

**BHP Billiton Diamonds Inc.**  
Operator of the EKATI Diamond Mine



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September 28, 2007

Wek'èezhii Land and Water Board  
# 1 4905 – 48<sup>th</sup> Street  
Yellowknife, NT  
X1A 3S3

Attention: Ms. Violet Camsell-Blondin, Chair

Dear Ms. Camsell-Blondin:

**Re: Tundra Soil Study, Water Licence MV2001L2-0008, Part I.2**

BHP Billiton Diamonds Inc. is pleased to provide the attached study report, which addresses chemical interactions between natural tundra soils and runoff from waste rock storage areas. This study uses an examination of seepage locations SEEP-018B and SEEP-019 on the north side of the Panda/Koala Waste Rock Storage Area to study these interactions.

This study report fulfills a commitment that was made by BHP Billiton during technical reviews of seepage reports and is also provided to fulfill the requirements of Part I.2 of Water Licence MV2001L2-0008 (Sable Pigeon and Beartooth). This licence requirement calls for a Terms of Reference for a Tundra Soil Study of this nature to be submitted in 2003, which was unintentionally missed. Given this long delay, we are providing the final study report itself, the Terms of Reference being based on technical reviews of previous submissions to the Wek'èezhii Land and Water Board.

The scope of work for this study was developed using suggestions and questions received from various technical reviewers of previous seepage reports, most notably Dr. Bill Price working through the Independent Environmental Monitoring Agency. The general purpose of the study is to investigate the hypothesis that ion-exchange mechanisms that involve the natural soil geochemistry may be the cause of the depressed pH and increased aluminum that has been observed in some seep samples. This purpose is in agreement with the requirement of Water Licence MV2001L2-0008, which calls for *“field investigations of Tundra soil behaviour and interactions with waste rock runoff”*.

The findings of the study generally support the stated hypothesis. The exchange of aluminum ions that are naturally present in tundra soils with calcium ions in runoff water could result in hydrolysis of the newly released aluminum ions and pH depression along the flowpath that correspond in magnitude to the observed water chemistry. In this case, the expectation is that aluminum concentrations will gradually decrease over time.

Please contact the undersigned at (867) 669-6116 if you have any questions.

Sincerely,  
**BHP Billiton Diamonds Inc.**



Eric Denholm  
Superintendent – Traditional Knowledge and Permitting  
EKATI Diamond Mine

EJD...

cc. Jason Brennan, Inspector, DIAND South Mackenzie District Office  
Bill Ross, Chairperson, Independent Environmental Monitoring Agency