-44. A similar trend occurred in August 2014 - while blew the objective, all sites were elevated for Al. This would indicate a seasonal trend in the natural water cycle.	

**Environment Canada: Lisa Lowman**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>
5	General File	<b>Comment</b> <a href="#">(doc)</a> EC Cover letter <b>Recommendation</b>		
1	Operation, Maintenance and Surveillance Manual (Dec. 31st, 2013): 3.2 Regulatory Administration,	<b>Comment</b> The designated EC Authorization Officer, i.e. Cheryl Baraniecki is outdated and should be updated to reflect the new EC Authorization Officer, i.e, Susanne Forbrich. <b>Recommendation</b> Correction: Authorization Officer, Environmental Protection Operations Division - Prairie and Northern Eastgate Offices,	<b>June 10:</b> The OMS is currently under revision and updated contact information will be included. The OMS revision is scheduled for submission in mid 2015.	

	3.2.1 Regulatory Agencies p 11	9250 49 Street, AB T6B 1K5, Contact: Susanne Forbrich, Email: Susanne.Forbrich@ec.gc.ca		
2	Operation, Maintenance and Surveillance Manual (Dec. 31st, 2013): 6.3 Water Management Systems, 6.3.2 Water Management from TP4 to TP5	<p><b>Comment</b> The Proponent states that "In 2011 a toe drain system was installed along the toe of the berm during the Stage 4 raise, draining into a small seepage collection and at the northwest corner of the TP4 berm. No seepage has ever been noted from this location".</p> <p><b>Recommendation</b> Questions for the Proponent: Does the statement indicate that there is no exfiltration from TP4 &amp; 5? If there is any water infiltration into TP4 &amp; 5, is it possible that the water seeps into the groundwater as opposed to draining through the installed drainage system? If not, please explain the reason for no collection of seepage in this collection pond.</p>	<p><b>June 10:</b> During the construction of the raise for TP4 saturated foundation conditions were discovered. The seepage and the toe drain system described is the response to the foundation conditions in construction and not operational conditions during deposition. There is no collection pond in this location. Attachment 6 provides an excerpt from the Interim TP4 Construction Report, EBA Jan 2008. In 2007 it was discovered that there was no effective exfiltration from TP4 so TP5 was used as an exfiltration pond. Initially there was up to 4000 m<sup>3</sup> of exfiltration from TP5, this has been reduced with the addition of tailings since July 2014. Currently TP5 exfiltration is approximately 2000 m<sup>3</sup>/day.</p>	
3	Operation, Maintenance and Surveillance Manual (Dec. 31st, 2013): 6.3 Water Management Systems, Metal	<p><b>Comment</b> The Proponent states that "the MMER apply to effluent from all final discharge points (FDPs) at the mine site". An FDP is defined in the Regulations as a point beyond which the mine no longer exercises control over the quality of the effluent. In the case of the Cantung Mine site, there is no clear FDP as the effluent (water from the tail ponds) exfiltrates</p>	<p><b>June 10:</b> While exfiltration ponds are grandfathered for the Cantung mine, NATCL has committed to improved tailings management practices with a move away from exfiltration to Dry Stacked Tailings Disposal. The amendment approval for this change is pending</p>	

	Mining Effluent Regulations (MMER)	through the natural ground beneath the tail ponds and joins the existing groundwater flows. <b>Recommendation</b> EC is not in favour of exfiltration.	Ministrial Approval. Cantung does however, already have existing exfiltration ponds that are approved. Exfiltration ha been greatly reduced in the past year. The FDP is the groundwater well between the Tailings Contanment Area and the river, which is the direction of GW flow as per hydrogeology report (EBA2014), and an approved groundwater pumping contingency plan is in place and meets the MMER requirement to collect if the water is not meeting compliance levels. See Attachment 7 - for the Hydrogeo water pathways. Water quality at this FDP meets all MMER criteria and WL criteria.	
4	Waste Rock Management Plan (Jan. 31, 2014), Section 4.0 Water Management - 4.1 Stockpile #1 & 4.2 Stockpile #2.	<b>Comment 4.1</b> Stockpile #1: The Proponent states that "as discussed earlier, the drainage at this location is limited to the drainage ditch to the north and Sardine Creek to the south. The drainage ditch flows into Sardine Creek approximately 750 metres downslope of the waste rock dump. A more detailed description of these drainages is included in the EBA Cantung Mine Water Management & Sediment and Erosion Protection Plan (Dec. 2011). Water quality monitoring is not conducted on the drainage ditch; however water quality is monitored monthly on Sardine Creek upstream of the confluence with the Flat River. Water	<b>June 10:</b> Waste Rock is non-PAG material that is frequently used in surface construction as it does not have contaminats of concern. There is no drainage from the waste rock piles and there is only precipitation contact water. The contact time of any percipitation is very limited due to the highly coarse nature of the waste rock piles. The waste rock dump and stockpiles have been in these locations for many years and there has been no observed impact detected, to date,	

