


BACKGROUND INFORMATION DOCUMENT (BID)

as a component of the

Environmental Impact Assessment

for the

Proposed Mtwalume River Sand Winning Mining Right Application, Ugu District, KwaZulu-Natal.

Applicant:	Environmental Consultant:
SHE Sand	
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THE PURPOSE OF THIS DOCUMENT

This document aims to provide preliminary project information to enable you as an interested and affected party (IAP), with background information, and an opportunity to comment on the proposed development. This initial project information forms the basis of the Public Participation Process and offers you the opportunity to become actively involved in the project from the outset. Input from I&APs helps to ensure that all potential environmental issues are considered within the context of the proposed sand winning. All issues and comments raised by IAPs during scoping will be documented in the Scoping Report and Environmental Impact Assessment. This will assist in the identification of environmental issues that could have a negative and/or positive impact on the site and the community as a whole.

THE PROJECT APPLICATIONS

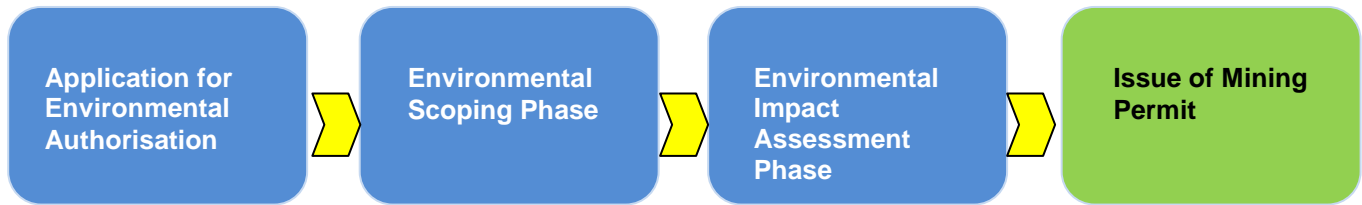
Enviroedge cc is submitting an application for a mining right and a water use licence application, on behalf of the applicant *SHE Sand* for the proposed sand winning on the Mtwalume River.

The proposed activity will be subject to Scoping and Environmental Impact Assessment in terms of the National Environmental Management Act 1998, (Act No. 107 of 1998), as amended, and associated Environmental Impact Assessment Regulations 2014, and, the Mineral and Petroleum Resources Development Act (No.28 of 2002).

A water use licence will be submitted to the Department of Water and Sanitation in terms of the National Water Act (No.36 of 1998), Section 21(c) *Impeding or diverting the flow of water in a watercourse*, and, (i) *Altering the bed, banks course or characteristics of a watercourse*.

These regulations identify various activities which may have a substantial detrimental effect on the environment. In addition, the Regulations list procedures for assessing potential associated environmental impacts. Scoping forms part of the initial phase of these procedures.

The Environmental Impact Assessment will consist of three phases as illustrated below.



THE PROPOSED MINING

The Mtwalume River is the divide between the Umdoni and Umzumbe Local Municipalities, and, as such, the study site falls across the boundary between the Umdoni and Umzumbe Local Municipalities, within the Ugu District Municipality. The project area is located north west of Mtwalume, within the Mtwalume River, approximately 3,9km upstream from the Mtwalume River mouth. The proposed mining area covers an area of 5.17 hectares. See corner point co-ordinates on the site plan.

River sand is generally clean and free of silt and clay, and this factor means that the bulk of the sand mined is utilised for building purposes. The composition and quality of the sand is determined by the source rock. Sands derived from the Karoo Supergroup are generally less suitable for use as building sands owing to the high shrinkage which results from the presence of clays. SHE Sand has identified the study site as having suitable sand material for building and commercial use. The sand extracted from the Mtwalume River will be screened on site to suitable size.

The proposed sand mining activities will entail a combination of the following methods:

Mechanical Excavation by Excavator

- Temporary diversion of the Mtwalume River within the proposed mining area.
- Mechanical excavation of river sand by excavator and stockpiling in a designated area.
- On site screening of stockpiled river sand to desired diameter.
- Remaining larger sand particles/stone will be returned to the river.
- Loading of haulage truck by tractor-loaded backhoe or excavator.
- Transportation of screened material to required end point (point of sale/distribution).

Where temporary stream diversion is not possible, a floating barge, pump and pipe system will be utilised.

