



November 14, 2014

Sonia Aredes
Technical Advisor
Nunavut Water Board
P.O Box 119
Gjoa Haven, NU
X0B 1J0

Dear Ms. Aredes;

Re: Licence No. 1AR-POL0311 – Teck Response to Annual and Quarterly Reports Technical and Administrative Review

It was noted that the Nunavut Water Board's (NWB) letter stated that the integrity of monitoring data is of critical importance. It is noted that the NWB is requesting data that is in some cases over a decade old and is requesting Teck's response regarding this data within 7 days of receiving this request. The majority of information has been provided previously or explanations provided for why it was not previously submitted. Teck respectfully suggests that it would have been more appropriate to have discussed the NWB's concerns about data during the completeness review or technical meeting as opposed to written means 7 days prior to the final comment deadline.

Teck's responses to the requested data are presented in the order that the requests were made in the NWB's letter using the same headings for ease of reference. The data requested in Teck's view is not significant in terms of affecting any considerations related to the renewal of the licence

Monitoring Data to be Re-Submitted by Teck:

Garrow Lake Stratigraphic Monitoring to be Re-Submitted

- May 2004, Maximum Ice Thickness monitoring event: Temperature, pH, conductivity and DO data.
 - *Located an email dated September 20th, 2005 from Brenda Bolton with the requested data in a file titled "January and May 2004 Hydrolab data".*

- May 2005, Maximum Ice Thickness Monitoring Report: Lab analysis data (other than QA/QC) is missing.
 - *Located an email dated September 15th, 2005 from Arlene Laudrum with the data in a file titled "Re: Garrow Lake 2004 results".*
- May 2006, Maximum Ice Thickness Monitoring Report: Data results are illegible.
 - *Located an email dated July 4, 2006 from Randy Baker with the data in a file titled "Re: ALS File X6417 2006 May Polaris Garrow Lake".*

The above 3 sets of missing data have now been submitted to the Manager of Licensing as attachments in an email dated November 14, 2014 and noted as email 1 of 3

Annual Geotechnical Inspection Report to be Re-Submitted

- The 2010 3rd Quarter Report, Appendix 7, "2010 Annual Geotechnical Inspection" by Golder Associates is not on file.
 - *The report is attached to a file submitted to the Manager of Licensing in an email dated November 14, 2014 and noted as email 2 of 3*

Monitoring Data Not on File:

Garrow Lake Stratigraphic Monitoring:

- Garrow Lake Center Water Quality Monitoring (station 262-3)
 - 2003, Mid Winter and Maximum Ice Thickness monitoring events: Full metal MS-ICP and cyanide data.
 - *The Mid Winter sampling would have been done under the previous water licence which did not require the requested sampling analysis. Teck was not notified of the new Water Licence approval and the terms of the licence until April 24th 2003. As a result, the April/May monitoring of Garrow Lake in compliance with the new requirements for full metal scans were not implemented until the minimum ice thickness monitoring event. The 2nd Quarter report submitted stated that there was no stratigraphic monitoring of Garrow Lake required in the quarter and then a letter dated December 22, 2003 letter from the Water Board titled "Review of the 1st and 2nd Quarter Polaris Mine Decommissioning and Reclamation Progress Reports" that stated "The structure and content of the reports appear to meet the information requirements cited in the Licence NWB1POL0311.....". Sampling had been done following the requirements of the 1994 Water Licence.*
 - 2003, Maximum Melt Monitoring data
 - *There were equipment problems that caused the sampling to be delayed and then the freezing of Garrow Lake began making it unsafe to access the lake for the required sampling so the monitoring data was not collected. These events were reported in the 3rd and 4th Quarter 2003 reports filed with the Water Board.*

- 2004, Maximum Melt Monitoring data
 - *In the summer of 2004, it was unusually cold and as a result the ice became thin on the lake but did not become ice free. The thin ice precluded being able to safely sample the lake. This information was previously provided in the annual report.*
- 2005, Maximum Melt Monitoring Event – cyanide monitoring data
 - *Teck referred back to the original lab reports and there was no data for cyanide. Either Teck omitted requesting it or the lab missed it, but in any event, there is no lab data for cyanide for this monitoring event, which is of no consequence as cyanide is not an issue given the large body of monitoring data over time.*
- 2005, 2006, 2007, 2008, 2009, 2010 and 2011 Mid-Winter monitoring data
 - *Beginning in 2005 and beyond, the island is not inhabited. The only means of access would be by charter aircraft. Landing on an uninhabited island, on a decommissioned airstrip in the dark is not safe and so no attempts at sampling during this time of the winter were attempted. This was reported and explained in the applicable quarterly reporting each year.*
- 2007 Maximum Ice Thickness monitoring event for temperature, dissolved oxygen and cyanide monitoring data.
 - *The C of C submitted to the lab missed requesting cyanide analysis. While it is a licence requirement, there is no lab data for cyanide for this monitoring event, which is of no consequence as cyanide is not an issue given the large body of monitoring data over time.*
 - *As for the temperature and dissolve oxygen levels, I cannot find any record from the 2007 maximum ice sampling by the Hydrolab instrument. I can remember that one summer, it failed on us and we didn't get any data but I don't see any reference to this for 2007 in our files.*
- 2008 Maximum Ice Thickness monitoring event: Temperature, dissolved oxygen and cyanide monitoring data.
 - *The Excel file titled "2008 May Polaris Garrow Lake Hydrolab results.xls" is attached to an email submitted to the Manager of Licensing dated November 14, 2014 and noted as email 3 of 3*
 - *Cyanide data was not included as a parameter for the lab to analyze for in the samples submitted so no data is available for this monitoring event.*
- 2008, Maximum Ice Melt monitoring event, cyanide data
- *The C of C submitted to the lab missed requesting cyanide analysis:*
 - *While it is a licence requirement, there is no lab data for cyanide for this monitoring event, which is of no consequence as cyanide is not an issue given the large body of monitoring data over time.*
- 2011 Maximum Ice Thickness monitoring data
 - *The 2011 Maximum Ice thickness monitoring event was missed for the first time since post-reclamation monitoring began in 2004. In the 2nd Quarter report a full explanation of the sequence of events which were largely beyond our control*

