

PROSPECTING RIGHT APPLICATION FOR HEAVY MINERALS FROM DREDGED SAND OFFSHORE OF DURBAN

DRAFT BASIC ASSESSMENT REPORT

KZN 30/5/1/1/2/10780PR

7 MARCH 2019



Photo: Peter Terry-Lloyd, MarineTraffic.com

Prepared by Alan Smith Consulting for Marine Sands (Pty) Ltd

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mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

**BASIC ASSESSMENT REPORT
and
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED)

NAME OF APPLICANT: Marine Sands (Pty) Ltd

TEL NO: 0112681644

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POSTAL ADDRESS: P.O BOX 52673, SAXONWOLD, JOHANNESBURG, 2132

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FILE REFERENCE NUMBER SAMRAD: KZN 30/5/1/1/2/10780PR

1. IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining “will not result in unacceptable pollution, ecological degradation or damage to the environment”.

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or a permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

2. OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

The objective of the basic assessment process is to, through a consultative process—

- (a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context;
- (b) identify the alternatives considered, including the activity, location, and technology alternatives;
- (c) describe the need and desirability of the proposed alternatives,
- (d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the these aspects to determine:

- (i) the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
- (ii) the degree to which these impacts—
 - (aa) can be reversed;
 - (bb) may cause irreplaceable loss of resources; and
 - (cc) can be managed, avoided or mitigated;
- (e) through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
 - (i) identify and motivate a preferred site, activity and technology alternative;
 - (ii) identify suitable measures to manage, avoid or mitigate identified impacts; and
 - (iii) identify residual risks that need to be managed and monitored.

PART A
SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

3. Contact Person and correspondence address

a) Details of

i) Details of the EAP

Name of The Practitioner: Alan Smith Consulting cc

Tel No.: 031 2086896

Fax No. : N/A

e-mail address: asconsulting@telkomsa.net

ii) Expertise of the EAP

(1) The qualifications of the EAP

(with evidence as **Appendix 1**)

Dr Alan Smith: PhD (Geology), Pr. Sci. Nat.

Ms Lisa Guastella: MSc (Oceanography), Pr. Sci. Nat.

(2) Summary of the EAP's past experience.

(In carrying out the Environmental Impact Assessment Procedure)

The consultants' qualifications and experience are outlined in Appendix 1, together with evidence of qualifications.

Dr Alan Smith has a PhD in geology; Ms Lisa Guastella has a MSc in Oceanography.

Both consultants have practised as environmental consultants and have 30 years of work experience each.

Past relevant EIA experience includes:

- Upgrade of stormwater outfall, Beach Road, Amanzimtoti on behalf of eThekweni Municipality.
- Durban Beachfront Promenade Extension and Node Development – Basic Assessment and Specialist Report input, for SDP on behalf of eThekweni Municipality.
- Isipingo nodal development: Lifesaving Club demolition and relocation of facilities to Reunion Park - Basic Assessment together with SDP on behalf of eThekweni Municipality.
- Demolition and Reconstruction of Sunkist Stormwater Outfall, Durban, eThekweni Municipality.
- Objective analysis of EIA and public opinion pertaining to the proposed Plettenberg Bay Marina development on behalf of Environmental Evaluation Unit (EEU), UCT, to advise the Cape Provincial Administration for decision-making.
- EIA for Umfolozi Casino Conference & Hotel Resort, Richards Bay
- EIA: Demolition and Reconstruction of Sunkist Stormwater Outfall, Durban for Durban Municipality.
- Applications for small-craft launch site licences for Ethekeeni Municipality & EMPs
- Basic Assessment: Richards Bay cemetery expansion for uMhlathuze Municipality
- Basic Assessment: Community bridge over Tugela River at Sahlumbe, for KZN Department of Transport.
- Basic Assessment: Construction of gauging weirs on the Londonspruit, Coedmore Quarry, for AFRISAM
- Environmental Management Plan: Café Fish, Durban Harbour
- Environmental Impact Assessment: Elysium Desalination Plant
- Proposed upgrade of Tinley Manor Beach facilities: Specialist Report: Physical Marine & Coastal Impacts, input to BAR.
- Richmond Waste Water Treatment Works Upgrade, Amendment Report: Geomorphological & Wetland Specialist Report, input to BAR.

b) Location of the overall Activity

Farm Name:	N/A
Application area (Ha)	9.8611 ha
Magisterial district:	Durban
Distance and direction from nearest town	Offshore immediately south to east of the Durban Harbour South Pier, City of Durban, within 3 kilometres thereof
21 digit Surveyor General Code for each farm portion	N/A - See map and co-ordinates – Appendix 2

c) Locality map

Attach a locality map at a scale not smaller than 1:250000 showing the nearest town and attach as **Appendix 2**

d) Description of the scope of the proposed overall activity

Attach a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site.

The location is as per the locality map contained in **Appendix 2**.

This application is made in relation to a prospecting rights application wherein prospecting is to determine if certain heavy minerals are present in potentially economic concentrations in the dredged beach and sea floor sand which may contain inter alia; ilmenite, rutile, zircon, garnet and magnetite. This sand has historically, and is currently, being dredged by Durban port authorities (Transnet) from the ocean floor at an area known as the "sand trap" immediately south to east of the Durban harbour's South Pier. The sand is thereafter deposited to the hopper at the "A" berth in the Durban port and subsequently pumped by the eThekweni Municipality northward along the Durban beaches. Alternative sand replenishment measures involve depositing sand on the "mound" offshore of Durban, or more recently, in emergency measures, pumped dredged sand directly from the dredger ship via a pipeline to the beaches. These activities are conducted in order to augment the sand supply to the beaches and to clear the harbour entrance.

The prospecting of these sea floor sands and the heavy minerals contained within the sands, shall occur within the translocation process of the dredged sand to the sand hopper site and/or from the dredger itself. The sampling of these sands at either of these sites (i.e. the sand hopper or dredger) will not materially impact the surrounding environment nor detrimentally affect the composition and volume of sand available for the augmentation of the beaches.

The purpose of the prospecting right applied for is to determine the volumes and grades of heavy minerals within the sea floor sands, as currently being dredged, and to further determine if such heavy minerals may be economic to be extracted from the sea floor sands that will continue to be dredged in the future.

(i) **Listed and specified activities**

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY (HA OR M ²)	LISTED ACTIVITY	APPLICABLE LISTING NOTICE
<p>E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.</p> <p>E.g. For mining - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)</p>		<p>Mark with an X where applicable or affected</p>	<p>GNR 983, GNR 984 or GNR 985</p>
<p>Prospecting right: Sampling of dredged sand after removal thereof from sea floor through current operations of third parties</p>	<p>Within a 9.8611 Ha area dredged by Transnet</p>	<p>X Activity 20 (Listing Notice 1)</p>	<p>GNR 983</p>
		<p><input type="checkbox"/></p>	
		<p><input type="checkbox"/></p>	
		<p><input type="checkbox"/></p>	
		<p><input type="checkbox"/></p>	
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		<p><input type="checkbox"/></p>	

(ii) **Description of the activities to be undertaken**

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/mined and for a linear activity, a description of the route of the activity).

The type of commodity is heavy minerals that may be present in marine sea floor sands that will have already been dredged by Transnet in the proposed prospecting rights area of Area 1, including, inter alia, ilmenite, rutile, zircon, garnet and magnetite.

Area 1 relates to the area known as the “sand trap” up to 1 km offshore east to south of the Durban harbour’s South Pier (refer Appendix 2) off Durban’s Bluff.

Physical prospecting will comprise a sand sampling survey of the Transnet dredged sand by a competent person and, with the consent of the relevant authority, will consist of removal of hand collected small sand samples (approximately 1 kg) from, either:

- a. Within and/or around the hopper system located at the A berth in the Durban port (refer Fig. 1, Appendix 3); and/or
- b. On the dredger ship, which is responsible for the dredging of the sand within the prospecting areas applied for (refer Fig. 2, Appendix 3).

Sampling will take place when the dredger is operating within the area specified. The sampling will be non-invasive. It is submitted that no prospecting will occur (in situ) on the ocean floor prior to the dredging of the sand within the prospecting areas applied for. The proposal relates only to sampling of the sand that has already been dredged by Transnet to determine if economic concentrations of heavy minerals are present in the dredged sand.

No infrastructure will be developed, and no processing of materials will take place on site; all sample preparation and analyses will take place in registered and established off-site laboratories and facilities. The sand will be analysed in an offsite commercial laboratory to determine the concentrations of heavy minerals. No environmental disturbances are envisaged during the prospecting process; the sampling is a physical process with no chemical or other substances added in situ and thus will not detrimentally impact the surrounding environment, nor materially affect the composition and volume of sand available for the augmentation of the beaches. The initial focus of the programme will be initiated by a Proof of Concept study for a year which will review of existing data, undertake limited sampling of dredged sand material and a high-level review of various technical, contractual, commercial and logistical aspects of the proposed project. It is envisaged that the initial sampling process and analysis of the samples will take an estimated 3-5 months. Should the Proof of Concept study provide positive results, a Scoping Study and subsequently a Feasibility Study will be undertaken in which similar work would be undertaken to increasingly more detailed levels. Each of these subsequent programmes will take approximately 12 months and will involve the same sampling of already dredged material either on the dredger or at the hopper. In each of the three 12-month phases, sampling should ideally be undertaken over a prolonged enough period to ensure that the effect of variations in sea and weather conditions on the sand samples are monitored and determined

e) Policy and Legislative Context

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT. E.g. In terms of the National Water Act a Water Use License has/ has not been applied for
Mineral and Petroleum Resources Development Act (Act 28 of 2002), Section 16 as amended	Prospecting activities: KZN 30/5/1/1/2/10780PR	Conditions and requirements attached to the granting of a prospecting right will apply to the prospecting activities
National Environmental Management Act, No 107 of 1998 (as amended) Listing Notice 20 of Listing Notice 1	Prospecting activities: KZN 30/5/1/1/2/10780PR	The appropriate environmental authorisation must be obtained before proceeding with any prospecting activities. Duty of care, public participation, consideration of alternatives and environmental impacts.
National Heritage Resources Act, 25 of 1999 ("NHRA")	Commenting authority	Archaeological awareness
Constitution of the Republic of South	Rights of South	The prospecting activities

<p>Africa: everyone has a right:</p> <p>a. to an environment that is not harmful to their health or wellbeing; and</p> <p>b. to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that:</p> <p>i. prevent pollution and ecological degradation;</p> <p>ii. promote conservation; and</p> <p>iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p>	<p>African citizens</p>	<p>shall be conducted in such a manner that there are no anticipated significant environmental impacts</p>

f) Need and desirability of the proposed activities.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The aim of the prospecting activities is to evaluate the heavy mineral content of the marine sand already dredged by Transnet immediately east to south of the Durban Harbour entrance to determine the economic value of the heavy minerals and determine the viability of establishing an operation for extracting any mineral resource that may be identified in the prospecting. The proposal presents an opportunity to maximise the return from a process where the sand has to be dredged as a matter of course and this project would merely entail opportunistically removing the heavy mineral content. Should the proposed prospecting programme prove the economic viability of the project and logistically possible, the financial gains may offset some of the costs of the dredging by Transnet and the eThekweni Municipality's Durban beach nourishment scheme. Furthermore, should extraction of heavy minerals prove economically viable and proceed, it would enhance the eThekweni regional economy and that of Kwazulu Natal and the national mineral industry, including exports and job creation

g) Motivation for the overall preferred site, activities and technology alternative.

The site is known as the "sand trap" area offshore of Durban Harbour (refer **Appendix 2**) that Transnet dredges for maintenance purposes and then eThekweni Municipality utilises (the sand material) for beach nourishment. There is no site alternative, as this is the area that requires maintenance dredging. Were Transnet not to dredge this area, there would be an un-natural sand build-up, as the natural northward movement of sand via the longshore drift is blocked the South Pier.

The sampling would be done at selected points within the sand collection and distribution system, either at the sand hopper or alternatively on the dredger (refer **Appendix 3**). Permission for sampling would be required to be obtained from the operators of the sand hopper system and/or the dredger. Samples will be collected by hand, with approximately 1 kg of material in each sample. The sampling protocol would ensure that the samples are representative of the sand being dredged. There is no alternative technology for this critical aspect to determine the grade of heavy minerals in the dredged sand.

The approximately 1 kg sample would be bagged and stored before drying and dispatch to the laboratory of Scientific Services Ltd who are ISO accredited. Initially the dried samples will be visibly examined for presence of dark minerals which will be a proxy estimate for the heavy mineral component. Thereafter the grain size variation and proportion of slimes material will be determined. This will be followed by dense media separation, or cyclones to estimate the total heavy mineral count. Selected samples will be analysed by XRF for significant HMS chemical components of titanium, Zirconium and iron. Further QEMSEM analysis of selected samples will estimate the proportion of ilmenite, rutile zircon and iron and other heavy mineral constituents. The distribution of the heavy minerals will then be plotted, which will allow for the determination of the global grade of heavy minerals in any one of the dredged areas

h) Full description of the process followed to reach the proposed preferred alternatives within the site.

NB! – This section is about the determination of the specific site layout and the location of infrastructure and activities on site, having taken into consideration the issues raised by interested and affected parties, and the consideration of alternatives to the initially proposed site layout.

i) Details of the development footprint alternatives considered.

With reference to the site plan as provided above and the location of the individual activities on site, provide details of the alternatives considered with respect to:

- (a) the property on which or location where it is proposed to undertake the activity;
 - (b) the type of activity to be undertaken;
 - (c) the design or layout of the activity;
 - (d) the technology to be used in the activity;
 - (e) the operational aspects of the activity; and
 - (f) the option of not implementing the activity.
- (a) The area (Area 1) is the sand trap area that Transnet routinely dredges and then uses the material to replenish Durban's beaches north of the Durban Harbour northern breakwater, thus no alternative area is considered. The other prospecting rights applications submitted in tandem with this application (Area 2: KZN 30/5/1/1/2/10778PR and Area 3: KZN 30/5/1/1/2/10779PR), have the same attributes in that they are, or are proposed to be, sites for Transnet dredging.
- (b) The type of activity involves sampling as outlined in section g) above. The prospecting activities are also provided in the Prospecting Works Programme, submitted to DMR.
- (c) The design of the activity is such that sand samples will be taken either from the sand hopper or directly from the dredger, as outlined in g) above. The sand samples will correspond to where the dredger operates in Area 1, as per the layout in Appendix 2.
- (d) The technology is as outlined in g) above. Sampling will be non-invasive and will take sea floor sand that has already been disturbed and removed from the sea floor by the dredger. In addition to the dredged sand samples that will be collected in all three phases for assay and grade purposes, during the Phase 2 Scoping Study and Phase 3 Feasibility Study, larger (1 m³) dredged sand samples may be collected for bench-scale metallurgical test work in a laboratory to determine the applicability of various extraction techniques on the sand samples. It is likely that this off site test-work will involve studying the size distribution of the sand components, removal of slimes, gravity concentration of minerals of higher density and the electromagnetic separation of the various potentially economic sand particles.
- (e) The operational aspects are as outlined in g) above. *Proof of Concept*: Initially, between 20 and 50 samples will be collected over a 3-month period to provide an early indication of the concentrations of the heavy minerals and whether they are likely to be present in economically viable concentrations. The sampling would only commence after a 3-month literature survey. The sampling process and analysis of the samples will take an estimated 5 months, as time delays are essential between sampling surveys. It will be necessary, once prospecting rights are granted, to liaise with the relevant Third Parties, in particular those parties collecting the dredged sand (i.e. Transnet), and those parties that operate the sand hopper and the sand beach pumping system (i.e. eThekweni Municipality). It is likely that agreements will have to be negotiated and concluded with these Relevant Third Parties, thus it is anticipated that the entire first phase of sampling and assessment will take approximately 12 months.
- Should the results of the initial Proof of Concept study outlined above be positive, a *Scoping Study* will proceed in Year 2 of the operation. Should, in the opinion of Marine Sands Pty Ltd, the Proof of Concept study not have positive results, the project and work programme would be terminated, and no further work would be undertaken. The Scoping Study will mostly include periodic sampling of the hopper or the sand distribution, conducted over a 12-month period to determine any time-dependent variations in grade of the heavy mineral content of the pumped sand. The Scoping Study would undertake similar categories of work to those set out in the Proof of Concept Study, but in all cases the work would be done in more detail. Preliminary environmental test-work will be undertaken during this phase. An infrastructure and logistics study would review, in more detail, the potential sites of the operation along with the availability of site access, and services of water electricity etc. A marketing and transport study would refine the identification of potential markets and determine prices that would render the project economically viable, information of which would feed into a financial and operational model. Should this indicate the project to be viable, then a feasibility study would be recommended, but if not, the project will be curtailed.
- The *Feasibility Study* would include all aspects normally undertaken in such a study, including environmental impact, logistics and infrastructure requirements, initial capital expenditure and operating and financial modelling. If the results of the Feasibility study are positive, mining rights