Floating Barge Extraction

- River sand together with river water will be extracted via suction pipe from the river and stockpiled at the designated stockpile area along the river bank.
- Extracted water will be channelled to flow back to the river from the stockpile area, thereby retaining the extracted river sand at stockpile.
- Stockpiled river sand will be screened to desired size.
- Remaining larger sand particles/stone will be returned to the river.
- Loading of haulage truck by tractor-loaded backhoe or excavator.
- Transportation of screened material to required end point point (point of sale/distribution).

An existing campsite/laydown area located at 30°28'23.28"S 30°36'2.90"E would be utilised. The existing D1075 Road which runs parallel to the study are would be utilised as the main haulage access route.



Figure 1. Image taken from the southern Mtwalume River bank, from mid-point looking east.



Figure 2. Image taken from northern most point of mining area, on the southern Mtwalume River bank, looking east over proposed mining area.

5. AFFECTED AREA

Topography and Drainage

The site and surrounding areas comprises a steeply incised river valley with four non-perennial drainage lines that flow into the Mtwalume River, two from the northern bank and two from the southern bank. The Mtwalume River falls within the quaternary catchment (U80E).

The study area reaches a high point of approximately 213masl, to the south, and then falls away to a low point of approximately 125masl to the north east.

According to *Classification of Water Resources and Determination of the Comprehensive Reserve and Resource Quality Objectives in the Mvoti to Umzimkulu Water Management Area (2013)*, the Mtwalume River and its tributaries are mostly B, C, B/C and D rated in terms of the Present Ecological State (PES), and both, flow and non-flow related impacts dominate. Notable impacts are instream dams, forestry, subsistence agriculture and encroaching sugar cane fields. No importance has been noted for wetlands.

EC	DESCRIPTION OF EC
A	Unmodified, natural.
A/B	Boundary category between A and B.
B	Largely natural with few modifications. A small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged.
B/C	Boundary category between B and C.
C	Moderately modified. Loss and change of natural habitat and biota have occurred, but the basic ecosystem functions are still predominantly unchanged.
C/D	Boundary category between C and D.
D	Largely modified. A large loss of natural habitat, biota and basic ecosystem functions has occurred.
D/E	Boundary category between D and E.
E	Seriously modified. The loss of natural habitat, biota and basic ecosystem functions is extensive.
E/F	Boundary category between E and F.
F	Critically / Extremely modified. Modifications have reached a critical level and the system has been modified completely with an almost complete loss of natural habitat and biota. In the worst instances the basic ecosystem functions have been destroyed and the changes are irreversible.

Table 1 Ecological Categories (ECs) and descriptions

SQ number	River	Summary of <i>Status Quo</i> and linked EGSA Importance
U80E-5028	Mtwalume	River section is 60 km in extent, and is entirely rural. Upper reaches (33%) comprised for plantation forestry. Mid-reaches (33%) comprised of extensive rural settlement (low density) although limited due to steep river banks, however EGSA appears to be important given status of communities. Lower reaches (33%) comprised of open terrain/natural vegetation due to deeply incised river banks.

Table 2. Summary of the Mtwalume River status quo linked to the Ecological, Goods, Services and Attribute (EGSA)

Vegetation

The Vegetation of South Africa, Lesotho and Swaziland describes the vegetation in the study area as Indian Ocean Coastal Belt, which corresponds with the Subtropical Coastal Forest Biome, and Mucina and Rutherford (2006) classify the vegetation group as KwaZulu-Natal Coastal Belt (CB3). The KwaZulu-

Natal Coastal Belt is characterised by highly dissected undulating plains, which previously may have been covered to a large extent with various types of subtropical coastal forest. Some primary grassland dominated by *Themeda triandra* still occurs in the hilly, high rainfall areas, however, anthropological activities in this belt have created secondary *Aristida* grasslands, thickets and patches of coastal thornveld. Three endemic plant species are recorded by Mucina and Rutherford for the KwaZulu-Natal Coastal Belt (CB3) vegetation type, and these include *Vernonia Africana* (Extinct), *Barleria natalensis* (Baleria) (Extinct) and *Kniphofia pauciflora* (Dainty poker) (Critically Endangered and Declining).

Within the study area, and associated with steep gradients, the vegetation on the north banks of the Mtwalume River comprises intact Coastal Forest vegetation. This vegetation would not be disturbed by the proposed mining activities. The southern river bank having more gentle gradients shows evidence of previous disturbance. Small shrubs and vegetation thickets occur in the south eastern extent of the southern riverbank, however these are largely infested with invasive plants including Lantana and Castor Oil. Heading upstream along the southern river bank, the D1075 road veers closer to the Mtwalume River, and eventually abuts the river upstream. Scattered alien invasive plants and woody species were noted to have established on dry alluvial deposits across the proposed mining area at a low flow period.

