

P576-Aug18

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25 August 2018

Werner Nel
WNeI Environmental Consulting Services
20 Gloxinia Street
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Dear Werner

AQUATIC ECOLOGIST COMMENT: PROPOSED ASPBESTOS DISPOSAL SITE NEAR KLEINZEE FOR DE BEERS NAMAQUALAND MINES

Your request regarding aquatic ecological comment on the proposed site alternatives for the disposal of asbestos building material waste refers. A brief freshwater assessment and opinion is provided below based on a review of available literature, past aerial imagery and freshwater conservation mapping for the area.

The proposed disposal site alternatives are situated approximately 22km north of Kleinzee, in the Richtersveld Local Municipality that forms part of the Namakwa District Municipality in the Northern Cape Province (Figure 1). The aquatic feature within this area is Kwaganap River, a relatively small coastal river. The river is located within the Lower Orange Water Management Area (Quaternary catchment F20E), about 115 km south of the Orange River mouth. The river rises in the Skilpadnou, Beesvlei and Vaalvlei se Berge approximately 15km to the north-east of the proposed disposal site alternative and comprises of a large network of mostly episodic streams that drain the Namaqualand before entering a small pan, approximately 5.5km to the south-west of the sites (Figure 2).

In terms of conservation and biodiversity importance of the aquatic ecosystems, the Freshwater Ecosystem Priority Areas map (Figure 3) for the study area has the catchment north of the Buffels

River, that comprises of a number of small coastal rivers, mapped as a River FEPA sub-catchment. The pans and slimes dams about 3km to the north-west of the sites are mapped as a Wetland FEPA cluster but the pan into which the Kwaganap River drains is not mapped as a FEPA Wetland. In the 2016 Northern Cape Critical Biodiversity Areas (CBAs) map (Figure 4) for the study area, the areas with more natural terrestrial vegetation cover to the east and west of the proposed site alternatives have been mapped as terrestrial CBA One. Thus, the Kwaganap River is not considered highly significant from a biodiversity conservation point of view although as a river within FEPA sub-catchment, it is important that the ecological condition of the river is not degraded by the proposed activities.

Three alternative sites for the disposal of the asbestos sheeting and other asbestos waste material were identified. The proposed sites have been selected based on the distance from the waste source, accessibility and the proximity to potential future mining activities. Only areas where all mineral resources were previously mined out have been included for selection. Site 1 is the preferred site.

The alternative disposal sites are proposed to be placed within previous open cast mining areas. Two storm water channels have been included in the design of the site or pond area: a smaller one between the pond and the south slope of the existing embankment of the open cast mine area to divert storm water running down the embankment and a larger channel on the north side of the pond to divert the storm water past the waste ponds (Figure 5). The required volume is 3000 m³ (dimensions of approximately 2 x 25 x 60m) with an additional freeboard of 500mm at the top. The site will be lined as for a Class A site as asbestos is considered a hazardous waste.

The Kwaganap River historically appears to have passed directly through the area where the proposed disposal sites are located (Figure 6). The river, once it leaves the hillslopes and enters the relatively flat coastal plain has a poorly defined channel. The coastal zone at the foot of the hillslope has been subjected to open cast mining that has completely altered the topography and the course of the river such that there is no longer a discernible river channel or flow path near the proposed disposal sites. Currently any flow associated with this river appears to be diverted north of the sites (Figure 7). Flow in the river is episodic, only occurring for a short period of time after rainfall events within the catchment of the river. These flow events are likely to be very infrequent but of high intensity.

Given the altered topography and course of the watercourse at the site, there is not significant difference in the potential freshwater impacts for the various site alternatives although given the current topography at the site, there appears to be potential for flow from the river to flow into Site Alternatives 2 or 3. It is thus important in the selection of the disposal site to ensure that the flow path of the river is no longer likely to flood that site in an episodic flood event.

Of greater importance is the design of the disposal site. Given the episodic nature of the flow in the watercourse it is important that there is adequate stormwater management at the site to prevent flooding of the site during intense localised rainfall events. The proposed stormwater channels are supported. Potential water quality impacts are not considered to be significant given that the material is of an inert nature and the only contamination would be increased turbidity, which is naturally high for these rivers when they flow. The proposed disposal site for either of the site alternatives is thus likely to have a potential freshwater impact of very low significance.

Please feel free to contact me should you have any questions regarding the above.

