ALBANY MUSEUM
SOMERSET STREET • GRAHAMSTOWN • 6139 • EASTERN CAPE • SOUTH AFRICA
TELEPHONE: (046) 622 2312 • FAX: (046) 622 2398 • HERBARIUM: (046) 622 2638

18th January 2008

Mr ID Scholtz
ATS Consulting Engineers (SA) (Pty) Ltd
P O Box 13072,
Vincent, 5217
Tel: 043-7486340 Fax: 043-7486340
Email: dewald@atsconsulting.co.za

Re: Letter of recommendation for the exemption of a full Phase 1 Palaeontological Impact Assessment: Borrow Pit, Thornhill,TsolwanaMunicipality, Eastern Cape

Dear Mr Scholtz,

As requested I have conducted a palaeontological heritage assessment of the ground that will be affected by the extended excavation of the Thornhill quarry/borrow pit for road gravel (S 31° 58' 45,4"/E 26° 36' 01,8"). An on site investigation was undertaken on 16th Jan 2008.

Geology. The effected area planed to be excavated is underlain by middle Triassic age sedimentary rocks of the Karoo Supergroup - specifically the Burgersdorp Formation at the top of the Beaufort Group of fluvial sediments. Biostratigraphically these rocks occur as part of the upper ***Cynognathus* Biozone** – the uppermost 8th Biozone within the Beaufort Group. The estimated age of these fluvial sediments is approximately 230 million years old. It is within these sediments that a variety of ancient plant, invertebrate and vertebrate animal fossils have been recovered in the past. These fossils have provided a comprehensive insight how the Karoo Basin developed and how the landscape and organisms evolved through time. In particular it is the therapsids mammal-like reptile fossils that have been found in abundance for which the Karoo is famous. Recent fossil collecting and research over the past five years in the upper Beaufort sediments by palaeontologist based at the University of the Witwatersrand, the National Museum in Bloemfontein and at the Albany Museum, Grahamstown, have yielded some significant new fossils which are currently under study.

The existing quarry face reveals the presence of well-laminated red mudrock representing overbank mud deposits, overlain by a capping (1m) of medium grained river channel sandstone (Figures 1, 2 & 3).

Results of survey

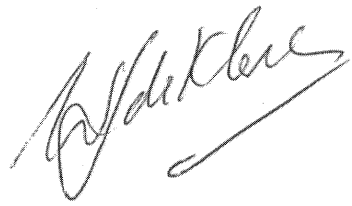
I covered the proposed quarry area in some detail looking for any telltale clues for the presence of fossil bone, plants or invertebrates. I can report that a small occurrence of fragmentary fossil bone was identified and some isolated trace fossils in the form of vertical invertebrate burrows (skolithos) were located.

Recommendations

As only a relatively small area will be affected by excavations, the likelihood of finding well preserved fossils of any kind is remote. A full palaeontological impact assessment is therefore not necessary. It is recommended that development may take place, but that the developers should immediately stop excavations and call a palaeontologist, if any fossil plant material, bones or teeth, and or trace fossils are discovered.

I hope that this report satisfies your requirements and should there be any reported fossil finds at any time during the construction phase of the project, I would be more then willing to check them out.

Yours sincerely



Dr W.J. de Klerk
Curator: Earth Sciences **b.deklerk@ru.ac.za**

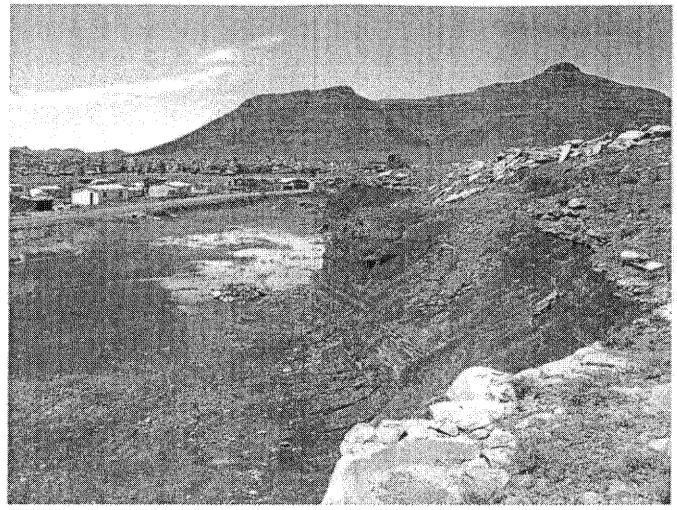


Figure 1: Rock outcrops as exposed in the Thornhill borrow pit showing the dominant, well-laminated red mudstone overlain by the resistant harder river channel sandstone capping. These fluvial sediments form part of the *Cynognathus* Biozone of the upper Beaufort Group, Karoo Supergroup.

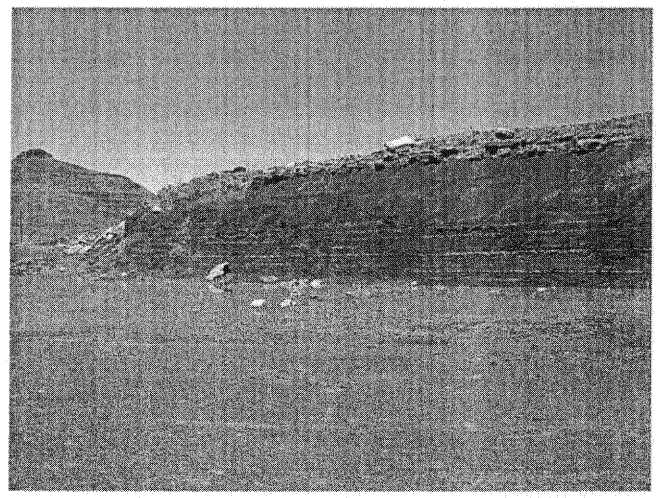


Figure 2: Quarry face showing detail of the well-laminated red mudstone overlain by the resistant harder river channel sandstone capping.

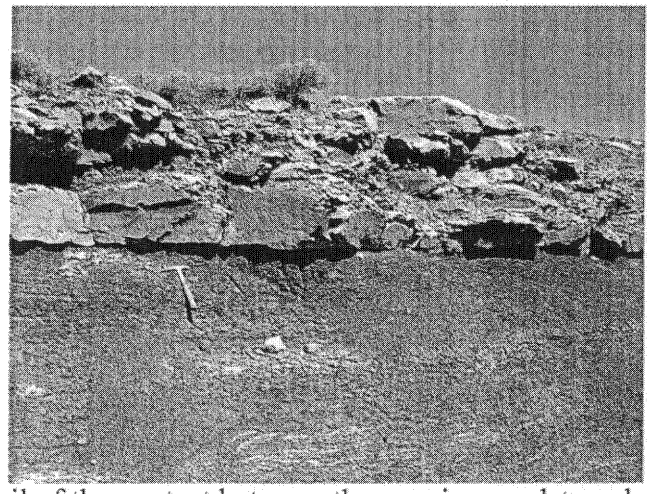


Figure 3: Detail of the contact between the capping sandstone layer and the underlying laminated red mudstone.