Fauna

There are four non-perennial drainage lines that flow into the study area, two from the northern bank and two from the southern bank. The drainage areas and their associated vegetation are likely to provide habitat for associated species such as birds, small mammals, reptiles and amphibians. The Ezemvelo KZN Wildlife Terrestrial Systematic Conservation Plan 2010 (TSCP) allocates the study area a Biodiversity Priority Area 3 status. The species list for the study area and surrounds, includes the following: *Edouardia conulus*, *Doratogonus montanus*, *Centrobolus anulatus*, *Doratogonus infragilis*, *Gulella separata*, *Cochlitoma semigranosa*.

The presence of aquatic fauna is currently not known, however should form part of the EIA process.

Culture and Heritage

No areas of cultural or heritage significance were noted from preliminary site investigations. KwaZulu-Natal Heritage (AMAFAs) will be consulted as part of the Public Participation Process.

National and District Roads

The proposed Mtwalume Mining site abuts the D1075 Road. The road joins the R102 to the south. These roads would be the main transportation route for haulage vehicles.

Services

Power lines and telecommunications were noted on site, however, the presence of underground services is not known. All relevant government departments or parastatals will be consulted as part of the Public Participation Process.

Geology

Mucina and Rutherford describe the regional geology as Ordovician Natal Group sandstone, Dwyka tillite, Ecca shale and Mapumulo gneiss or Mokolian within the KwaZulu Natal Coastal Belt. The weathering process of old dunes has produced Berea red sand in places and the soils supported by the rock types in the area are shallow over hard sandstones and deeper over younger and softer rocks.

Land use and Socio-economic structure

Land use for the proposed site and in the general surrounding areas consists of predominantly commercial agriculture, unspecified land uses are indicated to the north-west of the site. The study area is semi-rural with small commercial businesses located 500m to the north east of the site. The nearest town is Mtwalume located 2.5km to the east.

6. POTENTIAL KEY ISSUES

Watercourse Ecology

Disturbance to hydrological patterns of the Mtwalume River by mining activities may cause damage to the terrestrial and aquatic fauna and flora associated with this system. Sediment characteristics and flow patterns may be altered. Permanent alteration of river flow patterns is a risk and could impact on *in-situ* ecological systems and communities as well as those located both up and downstream of the proposed mining site.

Sediment Loss

Sand mining is an extractive process, and if not correctly managed the cumulative impacts of sediment loss will impact the river system.

Vegetation clearance

Vegetation may be disturbed in order for mining vehicles to gain access to the Mtwalume River. This should not occur as a once off clearance, but should be phased, in order to help reduce soil erosion potential and the proliferation of exotic weeds. Weeds will thrive on disturbed soil, and will spread and present an eradication problem later should these plants set seed, especially near watercourses. Cleared areas would require re-vegetation.

Erosion

Potential erosion should always be considered during and after mining. If strict mitigation measures are implemented these potential factors can be prevented / reduced. Mitigation measures include river embankment stabilisation and re-vegetation of affected areas as well as the avoiding of areas susceptible to erosion.

Positive Impacts - The opportunities created by this operation through social upliftment may help to outweigh the negative impacts. It is imperative that during the operational phase the mining activities occur over as small an area as is practical.

7. INTERESTED AND AFFECTED PARTIES

All Interested and Affected Parties (IAPs) wishing to become registered as such and receive additional information, as well as an invitation to any public meeting, should one be required, should complete and return the overleaf registration form or contact the environmental consultant to register as soon as possible (within 14 days of receiving this document). If you would be so kind, if you are aware of any IAPs who have not been informed or identified by ourselves, please let us know, so that they too may have the opportunity to register and / or receive information. Any issues, which you would like to raise and have not been identified to date, would be welcomed.

References

Mucina L & Rutherford MC (eds) 2006. *The Vegetation of South Africa, Lesotho and Swaziland*. Strelitzia 19. South African National Biodiversity Institute. Pretoria.