Kind regards

A handwritten signature in cursive script, appearing to read 'Belcher', written in black ink.

Toni Belcher (P. Sci. Nat. 400040/10)

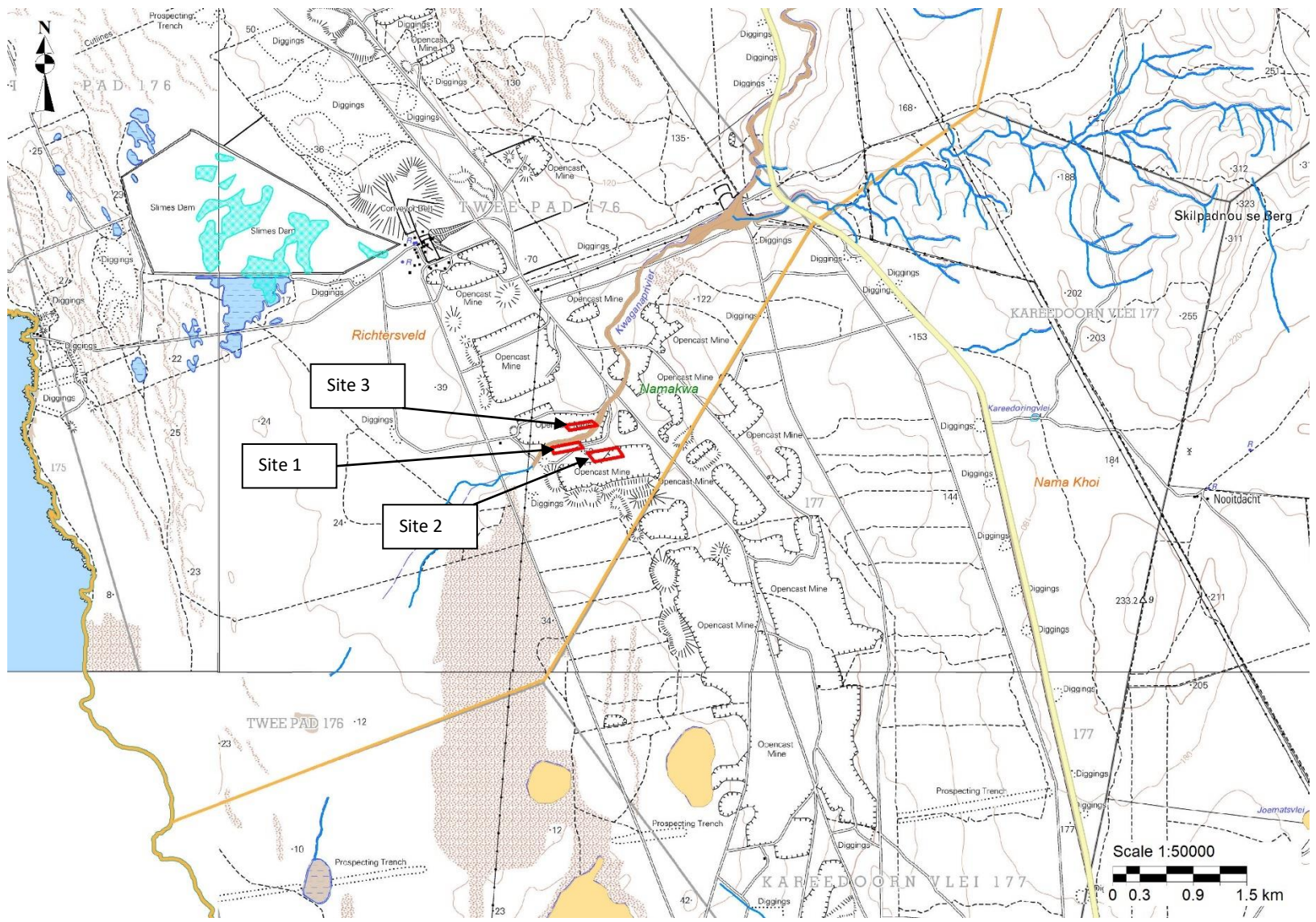


Figure 1: Topographical map (2917AC) showing the location of the alternative disposal sites



Figure 2. Orthophotograph showing the aquatic features within the wider study area