resulted in not being able to be undertaken despite our best intentions and efforts. Please refer to the 2nd Quarter Water Board report for a full explanation.

- Garrow Lake South Water Quality Monitoring (station 262-3a)
 - 2003 Mid-Winter, Maximum Ice Thickness and Maximum Melt Monitoring Data
 - *Refer to the response for the same question related to the Garrow Lake Centre Water Quality Monitoring Station 262-3.*
 - 2004, Maximum Melt Monitoring data
 - *Refer to the response for the same question related to the Garrow Lake Centre Water Quality Monitoring Station 262-3.*
 - 2005 Maximum Melt Monitoring event: cyanide monitoring data.
 - *Refer to the response for the same question related to the Garrow Lake Centre Water Quality Monitoring Station 262-3.*
 - 2005, 2006, 2007, 2008, 2009, 2010 and 2011 Mid-Winter monitoring data
 - *Refer to the response for the same question related to the Garrow Lake Centre Water Quality Monitoring Station 262-3.*
 - 2007 Maximum Ice Thickness monitoring event: temperature, cyanide, and dissolved oxygen data;
 - *Refer to the response for the same question related to the Garrow Lake Centre Water Quality Monitoring Station 262-3.*
 - 2008 Maximum Ice Thickness monitoring event; temperature, dissolved oxygen, and cyanide monitoring data;
 - *Refer to the response for the same question related to the Garrow Lake Centre Water Quality Monitoring Station 262-3.*
 - 2008 Maximum Ice Melt monitoring event; cyanide data;
 - *Refer to the response for the same question related to the Garrow Lake Centre Water Quality Monitoring Station 262-3.*
 - 2011 Maximum Ice Thickness monitoring data;
 - *Refer to the response for the same question related to the Garrow Lake Centre Water Quality Monitoring Station 262-3.*

Effluent Monitoring and Receiving Environment Monitoring from Final Discharge Point, (FDP)

- Water quality data for receiving environment from Final Discharge Point (station 262-7a):
 - 2006, 2007, 2008, and 2009 monitoring data
 - *2005 was the last year that the site was under the Metal Mining Effluent Regulations. To exit these regulations, Teck was required to demonstrate to the satisfaction of Environment Canada that the effluent discharging to the receiving environment was not having an impact on the receiving environment. In 2006 Teck received notification that Polaris had met the Recognized Closed Mine reporting requirements through the Final EEM Interpretive Report. Teck for a period of time incorrectly believed that as the Water Licence was mirroring the MMER requirements for monitoring that release from the requirements for monitoring the receiving environment at station 262-7a was no longer required and so data was not collected for the years noted.*

- 2011 field temperature not in file
 - *In 2011 we had trouble with the local contractor hired to collect water sample data and so we are lacking temperature data as a result from this station.*
- Effluent Monitoring data:
 - 2010 field temperature not in file
 - *Had limited temperature data from 2010 due to poor field record keeping. Temperature data was located in our files for the following sampling events:*
 - *August 15th was 2.2^oC*
 - *August 23rd was 3.2^oC*
 - *August 27th was 4.2^oC*
 - *September 2nd was 2^oC*
 - 2011 field temperature not in file
 - *In 2011 we had limited temperature data from 2010 due to poor field record keeping. However was able to find the following data:*
 - *July 23rd – Creek temperature was 6.7^oC*
 - *September 2nd – Creek temperature was 2.2^oC*
 - *September 7th – Creek temperature was 2.2^oC*

Annual Geotechnical Inspection Reports:

- 2004 Annual Geotechnical Inspection Report
 - *An annual inspection was done between August 25th and August 28th in 2004 during the reclamation activities and a draft report was initiated. However, Teck was not successful in getting a finalized report from the consultant hired to undertake the inspection. This was previously explained to the Water Board in annual reporting. Annual geotechnical reports were completed and submitted to the Water Board from 2005 to 2011 inclusive and in 2014. It should also be noted that final work on engineered structures were completed in 2014 and were documented in as-built records submitted to the Water Board.*

If there are further questions regarding data, please don't hesitate to contact me.

Sincerely,



Bruce Donald
Manager, Legacy Properties, Environment
Teck Resources Limited

C.c. David Hohnstein, Nunavut Water Board (david.hohnstein@nwb-oen.ca)
Phyllis Beaulieu, Nunavut Water Board (phyllis.beaulieu@nwb-oen.ca)
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