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7 September 2013

Ms Zoe Gebhardt
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Dear Ms Gebhardt,

Palaeontological Desktop Study – Scheding Chrome Mine, Capricorn District

As requested, herewith a desktop Palaeontological Impact Assessment with regard to the proposed Scheding Chrome Mine in the Capricorn District of Limpopo Province south east of Polokwane, Limpopo Province.
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Yours sincerely

Bruce Rubidge PhD, FGSSA, FRSSA, Pr Sci Nat

PALAEONTOLOGICAL DESKTOP STUDY
SCHEDING CHROME MINE, CAPRICORN DISTRICT, LIMPOPO PROVINCE

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DATE: 7 September 2013

EXECUTIVE SUMMARY

A desktop Palaeontological Impact Assessment was undertaken for the proposed new Samancor Chrome opencast Scheiding chrome mine in the Capricorn District of Limpopo Province south east of Polokwane, Limpopo Province.

The entire proposed development area is underlain by igneous rocks of the Rustenberg Layered Suite of the Bushveld Igneous Complex. This is an intrusive igneous body comprising a series of ultramafic-mafic layers and a suite of associated granitoid rocks. As these rocks are Precambrian in age and are of igneous origin it is highly unlikely that fossils will be affected by the proposed subsurface mining development. Overlying the rocks of the Rustenburg Layered suite, there may be exposures of unconsolidated Quaternary deposits along the Olifants River. These are the only sedimentary deposits in the area which could be affected by the development, and as the deposits are not consolidated it is very unlikely that any fossils will be present.

In my opinion this development will not negatively affect palaeontological heritage. If, in the extremely unlikely event that fossils are exposed in the calcrete deposits in the process of development activities, a qualified palaeontologist must be contacted to assess the exposure for fossils so that the necessary rescue operations are implemented.

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REPORT

Background Information of the development

This desktop report is part of a Heritage Impact Assessment to determine the effect of the proposed new Samancor Chrome – Scheiding opencast chrome mine in the Capricorn District Municipality of Limpopo Province south east of Polokwane and situated on portion 2 of the farm Scheding 407 KS.

The study was commissioned by Prime Resources (Pty) Ltd and I was appointed to provide a desktop assessment of the affect that the proposed development will have on palaeontological heritage.

