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Strategic Environmental Focus
P.O. Box 74785
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Attention: Ms.B. Vollmer

Dear Mam

ALTERNATIVE 4 MERCURY - PERSEUS 400 kv TRANSMISSION LINE: COMMENTS

As requested by your e-mail dated 1 December 2003, we are glad to provide the following comments on the proposed alternative Alignment 4. It should be noted that the information are based on a short revision of geological and topographical maps. In order to provide more detailed information an aerial photographic study together with field confirmation should be conducted.

The topography and geology of Alignment 4 are similar to that of Alignment 1, with the same prevailing conditions as lined out for Alignment 1, that may occur with the associated topography and geology (Figure 2). These were not indicated on a map due to the time framework allowed. In summary these risk sources include:

- Excavatability problems associated with shallow bedrock conditions and active clays in areas of residual dolerite soils. Dolerite occurs in the region of Bothaville and Hoopstad with scattered dolerite intrusions occurring in the area between Hoopstad and Dealesville
- A number of perennial and non-perennial rivers and pans associated with inundation are crossed by Alignment 4. The most prominent rivers include the Sandspruit River south of Bothaville and the Vet

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River directly east of Hoopstad. A number of pans occurs in the area from Hoopstad to Dealesville, shallow groundwater conditions may occur adjacent to these areas. Soils in the region of salt pans may also be aggressive due to a high salt content.

- Areas underlain by sandstone and shale of the Vryheid Formation and shale of the Volksrust Formation may exhibit active and dispersive soil properties associated with shale and mudrock, as well as collapsible soils derived from sandstone.
- Settlement problems may be encountered with transported materials (i.e. aeolian and alluvium), that occur over the entire site with the exception of areas of outcrop.

The only area associated with undermining is at Vierfontein Colliery, where long term settlement or subsidence may occur due to coal extraction. The magnitude of settlement is not certain. In order to determine the magnitude of this problem, the mine should be visited and information gained in terms of the method of mining, boundaries and depth of undermined area. The Vierfontein Colliery is indicated on the accompanied map (Figure 1).

Should you have any queries please do not hesitate to call our offices.

Kind regards

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