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Nunavut Water Board

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Public Registry

Re: JERICHO MINE WWTP

Wrap Up Comments from Meeting on Design and Operation, 2006 11 03

Dear Mr. Murdock:

On November 3, 2006, a meeting was held at the offices of EBA in Edmonton, to review comments on the design and operations and maintenance manual for the WWTP at the Tahera Diamond Mine. A presentation was made by Mr. Waclaw Trebacz of Dillon Consulting Ltd. He initially reviewed the original design basis of the package wastewater treatment plant. Then he reviewed the operations and maintenance manual provided by P.J. Hannah Ltd, the supplier of the package plant.

Dr. Bruce Ott of AMEC presented letters from the Nunavut Water Board containing comments by Associated Engineering on the WWTP design and the Operations and Maintenance Manual. Those present discussed the comments in the letters in relation to the information presented by Mr. Waclaw.

The letter response of October 25, 2006 by Dillon Consulting was also discussed to some extent.

Associated Engineering has the following comments from the meeting.

WWTP Process Design

- 1. With flows and loads experienced during 2006, the BOD loads on the first stage and the whole RBC facility are right at the recommended maximum loadings stated by Mr. Richard Watson. It should be noted that the camp population over the stated period was reported to be 90 to 100 people. Representatives of Tahera indicated that this is expected to remain the long term population of the camp, now that the construction period has ended. We point out that if the on site population increases, the RBC unit will be overloaded in the first stage, as it was reported to have been during the construction period. At that time the population was 180. The actual capacity of the RBC plant is 50 percent of the stated population design capacity to treat 200 people.
- 2. It was agreed that the current reported performance of the aerobic sludge digester is less than it should be with volatile solids in the treated sludge reported at 53.9%. Dillon agreed that work would be done to improve the digester performance, even though the sludge quality is not regulated.



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- 3. Dillon have prepared a commendable monitoring program to guide the operation of the WWTP.

 The list of parameters to be analyzed is appropriate to the facility. Tahera representatives pointed out that the compliance point for the wastewater is the discharge from the PKCA, not the WWTP effluent. As a result of this the need to control the WWTP operation is diluted.
- 4. The observed concentrations of selected components in the raw wastewater are as follows: BOD 450 mg/L; TSS 195 mg/L; Total N 55 to 70 mg/L; Total P 12 to 14 mg/L. With these concentrations the WWTP is not expected to meet the specified plant design effluent concentrations of Total N < 20 mg/L and Total P < 6 mg/L. However dilution in the PKCA pond will enable the PKCA pond effluent to remain within the compliance limits.
- 5. The data for 2006 for phosphorus in the PKCA discharge stream show that concentrations have been below the regulated values of 0.4 mg/L and 0.2 mg/L, maximum and average, respectively. However, there was discussion during the design phase of the potential need to add phosphorus removal facilities to the WWTP. Joe Murdock requested that Dillon provide a basis for making a decision on whether phosphorus removal at the WWTP would be needed.

Operations and Maintenance Manual

- 1. Tahera representatives and Dillon agreed that all components of the O&M manuals should be bound together in a hard covered three ring binder or binders if required.
- 2. It was agreed to include in the manual a simple process flow diagram and a process description or process control narrative.
- 3. Tahera responded to the need for instruction in the event of power failure as follows. The camp provides its own power and has an emergency backup system. Therefore it is very unlikely that the WWTP would be subject to power failures.
- 4. The P.J. Hannah Operations and Maintenance Manual had not been provided to the NWB for review. Tahera explained that most of the comments provided on the O&M manual were addressed by the content of the P.J. Hannah manual.
- 5. Tahera explained that the maintenance work for the WWTP would be done by trades people working in other portions of the mine, not by the WWTP operator. These trades people would come to the WWTP and use the contents of the P.J. Hannah O&M manual as required.



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We trust that this is the information you need at this time. Please call should you require further assistance.

Yours truly,

JMG/ls

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Project Manager