		<p>quality results for this site (SNP-4-32) are reported to the Mackenzie Valley Land and Water Board monthly and annually. In general, the water quality at the Sardine Creek sampling location meets all applicable CCME Guidelines and MVLWB Water Licence parameters". 4.2 Stockpile #2: The Proponent states that "a drainage ditch located along the access road collects all runoff water from the stockpile #2. This drainage ditch eventually flows into Sardine Creek. As discussed in Section 4.1, Sardine Creek is monitored monthly and water quality results meet all applicable CCME Guidelines and MVLWB Water Licence parameters. The results of this sampling point have not been included in this report, but they are a matter of public record and are available through the MVLWB Registry". EC's Conclusion: It appears that the drainage from stockpiles 1&amp;2 flow directly into Sardine Creek, which discharges into Flat River. It is not clear what control the Proponent has once the water discharges into Sardine Creek. Discharges from the stockpiles should be monitored in the drainage ditches (i.e. end of pipe) before they reach or discharge into Sardine Creek.</p> <p><b>Recommendation</b> EC recommends that discharges from stockpiles 1&amp;2 should be monitored for quality before they reach Sardine Creek.</p>	<p>in Sardine Creek monthly sampling. Due to the lithology of the waste rock and the nature of the geology in the Flat River Valley no impacts are expected at the waste rock piles. A seepage survey was conducted in 2014 and the spring of 2015, no observed flow has occurred here. The area will continue to be monitored for flow during the spring and fall surveys.</p>	
Fisheries and Oceans Canada: Julie Marentette				
<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>

1	General	<b>Comment</b> ( <a href="#">doc</a> ) See attached letter. <b>Recommendation</b> None.	<b>June 10:</b> ( <a href="#">doc</a> ) no comment	
2	Water Intake Screens	<b>Comment</b> The Program notes that NATCL's response to question 1.8 of the Mining Industry Questionnaire indicates that the current freshwater intake facility is equipped with 20 mm screens. This appears to be inconsistent with the existing Condition D.3 of Water Licence MV2002L2-0019, which states that "fresh Water intake pumps shall be equipped with a screen with a mesh size sufficient to ensure no entrainment of fish, as outlined in Fisheries and Oceans Canada Freshwater Intake End-of-Pipe Fish Screen Guidelines (2005 [ <i>sic</i> ])." In comments submitted by DFO regarding NATCL's previous Water Licence Renewal, on October 8, 2008, DFO recommended that "The intake screen should be redesigned to be consistent with the DFO Freshwater Intake End-of-Pipe Fish Screen Guideline (1995). The required mesh size is 2.54 mm or 1/10." DFO requests clarification from both NATCL and MWLWB on the rationale for the 20 mm screen, and whether intake screens have been sized in accordance with Condition D.3 since 2008. <b>Recommendation</b> None.	<b>June 10:</b> The screen size openings have been physically verified and are 2.0mm not 20mm. This was a typo - missing decimal.	

**GNWT - Environment and Natural Resources: Central Email GNWT**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>
1	General File	<b>Comment</b> ( <a href="#">doc</a> ) 05-26-15 - ENR Letter to the Board - NATCL -MV2015L2-0003 - ENR Comments		

		<b>Recommendation</b>		
2	Topic 1: Procedural Matters	<p><b>Comment</b> NATCL has submitted an application to renew Water Licence MV2002L2-0019 related to the Cantung mine. Of note, an amendment of the aforementioned Water Licence is currently before the Minister of ENR for decision and as such it is unclear as to the specific activities within the Water Licence renewal that are being reviewed. To be clear, the renewal application submitted by NATCL includes the construction of the dry-stack tailings facility, an undertaking which is currently before the Minister of ENR for decision. As such, ENR's comments are limited to the scope of the currently approved Water Licence MV2002L2-0019 and not related to activities contained within the amendment application.</p> <p><b>Recommendation</b> 1. ENR reserves comment on any activities specific to the ongoing regulatory process related to the dry-stack tailings facilities until such time that a decision has been rendered by the Minister.</p>	<b>June 10:</b> no comment	
3	Topic 2: Plans	<p><b>Comment</b> Regarding the supporting document list, it is unclear if the items are included for the information of the reviewers or if any require approval within, or outside of, the current renewal process. For example, while the application states that "NATCL would like to direct the reviewers' attention to the following documents that are filed on the Public Registry, the most recent and approved versions are</p>	<b>June 10:</b> The list provided for the information on the registry are approved and not for approval review but for reference with respect to the WL application and the Cantung mine project. There are several management plans that are under revision which will be submitted shortly for review and	

