



May 10, 2018

File: 7001837

BC Hydro & Power Authority  
c/o Greg Scarborough  
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Dear Mr. Scarborough:

**Re: RSEM R5b end-of-pipe Water Quality Exceedances  
Site C Clean Energy Project**

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British Columbia Hydro and Power Authority (BC Hydro) is the holder of Conditional Water Licences 132990 and 132991 (the Water Licences) that authorize the construction and operation of the Site C Clean Energy Project (the Project). The Project includes the development of numerous areas for the relocation of surplus excavated material (RSEM).

RSEM R5b, constructed under Leave to Commence Construction (LCC) #2, issued June 29, 2016, includes a potentially acid generating bedrock (PAG) contact water sediment pond, which discharges into the Peace River in accordance with section 7.2.2 of the Construction Environmental Management Plan's (CEMP's) Appendix E - Acid Rock Drainage and Metal Leachate Management Plan, Revision 5.2, dated July 26, 2016.

Since April 9, 2018 concentrations of zinc and cadmium in daily water samples collected from RSEM R5b end-of-pipe discharge have continuously exceeded the discharge permit limits specified in section 7.2.2 of the CEMP Appendix E. The licensee's qualified professional (QP) has indicated that the elevated concentrations are attributed to PAG run off from the Approach Channel benches on the right bank.

Exceedance reports indicated a number of options for response/adaptive management including:

- water treatment of the PAG-contact runoff (the treatment facility is "in the process of being mobilized to site");
- in March snow was removed from the approach channel benches in effort to minimize water flow through and over the banks; and
- a potential increase to the water holding capacity of the Approach Channel trenches to decrease the amount of water reporting to the RSEM R5b pond.

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Ministry of Forests, Lands,  
Natural Resource Operations  
and Rural Development

Resource Stewardship Division

Water Management Branch  
Water Allocation and Utility  
Regulation Section

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There is no set date for the commissioning of a mobile water treatment facility, and despite adaptive management efforts elevated concentrations of cadmium and zinc persist.

Given that concentrations continue to exceed the applicable discharge limits and have done so on a continuous basis since April 9, 2018, there is concern that this water may be resulting in adverse effects to fish and fish habitat in the Peace River immediately downstream of the discharge outlet. Accordingly, additional sampling and testing is warranted at this location to ensure there are no acute toxicity effects associated with discharge from the RSEM R5b sediment pond.

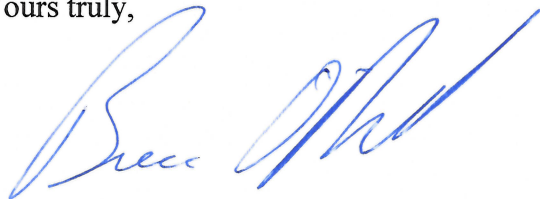
Pursuant to section 93 (2) (g) of the *Water Sustainability Act*, I hereby order the following:

1. Effective immediately, one rainbow trout acute toxicity test (96 hour LC50 test) every week shall be completed by BC Hydro for water in the RSEM R5b sediment pond prior to discharge to the environment until daily sampling and testing of end-of-pipe water quality meets the requirements established under section 7.2.2 of the CEMP Appendix E for two successive weeks. The water for the first sample is to be collected within 24 hours of receiving this letter.
2. Sediment pond water samples used in the acute toxicity tests must be representative of the water to be discharged.
3. Acute toxicity test reports, inclusive of full laboratory certificate of analysis results, are to be submitted to the Comptroller of Water Rights and the Independent Environmental Monitor as soon as the analysis is received after each test.
4. Starting with the second acute toxicity test report, the reports must contain a qualitative statement by the associated QP as to whether the water used in the acute toxicity test was a good representation of the water in the pond over the period since the last acute toxicity test.
5. When the RSEM R5b sediment pond end-of-pipe water quality meets the requirements established under section 7.2.2 of the CEMP Appendix E for two successive weeks this order will be considered to have been satisfied, and
6. If there are no rainbow trout acute toxicity test failure, when the RSEM R5b sediment pond end-of-pipe water quality meets all the requirements established under section 7.2.2 of the CEMP Appendix E for two successive weeks this order will be considered to have been satisfied and the frequency of acute toxicity testing for the RSEM R5b sediment pond shall be as described in section 7.3.1 of the CEMP Appendix E, Revision 5.2, dated July 26, 2016.

7. However, if a rainbow trout acute toxicity test failure occurs:
  - 1) immediately stop discharges from the sediment pond,
  - 2) notify the Comptroller of Water Rights and the Independent Environmental Monitor, within 48 hours of the laboratory certificate of analysis being completed,
  - 3) discharge to the Peace River cannot recommence from the sediment pond until a successful acute toxicity test has been achieved, and
  - 4) discharge to the Peace River cannot recommence from the sediment pond until a review of current water treatment/discharge operations has been completed by the QPs and a remedial plan of action has been approved by all parties, including the Comptroller of Water Rights, and implemented on site.

If you should wish to discuss this order, please contact Gypsy Fisher at 778 698-7316 or myself at 778 698-7345.

Yours truly,



Bruce O'Neill, P.Eng.  
Deputy Comptroller of Water Rights

pc: Gypsy Fisher, Water Management Officer, WMB, FLNRORD  
Dave Francis, Water Manager, Northeast Region, FLNRORD  
Tim Little, P.Eng. Independent Engineer  
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