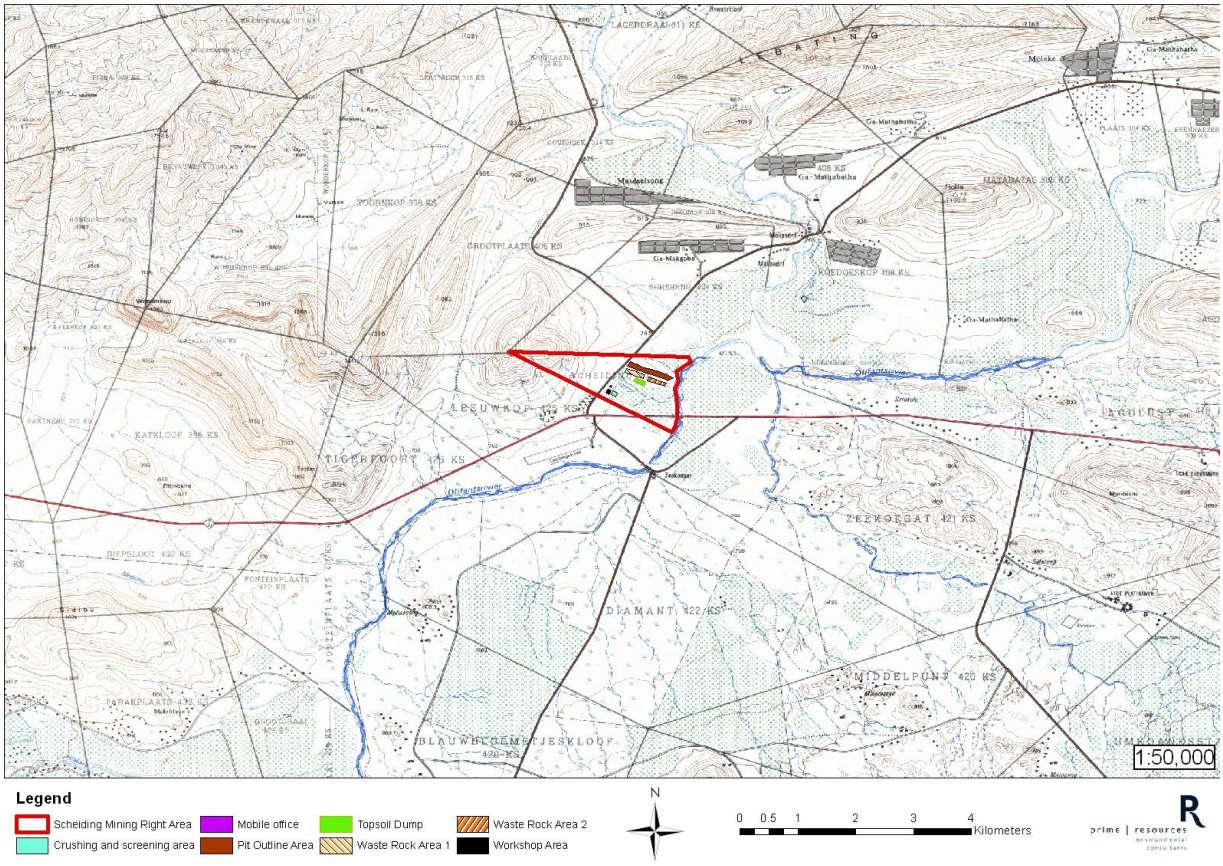

Figure 1: Map showing the position of the proposed new opencast chrome mine of Scheding Chrome Mine, south east of Polokwane.

Details of the study area
The study area proposed for the development of the proposed Scheiding Chrome Mine is on the farm Scheiding 407 KS (Figure 1) and is covered by the 1:50 000 topographical map s heets 2429BB Bewaarkloof and 2429BD Ga-Mankopane.

Geological Setting
Most of the area is underlain by Precambrian igneous rocks of the Rustenberg Layered Suite of the Bushveld Igneous Complex, but the most northerly portion is underlain by quartzites of the Precambrian Pretoria Group and these sedimentary rocks are too old to contain metazoan fossils (Figure 2). The Bushveld Igneous Complex is an intrusive igneous body comprising a series of ultramafic-mafic layers and a suite of associated granitoid rocks. There is a possibility that along the banks of the Olifants River there could be unconsolidated Quaternary deposits.

Palaeontological Heritage
As the rocks of the Busveld Igneous Complex are Precambrian in age and are of igneous origin it is highly unlikely that fossils will be affected by the proposed mining development. The Quaternary alluvial sediments which are covered by vegetation are the only sedimentary deposits in the area which could host fossils of Quaternary-aged animals and plants, but as these, deposits are not consolidated it is very unlikely that any fossils will be present.

Recommendation
It is extremely unlikely that the proposed development will have any effect on palaeontological heritage. However if fossils are exposed in the Quaternary alluvial deposits it will create a unique opportunity to explore the area for fossils. It is thus recommended that, in the unlikely event that fossils are exposed as a result of construction activities, a qualified palaeontologist must be contacted to assess the exposure for fossils before further development takes place so that the necessary rescue operations are implemented. Depending on the nature of the fossils discovered this could entail excavation and removal to a registered palaeontological museum collection. A list of professional palaeontologists is available from South African Heritage Resources Agency (SAHRA).

Conclusions
The proposed development of the proposed new Samancor Chrome, Scheiding chrome mine is situated on the farm Scheiding 407 KS south east of Polokwane in the Limpopo Province. The area is underlain by Precambrian aged igneous rocks of the Bushveld Igneous Complex which in turn are overlain by unconsolidated Quaternary aged alluvial deposits. It is extremely unlikely that fossils will be exposed as a result of the development. From a palaeontological perspective, the development of the proposed mining operation should proceed but, if fossils are uncovered in the course of construction activities, the developer immediately calls in a qualified palaeontologist to assess the situation and, if necessary, undertake excavation of the fossils.

