April 17, 2012

Government of Yukon
Water Resources Branch
Inspections Section
Box 2703
Whitehorse, Yukon
Y1A 2C6

Attention: Mr. Troy Searson, Water Inspections Officer

Dear Mr. Searson:

Re: Non-compliance at Bellekeno 625 Treatment Pond Decant, April 4, 2012

In accordance with water use licence (WUL), QZ09-092 the following provides a summary of a recent non-compliant event at the Bellekeno 625 treatment facility decant (KV43).

On April 4, 2012, a sample was taken for external analysis at KV 43 as a part of regular monitoring. The sample results were issued by the lab (Maxxam Analytical of Burnaby, B.C.) on April 12th, 2012 returning a total suspended solid concentration of 26 mg/L, 1 mg/L above the WUL standard of 25mg/L set for KV43. All other licensed parameters were in compliance.

Standard operating procedure for water quality monitoring involves regular review of daily turbidity measurements taken at the treatment pond decant and pre-treated water flowing from the adit. Turbidity levels can serve as an indicator of fluctuations in TSS levels. An increasing trend in turbidity was noted a few days prior to April 4th. In response, FeCl dosing was increased on April 3rd. This increase however was either not enough to control TSS levels on the fourth or there was a lag in response time between dosing and lowering of TSS levels. The Multi-media filter (MMF) was in operation at

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the time and was effectively removing TSS but not enough to reduce the increased load from the adit below the effluent quality standard on April 4th.

Turbidity continued to increase through to the 5th of April at which time FeCL dose was again increased resulting in a substantial drop in turbidity levels at the decant on the 6th of April. FeCl dosing was again increased on the 8th to further reduce turbidity and TSS. Sampling results from KV43 collected on April 11 and received April 18 indicate all parameters including TSS are in compliance.

Because turbidity has not always been a reliable indicator of TSS (correlation between the two parameters has not been strong at this site), AKHM has ordered equipment that will allow for onsite measurement of TSS allowing for more timely and accurate control of TSS in the treatment process.

To prevent future TSS exceedences AKHM will maintain higher addition of FeCl when turbidity is elevated and or increase retention time of water in the treatment ponds. Once TSS analytical equipment is in place and operational AKHM will rely on it to indicate actual TSS levels rather than using turbidity as an indicator.

Please feel free to contact me should you have any questions or require any further information concerning this out of compliance event.

Kind Regards,
Alexco Resource Corp.

Brad A. Thrall
Chief Operating Officer

cc: N Salvin, Manager, Yukon Water Board
S Buyck, Lands Manager, First Nation of Na-Cho Nyak Dun
J Harrington, Vice President Environment, Alexco
Tom Fudge, Vice President
T Hall, Manager, Project Development

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Memorandum

To: Mr. Troy Searson, Water Inspections Officer, Yukon Water Resources

From: Brad Thrall, Alexco Keno Hill Mining Corp.

CC: Stephen Buyck, Lands Manager, FN NND; Vanessa Benwood, AKHM; Jim Harrington, AEG; Rob Schneider, ACG

Date: August 16, 2012

Re: Non-Compliant Total Suspended Solids Effluent Bellekeno 625 Water Treatment Facility Treatment Decant

INTRODUCTION

In accordance with water licence QZ09-092, the following provides a summary of a non-compliant total suspended solids sampling event the Alexco Keno Hill Mine (AKHM) Bellekeno 625 water treatment facility.

A sample was taken for external analysis at the Bellekeno 625 treatment facility decant as a part of regular monitoring, returning a TSS result of 27.6mg/L, exceeding the effluent quality standard of 25mg/L.

A thorough investigation is currently being carried out by the company.