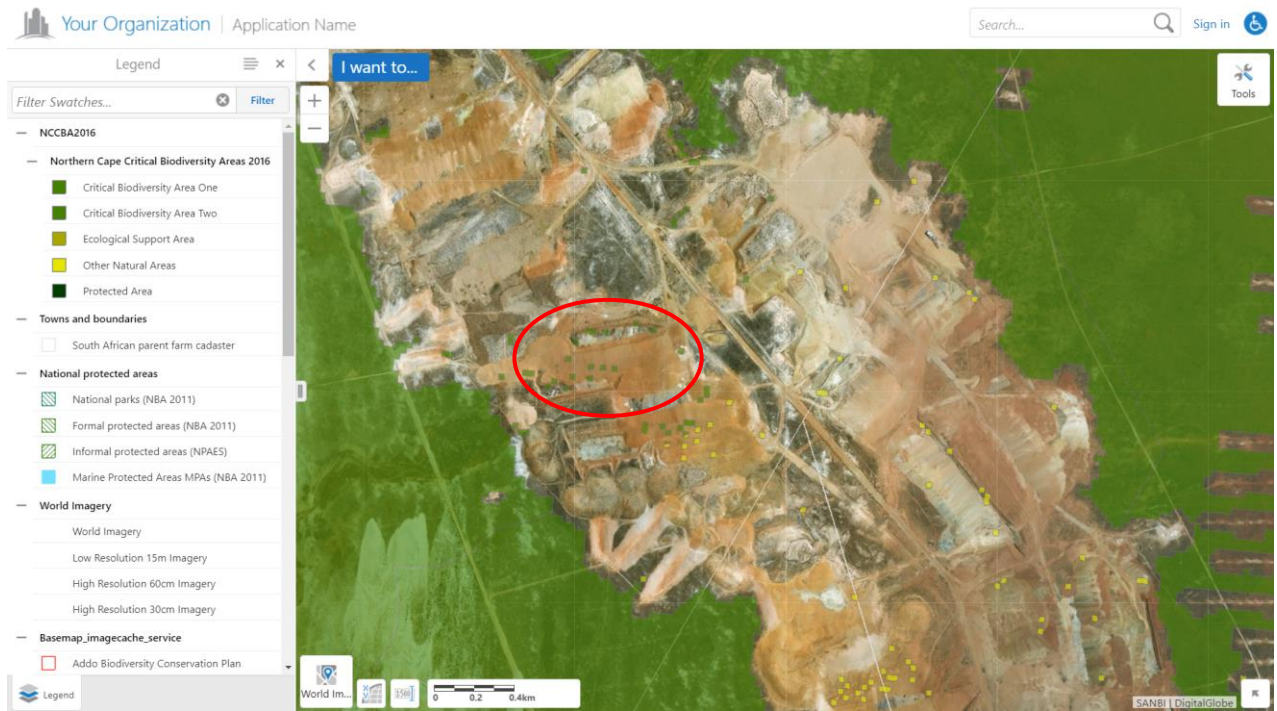


Figure 3: Northern Cape Critical Biodiversity Areas 2016 mapping for the site (SANBI BiodiversityGIS, 2017)

