3rd Floor Bellanca Building PO Box 1500 YELLOWKNIFE, NT X1A 2R3

Tamerlane Ventures Inc. - EA-0606-003

August 7, 2007

Alistair MacDonald **Environmental Assessment Officer** Mackenzie Valley Environmental impact Review Board P.O. BOX 938 YELLOWKNIFE NT, X1A 2N7

By FAX: 766-7074

Re: MVEIRB request on the 2nd round of Information Requests for the Tameriane Ventures Inc. - Environmental Assessment.

Dear Mr. Macdonald

Indian and Northern Affairs Canada- Water Resources Division (INAC-WRD) has reviewed the additional information posted on the MVEIRB website public registry from the Technical Session in Hay River for the Tamerlane Ventures Project-EA and the Developers Assessment Report. INAC would like to submit the following more specific information requests in Annex A.

Thank you for the opportunity to provide these information requests. INAC-WRD is available to discuss any of the above items or comments if required, inquires in this regard can be made to Catherine Mallet at malletc@inac.gc.ca or at (867) 669-2402.

Sincerely.

Dr. Kathleen Racher

Manager

Water Resources Division

ENVIRONMENTAL IMPACT

REVIEW BOARD

ANNEX A

W.

08/07/2007 TUE 16:41 [TX/RX NO 6595]

Source:

To:

Water Resources, INAC Tamerlane Ventures Inc.

DAR Section:

7.2

Terms of Reference Section:

I-1-4

Preamble

During the technical sessions in Hay River on July 17th and 18th, 2007, it was noted that the rate of basal inflow presented in the DAR may be a significant underestimation. The basis for Tamerlane's estimation of the underflow is not clear.

This information is critical for characterization of the discharge water and design of the injection well. Updated estimates of basal inflow based on a more thorough and critical analysis of the available data have not yet been provided for review.

Request

Provide new calculations and estimates for basal inflow to the mine. Given the limited hydrogeologic information available, provide a range that considers best and worst case scenarios.

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Source:

Water Resources, INAC

To:

Tamerlane Ventures Inc.

DAR Section:

NΛ

Terms of Reference Section:

D-17; D-19; L-3; L-6

Preamble

For the purposes of water disposal, Tamerlane has recently committed to the use of an injection well rather than an infiltration basin. This alteration eliminates a variety of concerns related to the operation and impact of the infiltration basin; however, the developer still needs to provide adequate information about this method of water disposal.

- Describe the location, installation, and operation of the injection well. Provide design information on the injection system, sufficient to establish that the proposal is feasible.
- 2. Describe the environmental impact, if any, of the operation of the injection well with respect to changed groundwater levels, and with respect to availability of water resources for other uses during and after operation.
- Will a settling pond be used to remove materials that could contribute to plugging of the well? If so, provide details of pond location, construction and operation.
- 4. Describe how the fate and potential effects of the injected water will be monitored.
- 5. Clearly outline contingency measures for scenarios (including "worst-case" even if probability is low) that may arise during operation of the injection well. In particular, address storage, treatment, or other options that will be available onsite in the event that the discharge water does not meet the water quality criteria outlined in the water license, and options that will be available to address inadequate discharge capacity in the event of either greater than expected mine water inflow, or of failure or reduction in injection capacity of the well.

Source: Water Resources, INAC
To: Tamerlane Ventures Inc.

DAR Section: 4,3,7

Terms of Reference Section: I-1-5 (i); L-3 (c); L-6

14

Preamble

For the purposes of water disposal, Tamerlane has committed to the use of an injection well rather than an infiltration basin. In light of this change, treated sewage effluent cannot be commingled with process water for disposal as per the original DAR. As of yet, no alternative method of disposal has been put forth for the treated sewage effluent.

Request

Please identify the disposal method that will be used for the treated sewage effluent, including details of the method and monitoring, and clearly outlining contingency measures designed to address "worst-case" scenarios (eg. spills, failure of effluent to meet water quality criteria set out in the water license, treatment plant shut-down, etc.).

08/07/2007 TUE 16:41 [TX/RX NO 6595]

Source:

Water Resources, INAC

To:

Tamerlane Ventures Inc.

DAR Section: Terms of Reference Section: 7,2 I-1-1

Preamble

In order to develop water quality criteria as part of the water licensing procedure, the water to be discharged to the injection well must be characterized. This information was not provided in the DAR and has not yet been provided in subsequent meetings or correspondence.

Request

- 1. Provide estimates of water quality characteristics for "end-of-pipe" water (for discharge to the injection well). Quality may be estimated in ranges, but must at a minimum include the expected pH and concentrations of TDS, sulphate, nitrate, ammonia, metals, and cyanide.
- 2 Please show how these numbers were determined, taking care to consider water losses and effects of combined inputs. Provide justification for any assumptions that are made. Note how water quality characteristics of the effluent will differ if the rate of basal inflow varies significantly from the estimate in the DAR.
- 3. If additional components or reagents could be added to the DMS circuit, describe these additions and indicate what effect they will or might have on the quality of the discharge water.
- 4. Given that this is a new system for water disposal, replacing the one proposed in the DAR, how will the water quality be monitored prior to injection?

110

Source:

To:

Water Resources, INAC Tamerlane Ventures Inc.

DAR Section:

4.2.2.7 and 4.3.11; Appendix F

Terms of Reference Section:

Ago.