Department of Water Affairs, South Africa, July 2013. Classification of Water Resources and Determination of the Comprehensive Reserve and Resource Quality Objectives in the Mvoti to Umzimkulu Water Management Area: Status quo assessment, IUA delineation and biophysical node identification. Prepared by: Rivers for Africa eFlows Consulting (Pty) Ltd,



Figure 3 – Locality Plan

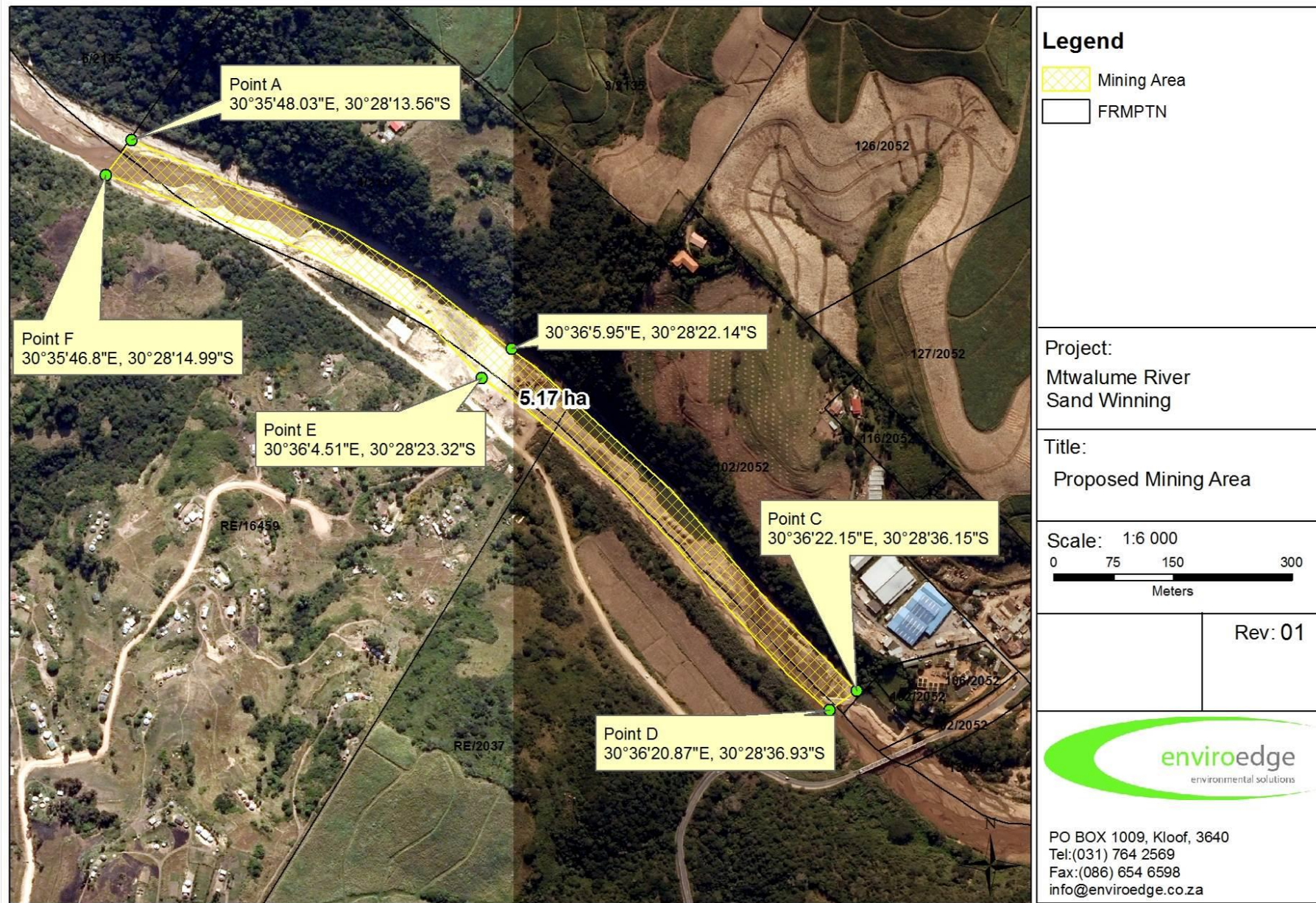


Figure 4 – Site Plan

**Environmental Impact Assessment for the Proposed
Mtwalume Mining Right –
Registration and Comment Form**

KINDLY COMPLETE THIS FORM AND RETURN IT TO:

Enviroedge cc

PO BOX 1009, Kloof, 3640

Tel:(071) 140 8350

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info@enviroedge.co.za

Title	
First Name	
Surname	
Email	
Telephone	
Fax	
Organisation	
Capacity	
Physical Address	
Postal Address	
1. What is your main interest with regards to the proposed project?	
2. Do you have any issues or points of concern or support regarding the proposed project?	
3. Are there any additional stakeholders who you feel should be consulted with regards to the proposed project?	