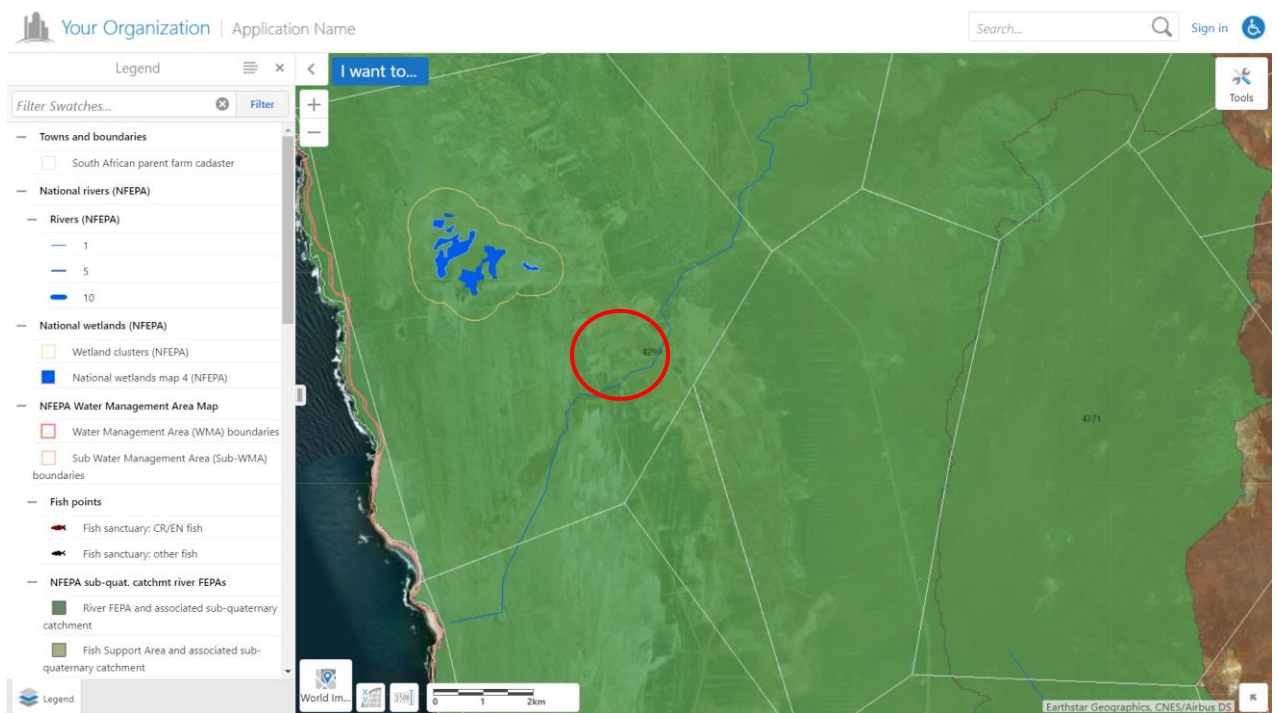


Figure 4: Freshwater Ecosystem Priority Areas mapping for the larger catchment areas in which the site occurs (SANBI Biodiversity GIS, 2017)

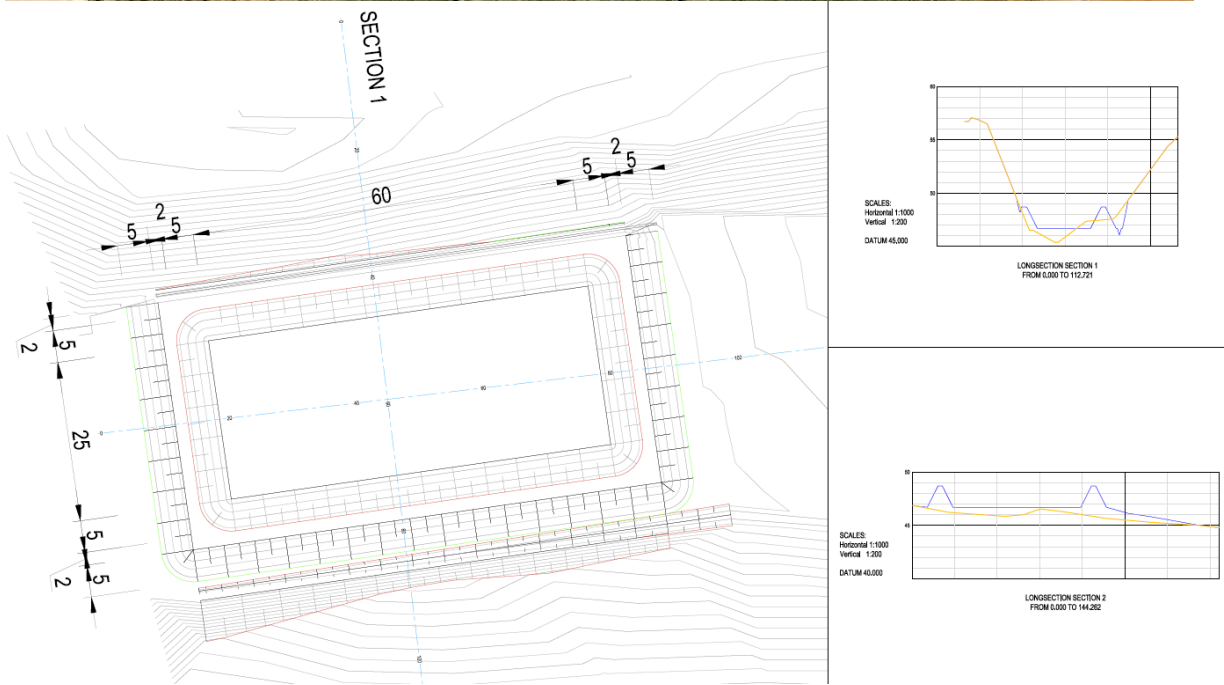


Figure 5. Engineering drawings of the proposed disposal site design for the preferred site