D-13; L-3 (a)

Preamble

On page 162 of the DAR, proposed on-site fuel storage is described, including details of capacity and secondary containment; however, a similar level of detail is not provided for the underground storage tank (supplied from the surface by piping) mentioned on page 148.

- Provide details regarding this underground storage tank and associated piping, including capacity, contents, and containment.
- 2 Underground spills from this tank have the potential to contaminate groundwater—a scenario that has not been addressed in the Spill Contingency Plan. Outline contingency measures for underground spills.

Source:

Water Resources, INAC

To:

Tamerlane Ventures Inc.

DAR Section:

9.0-9.6

Terms of Reference Section:

J-2 (d, f, g); J-5

Preamble

Even in the preliminary stage, closure and reclamation planning is viewed not just as a written commitment to use best practices at the time of closure, but as an integral part of the mine design. In fact, the Mine Site Closure and Reclamation Guidelines for the NWT have the stated intention of providing "guidance on how to develop, operate, and close mine sites in a manner that promotes effective reclamation." The level of detail presented in the Closure and Reclamation Plan (CRP) of the DAR does not reflect this view.

A CRP should take into account planned and potential future use of the area. The reclamation goals stated in Section 9.1 (page 413) of the DAR do indicate that future productivity and future users will be considered; however, beyond this, there is no further mention of future use in the CRP, so it is not clear that future use was truly integrated into the CRP.

Additionally, an essential component of the CRP is the development of specific and measurable closure criteria that will be used to evaluate the progress and completion of closure and reclamation activities. These criteria also help to create a realistic cost estimate for closure and reclamation activities.

Further detail was provided on some reclamation issues during the technical sessions on July 17th and 18th, 2007; however, there is currently no written record of these details for future reference.

- 1. Describe the reclamation of the piping associated with the freeze curtain and indicate how the brine solution will be disposed of.
- 2. Page 418 of the DAR states that fuel and lube tanks and piping will be washed and cleaned prior to dismantling. Describe how the contaminated wash-water will be treated and disposed off.
- 3. Page 418 of the DAR also states that hazardous waste materials may be treated on site. Describe what techniques will be available for treating hazardous waste on site.
- 4. Describe how the injection well will be addressed as part of the closure and reclamation procedures.
- 5. If a settling pond will be used, describe how it will be addressed as part of the closure and reclamation procedures.

- 6. Describe post-closure monitoring in greater detail than that currently available in the DAR. Include cost estimates for post-closure monitoring, since it has not been addressed as part of the current reclamation total.
- Explain how planned or potential future use is being incorporated into closure and reclamation planning.
- Consider each objective set out in Section 9.2 and describe the measures that will be used to determine when each objective has been met, bearing in mind that multiple criteria may be necessary to satisfy an objective and that one criterion may satisfy more than one objective.

In this case, closure criteria should include, but not be limited to, the following:

- a) Infrastructure removal: Based on the current CRP, this component will be complete when all infrastructure has been removed and the foundations have been removed or buried.
- b) Re-vegetation: At what point will the vegetative community be considered to be successfully re-established and self-sufficient? For example, the predicted growth rate of seedlings (presented on page 415 of the DAR) is a specific measure that might be used in combination with community composition to evaluate success after a given period of time.
- c) Groundwater monitoring: It is expected that groundwater monitoring will be on-going over the course of the project to determine the fate and effect of the injected water. After closure, how will the physical and chemical stability of the aquifer be conclusively demonstrated?

Additionally, for each criterion, describe the contingency actions that will be taken if the criterion is not satisfied within the anticipated time-frame.

Source:

To: DAR Section:

Water Resources, INAC Tamerlane Ventures Inc. 4.1.3, 11.3, Appendix C-1

Terms of Reference Section;

Preamble

The DAR sets out the freezing proposal, and mitigation responses to emergencies in its operation. However no consideration is given in the DAR to the issue of the impact of release of some or all of the refrigerant fluid to the environment due to an accidental rupture of the main brine circulation lines, or the in-ground freezing lines.

- 1. Develop, propose and describe design measures to ensure that the refrigeration fluid is at all times contained within the distribution system, even in the event of total rupture of the brine distribution system. Tamerlane should provide information that demonstrates that the containment system(s) have sufficient capacity for complete rupture without release of any refrigerant to the environment.
- 2. Provide information and evaluation that indicates the quantity of brine that might be lost due to an underground failure of the mined system. Describe response measures that would be proposed to prevent this brine creating an unacceptable environmental impact.

Source: To:

Water Resources, INAC Tamerlane Ventures Inc.

DAR Section:

4.3

Terms of Reference Section:

4.2 D

Preamble

The DAR presents a dense media separation technology for ore beneficiation. During the technical sessions in Hay River on July 17th and 18th, 2007. Tamerlane indicated that an additional froth flotation step may be added to the beneficiation and ore separation process. If Tamerlane wish to have the ability to implement this beneficiation step without a further permitting process, information about the nature and effect on water quality and the environment of this processing step must be presented and considered.

- Provide details of the expected flotation process, if used. Specifically, provide details of flotation agent(s) that will be used, rate of use, chemical composition of flotation agents, storage and transportation of these chemicals, contingency plans for loss and/or spillage of reagents, and expected impact of the additional process step on the quality of project discharge water.
- Provide an allimative statement that no hazardous or environmentally harmful constituents will be used in any part of the flotation process, including but not limited to eyanide.
- 3. Provide information that revises the power requirements of the processing system, and the environmental impacts of providing that power.