would be applied for and financing for project development and production would be arranged in this phase.

- (f) Prospecting activities are essential to investigate and confirm the presence and quality of heavy mineral deposits. Should the activity not be implemented, opportunity will be lost to determine the viability of heavy mineral extraction using an already available resource, i.e. dredged sand. The proposed study represents an opportunity to optimize the value of an existing resource that is anyway transported from the seafloor to the beach. Should the prospecting right be refused, a potential economically viable heavy mineral resource will effectively be sterilised.

ii) Details of the Public Participation Process Followed

Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultation. NB! The affected parties must be specifically consulted regardless of whether or not they attended public meetings. Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land.

The following public participation has been conducted for the proposed project to date:

- Identification of stakeholders and compilation of comprehensive Interested and Affected Party database (I&AP Register). Stakeholders, as part of the Public Participation Process, include Transnet and eThekweni municipality as occupiers of the property, i.e. area dredged, sand hopper owners and dredger owners/operators; municipal officials and ward councillors; relevant State Departments; relevant sporting clubs and associations; relevant NGO's and commenting authorities. The database was reviewed and updated with the latest contact details of the relevant stakeholders (refer Appendix 4.3). All identified authorities those I&AP's that had expressed interest in the process and/or registered under the previous process (similar applications for Area 2: KZN 30/5/1/1/2/10778PR and Area 3: KZN 30/5/1/1/2/10779PR) were informed by email and sent copies of the public notice and BID (refer Appendix 4.3).
- Fixing site notices at the following locations (refer Appendix 4.1)
 - (i) Entrance gate to the National Sea Rescue Institute, sand hopper and Berth "A" at Durban Harbour
 - (ii) Notice board at the Point Watersports Club, Point, Durban
 - (iii) Landward end of uShaka Pier, opposite Moyo's restaurant
- Placing an advertisement in the English medium "The Mercury" newspaper, Friday 25 January 2019 (refer Appendix 4.2)
- Circulation to all identified I&APs and relevant authorities of a Background Information Document (BID) and the public notice (refer Appendix 4.3).
- Meetings between Marine Sands (Pty) Ltd and representatives from Transnet and the Stormwater & Catchment Management Unit (responsible for beach nourishment scheme) of eThekweni Municipality took place during the previous process for Areas 2 and 3 and do not need to be duplicated, as the principles of this application are the same.
- Compilation and circulation of draft Draft Basic Assessment Report (BAR) (this report) to all I&APs, Key Stakeholders and Organs of State (refer Appendix 4.3) to facilitate preliminary comments on the proposed prospecting right, allowing the EAP to address the issues during the EIA process for a 30-day period.
- The Draft Basic Assessment was circulated to all I&AP's via email and a hard copy was made available at the Durban Central library. The Draft Basic Assessment is available for comment and review for a period of 30 days.
- All comments received thus far during the public participation process, as well as responses provided, have been captured and are recorded in item (iii) below. Completed I&AP registration forms and relevant email communications are provided in Appendix 4.4.
- Once DMR has made a decision, all registered I&APs and relevant authorities will be notified of the outcome of the application.

iii) **Summary of issues raised by I & Aps**
 (Complete the table summarising comments and issues raised, and reaction to those responses)

INTERESTED AND AFFECTED PARTIES List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted	DATE COMMENTS RECEIVED	ISSUES RAISED	EAPs response to issues as mandated by the applicant	Section and paragraph reference in this report where the issues and or response were incorporated.
<u>AFFECTED PARTIES</u>				
Landowner/s	<input type="checkbox"/>			
	<input type="checkbox"/>			
	<input type="checkbox"/>			
Lawful occupier/s of the land		N/A		
	<input type="checkbox"/>			
	<input type="checkbox"/>			
Landowners or lawful occupiers on adjacent properties		N/A		
	<input type="checkbox"/>			
	<input type="checkbox"/>			
	<input type="checkbox"/>			
Municipal councillor (if more than one, attach list as an				

Annexure)					
Conrad Dlamini Bongimusa Ward councillor (ward 26 Point)	X	-	None yet, notice and BID sent 30 Jan 2019		
JP Prinsloo Ward councillor (ward 66 Bluff)	X	-	None yet, notice and BID sent 30 Jan 2019		
Municipality (if more than one, attach list as an Annexure)					
eThekweni Municipality Development Planning Dept: LUM branch	X	-	Notification and BID sent to Dianne van Rensburg of eThekweni Municipality, who co-ordinates responses from the relevant line departments at eThekweni. No responses to date.		
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e					
Transnet - Environmental	X	-	None yet, notice and BID sent 30 Jan 2019		
Transnet – Engineering services	X	-	None yet, notice and BID sent 30 Jan 2019		
Transnet – Business Unit	X	-	None yet, notice and BID sent 30 Jan 2019		
Transnet – Group Capital	X	-	None yet, notice and BID sent 30 Jan 2019		
Transnet – New Business Development	X		None yet, notice and BID sent 30 Jan 2019		
DWS	X		None yet, notice and BID sent 30 Jan 2019		
Communities					
Dept. Land Affairs					
Dept of Land Affairs	X	-	None yet, notice and BID sent 30 Jan 2019		
Land Claims Commission	X	-	None yet, notice and BID sent 30 Jan 2019		
Traditional Leaders					

Dept. Environmental Affairs					
National	X	-	None yet, notice and BID sent 30 Jan 2019		
Provincial	X	-	None yet, notice and BID sent 30 Jan 2019		
Other Competent Authorities affected					
SAHRA	X	-	None yet, notice and BID sent 30 Jan 2019		
EKZNW	X	-	None yet, notice and BID sent 30 Jan 2019		
DAFF	X		None yet, notice and BID sent 30 Jan 2019		
<u>OTHER AFFECTED PARTIES</u>					
Silverwave	X		Email correspondence from Marine Sands (Pty) Ltd to Silverwave, as requested in the DMR acceptance letter. No response as yet.		
Exxon	X		Email correspondence from Marine Sands (Pty) Ltd to Exxon. No response as yet.		
<u>INTERESTED PARTIES</u>					
Jeremy Williams, Conservation Officer, SAUFF (South African Underwater Fishing Federation)		31 Jan 2019	Registered for the Public Participation Process, but no comment submitted as yet.		
Malcolm Keeping		5 Feb 2019	Registered for the Public Participation Process, but no comment submitted as yet.		

Copies of relevant emails are included in Appendix 4.4

iv) **The Environmental attributes associated with the alternatives. (The environmental attributed described must include socio-economic, social, heritage, cultural, geographical, physical and biological aspects)**

(1) Baseline Environment

(a) Type of environment affected by the proposed activity.

(its current geographical, physical, biological, socio- economic, and cultural character).

Sand is already dredged (removed) by Transnet from the offshore marine environment. The biophysical environment is thus what is contained within the dredger and sand hopper - *there will be no additional affect on the external environment*. Externally, the marine environment that is dredged from the area known as the “sand trap”, located east to south offshore of Durban harbour’s South Pier, is described below for context and to provide a description of the baseline environment from which the dredger operates.

GEOGRAPHICAL CONTEXT: The main reason for the existence of Durban is the Durban Harbour, reportedly Africa’s busiest port. The port is on the southern side of the City of Durban and to the south of this is an area known as The Bluff, characterised by ancient sand dunes (Berea Red Sands) rising to an elevation of 100 m. Between the immediate hinterland and the Bluff, lies an area termed the South Durban Basin, a flat area of low elevation, historically mostly swampland, which was infilled and where much of Durban’s industry is based. The Durban area has a climate classification of *Cfa*, according to the Köppen-Geiger Climate Classification (Conradie, 2012), meaning a warm temperate climate, fully humid with a hot summer. Rainfall is mostly in summer, averaging 1 006 mm per annum.

OCEANOGRAPHIC SETTING: The KZN coastline is bathed by the warm waters of the Indian Ocean, with the strong Agulhas Current flowing in a south-westward direction, transporting warm water polewards. Ocean temperatures off the KZN coast are warm (typically 20–26°C), which is a contributing factor to the warm climate and high humidity levels, particularly in summer. Durban is at the southern end of what is termed the KZN Bight, which refers to the concave curvature of the coastline between Cape St Lucia and Durban (Roberts, et al., 2016), where the coastline recedes from the shelf edge and the continental shelf widens to almost 50 km at its widest point off the Thukela River (Guastella & Roberts, 2016). The continental shelf narrows south of Durban (8 km wide with a gradient ranging from 2-8°) characterised by a wave- and current-dominated oceanographic regime (Cawthra et al., 2012). There is often the presence of a semi-permanent, mesoscale, cyclonic ocean circulation inshore of the main Agulhas Current between approximately Durban and Park Rynie, referred to as the Durban Eddy (Guastella & Roberts, 2016); this feature is responsible for frequent nearshore current reversals, i.e. north-eastward currents, opposite to the “expected” south-westward flowing Agulhas Current.

WAVE ENVIRONMENT, LONGSHORE DRIFT & MARINE SEDIMENTS: The KZN coastline is dynamic, and is subject to large swell events, associated with cut-off low (COL) pressure systems, cold fronts and dissipating tropical storms (Guastella & Smith, 2018). Based on a combined CSIR/Transnet waverider buoy dataset for Richards Bay and Durban for the 18-year period from 1992 to 2009, the average significant wave height (H_s) for Durban is 1.65 m, with an average swell direction of 130° (Corbella & Stretch, 2012). Swells from the south-south-east (SSE) dominate the spectrum (Appendix 5, Fig. 1), particularly in autumn, winter and spring, associated mainly with cold fronts. Longshore drift is predominantly from south to north, although reversals are possible during NE to E swells, which are more prevalent during summer. The nett south to north longshore drift, together with the blocking effect of the Durban Harbour south pier, which prevents the natural northward migration of marine sand, is responsible for the accumulation of sand in an area colloquially known as the “sand trap”. This is the subject of Area 1 (KZN 30/5/1/1/2/10780PPR) applied for. The sand from this

area is dredged by Transnet to replenish Durban's beaches northward of the harbour. The proposed sampling of marine sand containing heavy minerals is from existing sandwinning sites located within what Flemming (1981) has termed the "wave dominated nearshore sediment wedge". The sand wedge is dynamic and constantly redistributed by currents and bottom surge associated with high swells and marine storm events (Cawthra, et al., 2012). The shelf sands represent the transgressive Holocene- to modern sediment wedge forming a seaward thinning unit stacked against the Pleistocene aeolianite/beachrock substrate (Cawthra, et al., 2012).

MARINE FAUNA: The marine fauna consists of fauna typically found on the KZN coast. *Marine Mammals:* Cetaceans encountered include mainly the resident Humpback whale (June to November), and Bottlenose dolphins, however the following species may also be present: Minke whale, Southern Right whale, Sperm whale, Sei whale, Bryde's whale, Blue whale.

Turtle species likely to be encountered include Loggerhead, Leatherback, Green and to a lesser extent Hawksbill and Olive Ridley turtles.

Ichthyofauna: Fish species off the Durban coast are dominated by the Indo-Pacific ichthyofauna, with many endemic reef species, as well as migratory gamefish species. Whalesharks are possible during summer and a number of shark species are found offshore, including Zambezi, Great White, Tiger and Dusky sharks, as well as rays. Cuttlefish and squid are also known to occur. The area offshore of Durban is popular amongst ski-boat, kayak and paddleski fishermen, whilst the beaches are also popular amongst shore anglers. The annual sardine run occasionally brings a bounty of the small fish to the Durban area, coinciding with marine mammal and fish migrations.

Benthic fauna: Benthic invertebrate diversity is greatest along the east coast of South Africa, compared to the south or west coast (Sink et al., 2011). A total of 198 invertebrate macrofauna species have been recorded in the nearshore sandy substrate. Distinctive molluscs inhabit the sandy areas offshore of Durban that are dredged, amongst these various bivalves (e.g. mussels, scallops) and gastropods (e.g. frog shells). Various Meiofauna (organisms <1 mm in size) also inhabit the sandy substrates. Meiobenthos includes small species such as copepods, ostracods, gastrotriches, nematode worms and flat worms. Some of the meiofauna are adept at burrowing while others live in the interstitial spaces between the sand grains (Pilfrich, 2018).

AVIFAUNA: Durban Harbour is the subject of a consistent monitoring programme run by Dr David Allan, under the auspices of the Natural History Museum, where water birds within the harbour are monitored on a monthly basis. Species commonly sighted include various species of plover, terns, herons, egrets, cormorants, kingfishers, wagtails and ibis, as well as the occasional stork, flamingo, pelican, spoonbill (Allan, 2012). The offshore environment is relatively species poor, with mainly Grey Headed gulls, Kelp gulls and a variety of tern species and white-chin petrels. Gannets are occasional visitors along with the sardine run in winter. There is a resident pair of fish eagles in the vicinity of the Bluff Nature Reserve.

HERITAGE:

Previous studies (Maitland, 2016) have indicated a high number of shipwrecks in the area offshore of Durban. In a specialist study corresponding to Area 3, Maitland (2016) indicated a high number of Maritime Underwater Cultural Heritage (MUCH) sites from the shipwreck database, with the two most prominent wreck trap areas (due to topography, historical shipping limitations and prevailing weather conditions) being the Back Beach and the Bar – today these areas correspond to just offshore, north of the harbour; and the Harbour mouth. However, the nature of the environment, poor historical reporting and the length of time since the wrecks occurred means these MUCH sites are hard to locate with any accuracy (Maitland, 2016). According to the database there are at least 35 vessels that may be found in the area that corresponds to PR Site 3, most of these in the more southern section of this area, corresponding to Alternative 2 in the study.