		<p>available for review", there are documents, such as the S4-44 Evaluation Report, which ENR was not aware of prior to the renewal application.</p> <p><b>Recommendation 1.</b> ENR requests that the Board or Proponent provide clarification on the status of the individual plans and reports listed and specify any for which review or approval may be required.</p>	<p>approval. The approval of the Management Plans will be thru a seperate review process. The list provided in the original submission shows the plans listed, the approval status, and the pending annual review dates.</p>	
4	<p>Topic 3: S4-44 Evaluation Report â€™ Nitrite</p>	<p><b>Comment</b> The S4-44 Evaluation Report notes that there was only one exceedence of the nitrite SSWQO of 0.06 mg/L, which occurred in May 2013 with a concentration of 0.087 mg/L. It is unclear if this was linked to a natural event or circumstances related to a higher than normal discharge at S4-20 (final discharge point).</p> <p><b>Recommendation 1.</b> ENR requests additional information related to the nitrite concentrations in May 2013, specifically a comparison of nitrite levels upstream and downstream of S4-44 during that time period and any information on effluent concentrations during that time.</p>	<p><b>June 10:</b> Refer to previous response to DFN comments and the Attachment 2 for discussion on nitrites, also included are WQ results in Attachment 4.</p>	
5	<p>Topic 4: S4-44 Evaluation Report â€™ Fluoride</p>	<p><b>Comment</b> The S4-44 Evaluation Report references the fluoride SSWQO for Snap Lake. ENR notes that fluoride values for Snap Lake were developed on a site-specific basis and has the following concerns with the application of those fluoride objectives to the Flat River: . In its Reasons for Decision for the 2011 Snap Lake water licence renewal, the MVLWB accepted the CCME Guideline value of 0.12 mg/L as an appropriate SSWQO for Snap Lake. To date, there have been no approved changes to effluent</p>	<p><b>June 10:</b> Noted. However, even without the specific work at Snap Lake the background conditions in and around the Flat River for flouride stands for itself and clearly demonstrates that the natural flouride levels far exceed the early suggested SSWQO for the Cantung mine project. Additional information is included in Attachment 3.</p>	

		<p>quality criteria for fluoride in the Snap Lake licence, although it is recognized that another amendment is forthcoming in which revisions to the Fluoride EQC may be recommended by the Board for Ministerial approval. . De Beers has an updated project description before the MVLWB in which the originally proposed fluoride SSWQO of 2.46 mg/L has been revised. This value was never under consideration within the regulatory process as an updated proposal which was required post-EA included an SSWQO of 1.5 mg/L related to drinking water quality. . The Report of Environmental Assessment also included requirements for the protection of aquatic life which De Beers concluded to be 1.94 mg/L (McPherson et al. 2014), however, the results of this study are currently under review. . Furthermore, the acceptance of site-specific benchmark studies is dependent on the applicability of the study to the resident species of the receiving water body. Given the presence of Bull Trout within the Flat River and their current status - Federal Species at Risk Act : Under Consideration; COSEWIC Assessment : Special Concern, NWT General Status Rank : May Be At Risk (<a href="http://www.nwt-species-at-risk.ca/en/content/bull-trout">http://www.nwt-species-at-risk.ca/en/content/bull-trout</a>), it would be inappropriate to arbitrarily apply SSWQOs developed for another water body to the Flat River. Reference: Mcpherson, C., D. Lee, P. Chapman. 2014. Development of a fluoride chronic effects benchmark for aquatic life in freshwater. Environ Toxicol Chem</p>		
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		<p>33:2621-2627.</p> <p><b>Recommendation 1.</b> ENR advises that the site specific work conducted for fluoride within Snap Lake is not applicable to the Flat River for the reasons outlined above.</p>		
6	<p>Topic 5: S4-44 Evaluation Report          ‘ Fluoride</p>	<p><b>Comment</b> While the Snap Lake example is not applicable to the Flat River, ENR notes that there may be a case for the establishment of a site-specific water quality objective based on background conditions. For example, in Table 3 of the Report, data indicate that fluoride concentrations continue to increase further downstream of the final point of discharge. Should NATCL wish to propose a revised SSWQO for the Flat River, additional information should be provided. Specifically, NATCL should provide detailed information on potential sources of fluoride to the Flat River that may be influencing local water quality, i.e. hot springs, groundwater, mine effluent, etc. This review should include an evaluation of the relative contribution of each source to the overall fluoride concentration in the Flat River. Also, NATCL should provide any information on any changes, or lack thereof, to fluoride concentrations post-installation of the water treatment plant and commencement of effluent discharge as opposed to the previous method of exfiltration (i.e. have fluoride concentrations downstream varied since the commencement of effluent discharge.).</p> <p><b>Recommendation 1.</b> ENR recommends that additional information be required as outlined</p>	<p><b>June 10:</b> Additional information regarding fluoride is provided in Attachment 3 and provided WQ data in Attachment 4. The revised proposed SSWQO is 1.22 mg/L, based on additional data and general loading calculations.</p>	

