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Tahera Diamond Corporation Suite 803, 121 Richmond Street West Toronto, Ontario M5H 2K1

Attention: Dan Johnson

Subject: Jericho Diamond Mine

Processed Kimberlite Containment Area

Divider Dyke A

The following addresses technical questions raised in the letter to the Nunavut Water Board from Acres International Limited, dated October 20, 2005 regarding the Jericho Divider Dyke Design Report.

## **Design Intent**

The design intent of the dyke is that it will be a pervious structure. The dyke may contain water if the filter freezes, or blinds off.

## Rip-Rap Materials

The face of the dyke will be covered by 300 mm minus crushed granite material. A small run-of-mine toe berm will be constructed at the upstream face. The estimated wave height is 0.36 m for the case of open water against the dyke. The estimated wave height will become less as the basin is filled with tailings and fetch length decreases. Rip-rap for a theoretical wave height of 0.36 m would require a  $d_{50} = 155$  mm. The specified  $d_{50}$  gradation of the rip-rap varies from 40 mm to 130 mm, which is less than that required for the maximum wave. The specified size is less than the required size, such that the rip-rap meets the filter criteria between the underlying 20 mm minus material and the rip-rap. The specified rip-rap layer is 1.3 m thick. It is expected to perform adequately as rip-rap material; however additional run of mine material will be placed if degradation is observed.

## Phreatic Surface

The assumed phreatic surface is based on the maximum head drop that could be possible for the structure. It was assumed that tailings impounded against the dyke will result in a high water head at the upstream side. The rockfill on the downstream side of the dyke is expected to be free draining.

## **Emergency Spillway (Surface Overflow)**

An overflow structure will only be required if the water levels exceeds elevation 520 m (when the dyke is partially constructed to 521 m). The majority of the water inflow into the PKCA is pumped water from other areas of the site; therefore in most situations it is a controlled inflow. The overflow could consist of pipes, or siphons or a low sill (emergency spillway). Details of a low sill

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emergency spillway structure will be presented in the PKCA management plan. The decision whether to construct an overflow will be an operation issue.

We trust this addresses the questions posed. Please contact the undersigned if you have any questions.

Yours truly,

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