As the prospecting environment will be on the dredger and/or at the sand hopper site from sand already dredged by Transnet, there will be no additional affect on the external environment. There is no waste or discard material involved in this process or necessary disturbance of the surface. The EMP for Transnet contains the correct protocol in dealing with any MUCH sites encountered during dredging operations and any sites uncovered during dredging work are dealt with on an ad hoc basis.

SOCIO-ECONOMIC ENVIRONMENT

Durban harbour is Africa's busiest port and the economic hub of the City of Durban. The dredger operates offshore and, when not in operation, moors alongside the Harbour "A" Berth near where the Sand Hopper is located on the quayside (refer map in Appendix 4.1). Owing to the project area being an offshore environment, there are no land occupants and no land-based communities are directly affected by any of the dredger operations. Surrounding communities to where the dredger operates include the Durban Point area (refer Appendices 2 and 4.1) and Bluff. The offshore area is utilised by ski-boat anglers, paddleskiers and kayak fishermen.

The project will not affect other person's socio-economic conditions. Prospecting is to occur from a dredger ship in the offshore sea zone or from the Sand Hopper in which the sand is deposited from the dredger, at "A" Berth, Port of Durban. The adjacent area to where the ship dredgers operate would be the eThekweni Municipality, but surrounding communities will be unaffected, as the activities take place offshore or at the sand hopper site within the Port of Durban.

(b) Description of the current land uses.

The offshore environment corresponding to the prospecting rights applications is utilised by shipping traffic in and out of Durban Harbour, ski-boat anglers, paddleskiers and kayak fishermen.

The "A" berth is used for mooring of ships, more specifically the three Transnet dredgers, these being the Ilembe, Isandlwana and Italen; the latter is used for maintenance dredging within the port of Durban and material dumped at an offshore dumpsite. The Ilembe and Isandlwana are used for dredging where sand is required to be moved off Durban, Richards Bay, East London, Ngqura and Port Elizabeth. The Sand Hopper, in which the marine sands are deposited from the dredgers for Durban's beach nourishment scheme, is located at "A" berth near where the dredgers are moored, with a pipe extending from the quayside to the hopper (refer **Appendix 3 and map in Appendix 4.1**) to facilitate the transfer of sand.

The prospecting environment will be inside the dredger and/or sand hopper; there will be no additional affect on the external environment.

(c) Description of specific environmental features and infrastructure on the site.

Sand samples would be collected offshore directly from on board the dredger at sea, as the sand is dredged or from within the sand hopper, once delivered from the dredger. The prospecting environment will be on the dredger and/or the sand hopper, thus the infrastructure will consist of the dredger itself and the sand hopper. There will be no further disturbance of the earth surface, sea or seafloor caused by the prospecting methods beyond that caused by existing dredging operations,

(d) Environmental and current land use map.

(Show all environmental, and current land use features).

A map showing the offshore areas applied for in relation to Durban is depicted in **Appendix 2, Figure 2.**

v) Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

The sampling will not involve any mechanical sampling equipment and will thus have no impact on mechanical operations or additional environmental impacts. The sampling would be done by hand and all sampling would be done without any noise pollution or disruption to third party activities. The sampling would be done at selected points within the sand collection and distribution system, at the sand hopper or alternatively on the dredger. Each prospecting phase is dependent on the results of the preceding phase.

Potential impacts of the prospecting application are minimal, as this is an application for a prospecting right where sand samples will be taken from an existing process; there will be no additional processes required to obtain samples for analysis.

The only risks envisaged would be injuries to staff if standard safety protocols are not adhered to on site, i.e. safety at sea (if sampling directly from the dredger) or safety at the hopper site. Standard safety could include the wearing of PPE and if operating from the dredger at sea, it may be a Transnet requirement that the sampling personnel have minimum safety at sea qualifications, e.g. STCW.

vi) Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process was determined in order to decide the extent to which the initial site layout needs revision).

Owing to the fact that sampling is being done on an existing dredging process, no additional environmental impacts are anticipated.

vii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected.

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties).

The prospecting activities are non-invasive and hence will have no physical environmental or social impact.

From a socio-economic perspective, a positive impact will be short-term, limited employment opportunities for prospecting in terms of sampling, analysis and reporting. This will be up to 36 months or the course of the prospecting programme, depending on its success,

viii) The possible mitigation measures that could be applied and the level of risk.

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

The only mitigation measures envisaged are the following of safety protocols for sampling, i.e. standard safety could include the wearing of PPE and if operating from the dredger at sea, it may be a Transnet requirement that the sampling personnel have minimum safety at sea qualifications, e.g. STCW. The risk of not complying with these conditions are that staff could potentially get injured. If operating from the dredger, motion sickness preventative action may need to be employed, i.e. ingestion of motion sickness tablets.

ix) Motivation where no alternative sites were considered.

