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> Marion.bamford@wits.ac.za 22 April 2021

Dr Ragna Redelstorff Heritage Officer Archaeology, Palaeontology & Meteorites Unit South African Heritage Resources Agency 111 Harrington Street Cape Town 8001

Dear Dr Redelstorff

RE: Request for Exemption of any Palaeontological Impact Assessment for the proposed three Waste Rock Dumps for Two Rivers Platinum Mine, southwest of Steelpoort, Limpopo Province

In my capacity as a professional palaeontologist, I am requesting exemption for palaeontological impact assessment in terms of the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998) which requires that the proposed development must be preceded by the relevant impact assessment, in this case for palaeontology.

The Two Rivers Mine, a joint venture between African Rainbow Minerals (ARM) (51%) and Implats (49%), is managed by ARM. They intend to establish three new Waste Rock Dumps on the areas as shown in Figure 1. The precise shape and extent of the dumps may change slightly from that indicated. The mine is in Farm Dwars River 372 KT.

The whole area is on intrusive igneous rocks of the Rustenburg Layered Suite (Bushveld Complex) with some overlying Quaternary sands and alluvium (Figure 2). In particular, the mine area is on the Dwarsriver Subsuite (Critical Zone) with anorthosite, norite gabbro and chromitite, as well as the overlying Dsjate Subsuite (Main Zone) with gabbro, norite and subordinate anorthosite (Cawthorn et al., 2006). Such rocks do not contain any fossils so there is no chance of the palaeontological heritage being impacted any way.

The Quaternary sands and alluvium are young transported sediments that do not preserve any fossils either. If any fossil fragments had been transported with the sands and alluvium they would be broken and out of context (Partridge et al., 2006), so would be of no scientific value.

This is confirmed by the grey and blue colouration in the SAHRIS palaeosensitivity map (Figure 3). We, request, therefore, for exemption for any further palaeontological assessments, and that from the palaeontological perspective, the project may proceed.



Figure 1: Locality map for the Two Rivers Mine project. Three Waste Rock Dumps as marked.



Figure 2: Geological map of the area around Dwarsriver Farm and the Two Rivers Mine. The location of the proposed project is indicated within the blue rectangles. Abbreviations of the rock types are: Q = Quaternary sands and alluvium; Vdj = Dsjate Subgroup; Vdr = Dwarsriver Subgroup. Map enlarged from the Geological Survey 1: 250 000 map 2430 Pilgrims Rest.



Figure 3: SAHRIS palaeosensitivity map for the site for the proposed new Waste Rock Dumps on Farm Dwars River 372 KT for the Two Rivers Mine shown within the yellow rectangles. Background colours indicate the following degrees of sensitivity: red = very highly sensitive; orange/yellow = high; green = moderate; blue = low; grey = insignificant/zero.

Yours faithfully

MKBamford

Prof Marion Bamford Palaeobotanist; PhD (Wits 1990)

Literature cited:

Cawthorn, R.G., Eales, H.V., Walraven, F., Uken, R., Watkeys, M.K., 2006. The Bushveld Complex. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). The Geology of South Africa. Geological Society of South Africa, Johannesburg / Council for Geoscience, Pretoria. pp 261-281.

Partridge, T.C., Botha, G.A., Haddon, I.G., 2006. Cenozoic deposits of the interior. In: Johnson, M.R., Anhaeusser, C.R. and Thomas, R.J., (Eds). The Geology of South Africa.

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Declaration of Independence

This letter has been compiled by Professor Marion Bamford, of the University of the Witwatersrand, sub-contracted by Elemental Sustainability, South Africa. The views expressed in this report are entirely those of the author and no other interest was displayed during the decision making process for the Project.

Specialist: Prof Marion Bamford

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Signature: