



August 2, 2011

Chuck Hubert  
Environmental Assessment Officer  
Mackenzie Valley Review Board  
Suite 200, 5102 50<sup>th</sup> Avenue,  
Yellowknife, NT  
X1A 2N7

Dear Mr. Hubert

**RE: Environmental Assessment EA0809-002, Prairie Creek Mine**  
**Conference Call Meeting with AANDC re Water Quality Objectives Committee**

Canadian Zinc Corporation (CZN) held a conference call with Aboriginal Affairs and Northern Development Canada (AANDC) on July 26, 2011 concerning progress made on items related to the development of water quality objectives. A meeting report for the meeting is attached.

A face-to-face meeting of the Water Quality Committee will be held in Yellowknife on August 9, 2011 hosted by AANDC. The meeting will start at 10 am and, after a 12-1 lunch break, will continue into the afternoon. For meeting room planning, and because meeting material will be circulated beforehand, parties interested in attending the meeting are requested to notify me.

Yours truly,  
CANADIAN ZINC CORPORATION

David P. Harpley, P. Geo.  
VP, Environment and Permitting Affairs

# Meeting Report

Main Issue: Water Quality Objectives

Meeting date: July 26, 2011 2 PM MST

Attendees:

AANDC        Krystal Thompson (KT), Nathan Richea (NR), Paul Green (PG), Ramona Sladic(RS), Barry Zajdlik (BZ) (consultant)

CZN            Dave Harpley (DH), Alan Taylor (AT), John Wilcockson (JW) (consultant)

Summary of discussion:

Progress on Initiatives

- Mean and RCA value derivation
  - o JW has provided BZ with all relevant data available to him for review. However, CZN do not want JW to continue with work on this aspect without a clear indication from BZ of his expectations.
  - o BZ: said that he would provide guidelines that, in his opinion, should be followed for RCA benchmark derivation. He also said that he had identified 3 additional data sources – the MERA study, Halliwell and Catto, and CZN's SNP. He said this and other data should be checked for QA/QC
  - o DH: Sampling upstream of the Mine for ultra-trace mercury and low-level metals was initiated just before the Public Hearing, and has continued on an approximate monthly interval. The intent is to continue this sampling until next summer.
  - o JW: advised that methyl mercury was also sampled upstream and downstream of the Mine, but was not detected.
  - o BZ: asked about flow measurements on tributaries in order to give appropriate weighting to samples.
  - o NR: commented that there would be some error margins associated with differences in the groundwater component. The catchment area approach assumes that each area contributes equally. The surface and groundwater interface within each tributary stream is different and should not be treated the same.
  - o DH: agreed, but felt that the margin would be much less than using spot flow readings. For example, Harrison Creek and Casket Creek have outwash fans, and the visible creek flow is a small proportion of the total flow, the remainder occurring in gravels. DH said that catchment areas for tributaries would be calculated and average monthly flows computed
- Desk-based process water treatment options study
  - o DH: advised that this work was underway, and would include the treatment process already proposed as well as other alternatives suggested by literary review and consultation with industry specialists. A

number of systems have been identified that are potentially available. These will be brought forward in a report which will also identify which options should move forward to testing.

- Additional water storage
  - o DH: CZN has been evaluating additional water storage alternatives, primarily to allow more water to be held in storage over the winter which would result in improved receiving water quality over this period, and potentially allowing more stringent objectives to be assumed. One focus of the evaluation is the existing pond. The pond will be rehabilitated to stabilize the backslope by excavating material to reduce the driving force for slope movement, by placing a fill apron and buttress in the pond, and by maintaining a minimum 877 m water level, giving a 3 m range of acceptable water level fluctuation. Options are available to reduce the minimum water level. More material could be excavated from the backslope. Also, trenching of the backslope could be done to truncate the underlying clay layer which is the source of the instability. In addition, the dykes could be raised slightly. If the dykes were raised 1 m and the minimum water level lowered 1 m, the available seasonal storage would increase from approximately 220,000 m<sup>3</sup> to 320,000 m<sup>3</sup>.
  - o Another alternative would be to build a second pond to the south of the main site. Material excavated from the existing pond area would be used to form the dykes, in addition to the material generated during ground preparation at the proposed site. A second pond would provide considerably more water storage, but would mean a new structure and pumping from a greater distance.

#### Meeting on August 9

- DH proposed that the meeting start at 10 am. The assumption is that the meeting would continue through the rest of the day, with a break for lunch from 12-1.
- KT said AANDC could book a boardroom for the meeting, and encouraged CZN to notify all parties to the EA, including the aboriginal groups, of the arrangements.
- CZN indicated that the intention was to provide an analysis of possible water quality objectives that could be assumed with improved process water treatment and/or additional water storage, a draft document regarding water treatment options and a conceptual design for the additional water storage proposal provide prior to the August 9, 2011 meeting.

#### Other Items

- AANDC review of post-hearing documents
  - o DH asked whether AANDC had any comments on the material submitted to the EA registry since the Public Hearing, specifically the information on tailings backfill. NR advised that the information had been forwarded to John Brodie, but a reply has not yet been received.

#### Developer commitment(s):

- CZN's intent is to continue this sampling upstream of the Mine for ultra-trace mercury and low-level metals until next summer.

- CZN's intent is to have a draft document regarding water treatment options circulated to those parties planning to attend a meeting of the WQ Committee on August 9, and to provide the document a few days before the meeting
- CZN's intention is to submit a conceptual design for a second water storage pond to the Review Board the week of August 2, 2011 to give parties time for review. Then the structure itself and any associated impacts from the structure may be assessed as part of this EA.
- CZN indicated that the intention was also to provide an analysis of possible water quality objectives that could be assumed with improved process water treatment and/or additional water storage, and like the other documents, provide this a few days prior to the August 9, 2011 meeting.

Outstanding issue(s) for the party:

- AANDC requires the developer to determine mutually agreeable water quality objectives

Action Items:

1. CZN: assemble sub-catchment flow calculation data
2. CZN: circulate Water Storage Report by Aug. 5th
3. CZN: circulate Draft Process Water Treatment Report by Aug. 5th
4. CZN: circulate new water balance and water quality predictions by Aug. 5th
5. AANDC: arrange a meeting room for Aug. 9th in Yellowknife
6. CZN: invite parties to the EA to the Aug 9<sup>th</sup> meeting in Yellowknife

Signature of party representative: \_\_\_\_\_

Signature of developer representative: \_\_\_\_\_

Date: August 2/2011

*[Handwritten Signature]* A/Manager WRD - AANDC  
*[Handwritten Signature]* VP Environment CZN