Figure 6. Orthophotograph (2014) with the proposed alternative disposal sites and the original Kwaganap River indicated



Figure 7. Google Earth image with the likely course of the watercourse. The potential alternative flow path is indicated by the blue arrows

APPENDIX 1: DECLARATION OF INDEPENDENCE BY THE INDEPENDENT PERSON WHO COMPILED A SPECIALIST REPORT OR UNDERTOOK A SPECIALIST PROCESS

I, Antonia Belcher, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in this application;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations and any specific environmental management Act;
- have no and will not have any vested interest in the proposed activity proceeding;
- have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the specialist input/study was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments on the specialist input/study;
- have ensured that the comments of all interested and affected parties on the specialist input/study were considered, recorded and submitted to the competent authority in respect of the application;
- have ensured that the names of all interested and affected parties that participated in terms of the specialist input/study were recorded in the register of interested and affected parties who participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence.

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Signature of the specialist:

Date: 28 August 2018

ABBREVIATED CURRICULUM VITAE:

Full Name	Antonia Belcher
Nationality	South African
Profession	Aquatic Ecologist and Environmental Management(P. Sci. Nat. 400040/10)
Years in Profession	25+ years

Professional Qualifications:

1984	Matriculation	Lawson Brown High School
1987	B.Sc. – Mathematics, Applied Mathematics	University of Port Elizabeth
1989	B.Sc. (Hons) – Oceanography	University of Port Elizabeth
1998	M.Sc. – Environmental Management (<i>cum laude</i>)	Potchefstroom University

Key Skills:

Areas of specialisation: Water education, Monitoring and evaluation of water resources, Catchment management, River, wetland and estuary management, Water resource legislation, Water resource institutions, River classification, River Reserve determination and implementation, Aquatic ecosystem assessments (Environmental Impact Assessments) and water use authorisations.

Toni Belcher has worked in the Department of Water Affairs and Forestry for more than 17 years. During this period she worked for the Directorate Water Quality Management, the Institute for Water Quality Studies and the Western Cape Regional Office and has built up a wide skills base on water resource management and water resource quality for rivers, estuaries and the coastal marine environment. Prior to this she taught mathematics for a period of two years. She is currently working BlueScience in the fields of water resource and water environmental education, as well as undertaking aquatic ecosystem assessments for environmental impact assessment and water use authorisation purposes. In 2006 she was awarded a Woman in Water award for Environmental Education and was a runner up for the Woman in Water prize for Water Research.

Summary of Experience:

1987 – 1988	Part-time field researcher, Department of Oceanography, University of Port Elizabeth
1989 – 1990	Mathematics tutor and administrator, Master Maths, Randburg and Braamfontein Colleges, Johannesburg
1991 – 1995	Water Pollution Control Officer, Water Quality Management, Department of Water Affairs, Pretoria
1995 – 1999	Hydrologist and Assistant Director, Institute for Water Quality Studies, Department of Water Affairs and Forestry, Pretoria
1999 – 2007	Assistant and Deputy Director, Water Resource Protection, Western Cape Regional Office, Department of Water Affairs, Cape Town

2007 - 2013 Self-employed
2013 – present BlueScience (Pty) Ltd

Papers and Publications:

More than 300 publications, papers and posters relating mostly to water resource quality and river health assessments in South African rivers and their management.

Recent projects that she has been involved in are:

- Classification of Water Resources in the Olifants-Doorn Water Management Areas, Department of Water Affairs;
- Development and piloting of a National Strategy to Improve Gender Representation in Water Management Institutions, where the focus is on improving the capacity to participate in water related decision making, Department of Water Affairs and Forestry;
- Compilation of a background document as well as a framework management plan towards the development of an integrated water resources management plan for the Sandveld;
- Specialist on the City of Cape Town project: Determination of additional resources to manage pollution in stormwater and river systems;
- River Health Programme monitoring for the Free State Region, Department of Water Affairs; and
- Framework for Education and Training in Water (FETWATER), Resource Directed Measures Network partner which has undertaken training initiatives on environmental water requirements in the SADC region.