		above should NATCL wish to proceed with the development of a revised SSWQO for the Flat River based on background conditions.		
7	Topic 6: Metals	<p><b>Comment</b> Table 11 shows exceedances of the SSWQO for aluminum, chromium and zinc. It is unclear if an amendment is being requested for these parameters. Additionally, it is unclear how these concentrations relate to values upstream and at end of pipe. The table provided is difficult to review given the format.</p> <p><b>Recommendation 1.</b> ENR requests that the proponent provide additional information on the SSWQO exceedances of aluminum, chromium and zinc related to values upstream and at the final discharge point, similar to information that was identified previously for fluoride to assist in determining source.</p>	<p><b>June 10:</b> A review of this data is in progress, NATCL hopes to present more specific information on these items at the technical session. Comments on the aluminum exceedances is mention in the response to a DFN comment above.</p>	
8	Topic 7: AEMP and ICRP	<p><b>Comment</b> ENR notes that the Water Licence renewal includes timelines for both the Aquatic Effects Monitoring Plan and the Interim Closure and Reclamation Plan. ENR will continue to participate in both working groups that have been established and will continue to provide input as appropriate.</p> <p><b>Recommendation</b> No recommendation in this area.</p>	<p><b>June 10:</b> Thank you for continued participation.</p>	
<b>MVLWB: Jen Potten</b>				
<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>
1	Draft Engagement Plan	<p><b>Comment</b> Board staff understood that NATCL was to submit a draft Engagement Plan on May 1, 2015 which would become part of this renewal application. As of May 25, 2015, this</p>	<p><b>June 10:</b> The Engagement Plan will be submitted at the technical Session.</p>	

		has not been submitted. <b>Recommendation</b> Please submit the draft Engagement Plan as committed to.		
2	Draft ICRP	<b>Comment</b> Board staff note that a draft ICRP was submitted to the Board in April, 2015, which is consistent with the schedule attached to the renewal application. <b>Recommendation</b> Please clarify whether the phased reviews of the ICRP outlined in the ICRP schedule are intended to be conducted as Board processes, or whether these drafts will be reviewed through an external process.	<b>June 10:</b> NATCL intends to conduct the draft revisions and reviews external to the MVLWB review process until submission of the ICRP in 2016 which will be submitted for approval. NATCL is open to an alternative review process.	
3	Explosives Management	<b>Comment</b> There have been occasional high nitrogen compound results in the discharges and Flat River. <b>Recommendation</b> Does NATCL have standardized procedures for the management of explosives?	<b>June 10:</b> Standard Operating Procedures (SOPs) are used onsite and are attached. Attachment 8 - UG 044 - Explosives Handling Attachment 9 - UG 047 - Explosives Use Awareness	
4	Water Use Limit	<b>Comment</b> The reported water use in the Mining Questionnaire is less than half of the current water use limit of 45,000 m3/week. <b>Recommendation</b> Considering that NATCL must pay water use fees based on the quantity of water licenced, rather than the quantity of water used, please indicate whether the water use limit of 45,000 m3/week continue to be appropriate.	<b>June 10:</b> NATCL would agree to lowering the limit to 30,000 m3/week.	
5	S4-44 Water Quality Assessment Report - Table 2	<b>Comment</b> Some of the numbers presented in Table 2 are inconsistent with those presented in the water quality data attached to the Report. According to the attachment, the mean nitrite concentration at S4-29 should be 0.005 mg/L; and the mean and maximum nitrite	<b>June 10:</b> The differences were an error. The revised table has been provided in Attachment 1	

		<p>concentration at S4-5 should be 0.0182 and 0.094 mg/L, respectively.</p> <p><b>Recommendation</b> Please confirm that this was an error or explain why the numbers in Table 2 differ from the data.</p>		
6	S4-44 Water Quality Assessment Report - Section 1.2 - Fluoride Recommendations	<p><b>Comment</b> NATCL is proposing a fluoride SSWQO of 1.5 mg/L. One of the considerations in recommending this SSWQO is a hardness-based objective calculated using the BCMOE guideline; however, other than stating that the mean hardness of S4-44 is 152 mg/L, there is no discussion of hardness in the Flat River. Additionally, given that fluoride appears to be typically less than 0.2 mg/L at S4-44, the proposed SSWQO seems high. In the interest of determining how to protect aquatic life under varying conditions in the Flat River, further evaluation of a hardness-based objective should be conducted.</p> <p><b>Recommendation</b> Please describe the range of hardness in the Flat River, including upstream and downstream of the mine-site, and noting any seasonal variations. Describe whether discharges from the mine-site affect hardness in the Flat River. Evaluate how the range of hardness conditions observed in the Flat River impacts the proposed SSWQO.</p>	<b>June 10:</b> Refer to Attachment 3 - Fluoride Responses	
7	S4-44 Water Quality Assessment Report - Section 1.2 - Fluoride	<p><b>Comment</b> Although NATCL indicates that fluoride concentrations are naturally elevated in other local inputs to the Flat River, there is no discussion of where the fluoride in the discharge originates. Board staff note that fluoride</p>	<b>June 10:</b> The source of the fluoride is the local and regional geology. As the attached map (GSC 1981) shows, fluoride is found throughout this area in the rocks and water.	

	Recommendations	<p>concentrations are typically high in minewater at S4-42.</p> <p><b>Recommendation</b> Are there any other known sources of fluoride in the mining and milling, and water treatment processes?</p>	<p>There are no chemical additions in the mill or WWTF that are a source of fluoride. Attachment 10 - GSC Map 1981</p>	
8	Qualitative and Quantitative Flat River Risk Assessments	<p><b>Comment</b> During the ICRP workshop in October, 2014, NATCL indicated that it would review the Qualitative Risk Assessment (submitted in March, 2009) to determine whether it still supports this Report as originally submitted.</p> <p><b>Recommendation</b> Please explain NATCL's current position on this submission and propose an approach for proceeding with a risk assessment and options analysis for the historic Flat River tailings.</p>	<p><b>June 10:</b> NATCL believes the best course of action with respect to the Flat River Tailings is to use new data and information. The geochemical load balance and risk assessment will form a basis for the decision, and will then be merged with the information from the EEM (4th cycle) and supplementary ecology info. All components as well as a view to the short-term and long-term risks, available technology and best practices will be considered. All analysis of the data informing the decision regarding the historical tailings will be part of the on-going research under the ICRP and will be reported on annually until a decision and approval is reached.</p>	
9	Part E, items 10 and 11 of current Licence MV2002L2-0019; re groundwater well locations	<p><b>Comment</b> The drilling required by condition was completed and logs were submitted to the MVLWB.</p> <p><b>Recommendation</b> Would NATCL like to maintain these conditions in the renewal Licence as a record of this work, or can they be removed because they have been satisfied?</p>	<p><b>June 10:</b> NATCL agrees this condition could be removed.</p>	

10	Annual Inspections	<p><b>Comment</b> Is a geoprofessional also involved in conducting the annual inspections of Tailings Containment Areas, or other facilities on site, in addition an engineer?</p> <p><b>Recommendation</b> Please clarify.</p>	<p><b>June 10:</b> These have only been conducted by the Engineer of Record - currently Tetra-Tech, EBA. Other geoprofessionals are involved in other aspects and contribute to the mine site in general.</p>	
11	Titles of submissions	<p><b>Comment</b> Throughout the life of Licence MV2002L2-0019 documents submitted to the Board have been, at times, titled differently than that required in the Licence conditions.</p> <p><b>Recommendation</b> Please title NATCL's submissions as identified in the Licence to avoid confusion as to which condition the submission is being made under.</p>	<p><b>June 10:</b> NATCL understands there have been some submissions with modified titles from the WL conditions. The names used on the submissions were the common language used at site. This is so that on-site staff can readily identify the plans they are required to use. NATCL will be careful to improve the naming to match the WL conditions. NATCL may request name changes in the license to ensure employees can readily identify them.</p>	

**Naha Dehe Dene Band: Peter Redvers**

<b>ID</b>	<b>Topic</b>	<b>Reviewer Comment/Recommendation</b>	<b>Proponent Response</b>	<b>Board Staff Response</b>
1	General File	<p><b>Comment</b> (<a href="#">doc</a>) NDDB Letter</p> <p><b>Recommendation</b></p>		