Yours Truly,

Brad Thrall

Chief Operations Officer

Alexco Keno Hill Mining Corporation

External cc: S. Buyck, Manager, Lands, FN NND ,

Internal cc: V. Benwood, Alexco Keno Hill Mining Corp.
J. Harrington, Alexco Environmental Group
R. Schneider, Access Consulting Group

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Memorandum

To: Mr. Troy Searson, Water Inspections Officer, Yukon Water Resources

From: Tom Fudge, AKHM

CC: Mr. Wade Comin, Sr. Enforcement Officer, Environmental Enforecement Division, Environment Canada

Date: July 20, 2012

Re: Non-Compliant Ammonia Effluent Bellekeno 625 Water Treatment Facility Treatment Decant

INTRODUCTION

In accordance with water licence QZ09-092, the following provides a summary of a non-compliant ammonia sampling event the Alexco Keno Hill Mine (AKHM) Bellekeno 625 water treatment facility.

As Water Resources is aware, on July 4th, 2012, a sample was taken for external analysis at the Bellekeno 625 treatment facility decant as a part of regular monitoring, returning an ammonia result of 19mg/L, exceeding the effluent quality standard of 5.0mg/L.

A thorough investigation is currently being carried out by the company. Two possible methods of contamination have been identified by AKHM that may have led to the non-compliance.

Internal and external analytical samples were taken on July 4th approximately 1hr apart. Internal ammonia results returned a value of 2.72mg/L from an aliquot of sample collected at 8:09am. The external lab sample was collected at 9:15am. Although unlikely, it is possible that a slug of ammonia entered the system and passed through the decant drop box an hour after the internal sample was collected. The likelihood of this having occurred is considered low, given the size of the ponds and the rate at which effluent passes through the treatment facility. It is not likely that a slug of ammonia generated in the underground would have remained unmixed and isolated from water passing through only an hour earlier. Even at the high flowrates observed on July 4th (9.41mg/L), residence times in the ponds would have been over 36hours.

The second possible source of contamination centres on the operation of the new modular ammonia treatment component of the treatment facility. AKHM installed and commissioned an ion exchange module as a component of the Bellekeno 625 Water Treatment Facility in April 2012 for the removal of ammonia from

mining effluent. The module was installed as a contingency measure to provide greater operational tolerances between ammonia treatment perfomance and the effluent quality standard in Water Licence QZ09-092.

The system is comprised of a four tank Ion Exchange System loaded with media that sorbs and removes ammonia from the water prior to discharge. The media is an ammonia-specific resin, Resin Tech's SIR-600, a zeolite material that preferentially sorbs ammonia over other common cations such as sodium or calcium. This material provides an enhancement over the sorbtion processes that occur in the settling and polishing ponds, whereby ammonia sorbs onto treatment sludge.

The ammonia treatment module is currently in the commissioning phase as the company's care and maintenance operations adjust the system to perform at maximum efficiency. During this installation and commissioning period, the ammonia system was backwashed to eliminate fines from the sand and zeolite media.

It was expected that very fine particualte would have been removed during installation backwashing; however, it is entirely possible that some remained and that during system disruption due to mainatenance it could have been released. In order to confirm or deny this as a possible means of contamination, care and maintenance are currently investigating whether or not ammonia in effluent containing the zeolite media after treatment usage could be detected in lab analyses. If this is the case, the system will undergo maintenance by professional staff to ensure that this does not happen again over the normal course of operation.

Care and maintenance are further investigating whether the discrepancy between internal and external results could be explained by laboratory standardized methods. It is not known if sorbed zeolite ammonia can be detected via internal ammonia analytical methods and this question is being resolved currently.

The results of this investigation will be provided to Water Resources as soon as they are available. The investigation will be ongoing contingent on the findings of the above courses of action. Please feel free to contact the undersigned with any questions or concerns regarding this submission.

Yours Faithfully,

Tom Fudge

Title

Alexco Keno Hill Mining Corporation

External cc: Wade Comin, Sr. Enforcement Officer, Environment Canada
D. Buyck, Manager, Lands, FN NND ,

Internal cc: Vanessa Benwood, Alexco Keno Hill Mining Corp.

B. Thrall, Alexco Keno Hill Mining Corp.
Jim Harrington, Alexco Environmental Group
R. Schneider, Access Consulting Group