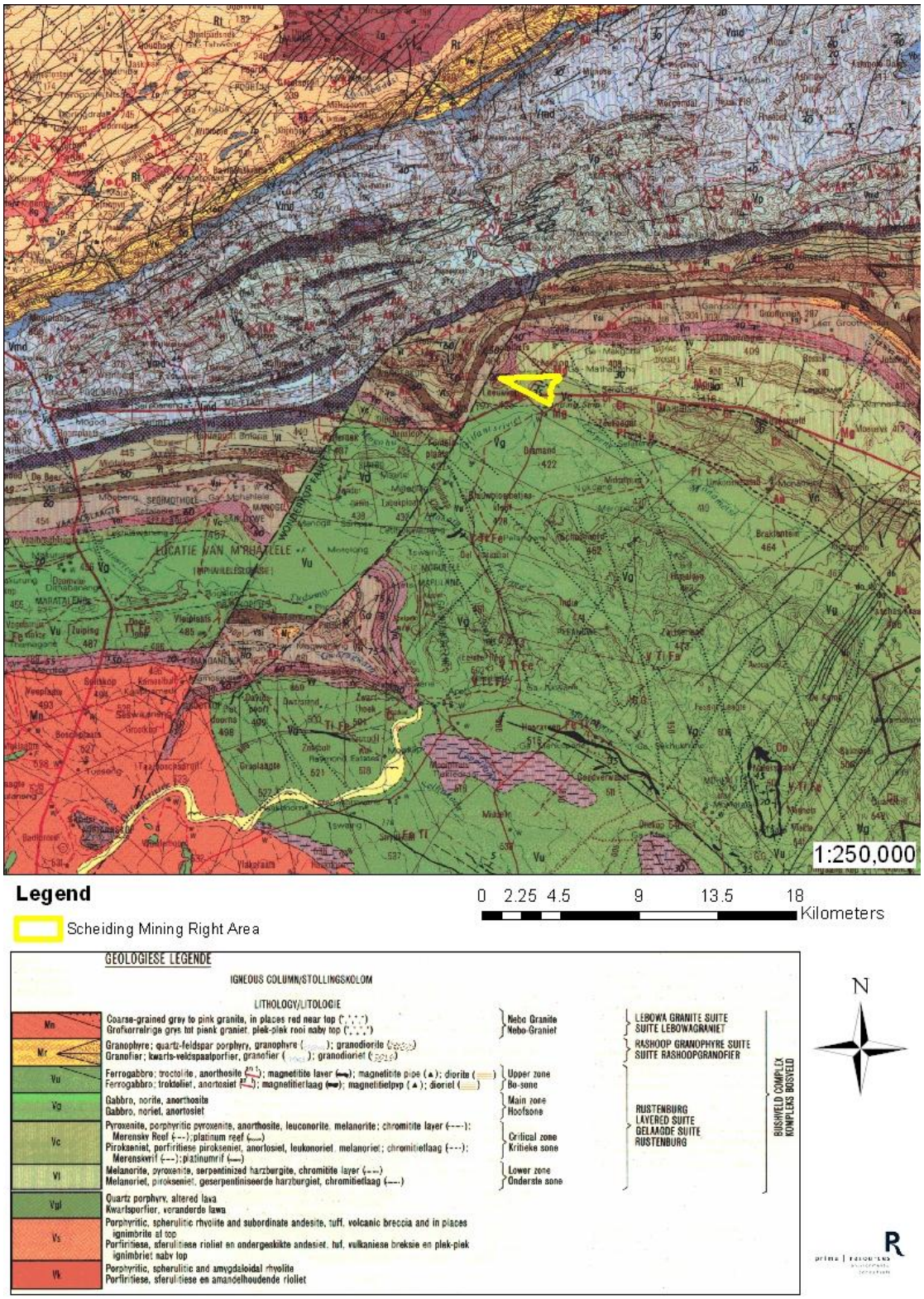

Figure 2: Geology of the Study area (1:250 000 Geological Map Series of the Republic of South Africa, Sheet number 2428 Nylstroom)

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