The limitations of the area are determined by the sites Transnet dredge and any alternatives are limited to Areas 2 and 3 (refer Appendix 2, Figure 2), where prospecting rights have also

been applied for. No other alternative sites were considered, as the project is governed by the existing dredging programme.

x) Statement motivating the alternative development location within the overall site. (Provide a statement motivating the final site layout that is proposed)

Sampling is to be taken from two alternative locations, viz from the dredger or the sand hopper. There are no other suitable sampling sites. The advantage of sampling directly from the dredger is that you can know the exact location of the sand sampled at that time, whereas the sampling from the sand hopper would only be from the general area that the dredger was operating in during that dredge, as it would be the accumulated dredge sand that is deposited into the hopper.

i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity. (Including (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

There are only two sampling sites that could be considered, namely the dredger and the hopper sites. These are the only two sites where one can sample the dredged sands. The selection of the site that would be used for sampling will be determined in discussions with eThekweni Municipality and Transnet. Sampling at both of these sites would not involve any environmental disturbance, so there is no environmental impact at either site and therefore no opportunity to assess the process of selecting either site.

j) Assessment of each identified potentially significant impact and risk

(This section of the report must consider all the known typical impacts of each of the activities (including those that could or should have been identified by knowledgeable persons) and not only those that were raised by registered interested and affected parties).

NAME OF ACTIVITY	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE	MITIGATION TYPE	SIGNIFICANCE
<p>E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.</p> <p>E.g. For mining, - excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.)</p>	<p>Including the potential impacts for cumulative impacts</p> <p>(E.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)</p>		<p>In which impact is anticipated</p> <p>(E.g. Construction, commissioning, operational Decommissioning, closure, post-closure)</p>	If not mitigated	<p>Modify, remedy, control, or stop through e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.</p> <p>(E.g. modify through alternative method. Control through noise control. Control through management and monitoring through rehabilitation).</p>	If mitigated
Collection of sand samples from dredger or sand hopper	PHYSICAL ENVIRONMENT	No identified additional environmental impact to normal dredging operations	Prospecting	Insignificant	No mitigation required	Insignificant
	SOCIO-ECONOMIC	Limited job creation	Prospecting	Moderate	No mitigation required	Low
	PERSONAL SAFETY	Safety on site when extracting sand samples	Prospecting	Moderate	PPE to be worn and site-specific health & safety requirements to be adhered	Low

					to; STCW qualification required if prerequisite for work onboard Transnet dredger, compliance with instruction of Transnet dredger staff or Sand hopper staff (as required)	
Analysis of sand samples	SOCIO-ECONOMIC PERSONAL SAFETY	Limited job creation Safety in laboratory when analysing sand samples	Analysis	Moderate	No mitigation required PPE to be worn and laboratory health & safety requirements to be adhered to	Low

The supporting impact assessment conducted by the EAP must be attached as an appendix, marked **Appendix**

k) Summary of specialist reports.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form):

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
No specialist reports required or been undertaken at this stage	N/A	<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
		<input type="checkbox"/>	
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Attach copies of Specialist Reports as **Appendices**

l) Environmental impact statement

(i) Summary of the key findings of the environmental impact assessment;

The prospecting activities are non-invasive and involve extracting samples from sand that has already been removed from the sea floor by third parties, hence no additional environmental or social impacts have been determined.

(ii) Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. Attach as **Appendix**

Refer Appendix 2, Figures 1 & 2.

(iii) Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

Positive impact with respect to limited job creation associated with sampling and analysis of samples.

Possible negative impact with respect to adherence of sampling personnel to health & safety requirements, mitigated fully by conforming to requirements.

Risk of sampling staff injury on site; mitigated fully by staff conforming to health & safety requirements and adhering to instruction by dredger and/or hopper relevant personnel.

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMP; Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMP as well as for inclusion as conditions of authorisation.

Nil

n) Aspects for inclusion as conditions of Authorisation.

(Any aspects which must be made conditions of the Environmental Authorisation)

Adherence by sampling staff on board the dredger or at the hopper to standard safety protocols.

o) Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

Nil

p) Reasoned opinion as to whether the proposed activity should or should not be authorised

i) Reasons why the activity should be authorized or not.

The activity should be authorised as there are no anticipated environmental impacts of the proposed activity. There are limited safety issues that can be fully mitigated against. If the project is successful, there could be significant economic benefit.

ii) Conditions that must be included in the authorisation

Suggestion: Adherence by sampling staff on board the dredger or at the hopper to standard safety protocols

q) Period for which the Environmental Authorisation is required.

Three years

r) Undertaking:

Confirm that the undertaking required to meet the requirements of this section is provided at the end of the EMPr and is applicable to both the Basic Assessment Report and the Environmental Management Programme Report.

Confirmed

s) Financial Provision:

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

No rehabilitation is required, as there is no negative impact on the environment during the prospecting stage, therefore no provision needs to be made for funding any rehabilitation for the prospecting stage.

i) Explain how the aforesaid amount was derived.

See above

ii) Confirm that this amount can be provided for from operating expenditure. (Confirm that the amount, is anticipated to be an operating cost and is provided for as such in the Mining work programme, Financial and Technical Competence Report or Prospecting Work Programme as the case may be).

See above.

t) Specific Information required by the competent Authority

i) Compliance with the provisions of sections 24(4) (a) and (b) read with section 24 (3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998). the EIA report must include the:-

(1) Impact on the socio-economic conditions of any directly affected person. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix**.)

As this prospecting right application is based on sampling sand that already has been removed legitimately by dredging by third parties, this does not apply at this stage

(2) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act. (Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as **Appendix 2.19.2** and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12.herein).

As this prospecting right application is based on sampling sand that already has been removed legitimately by dredging by third parties, this does not apply at this stage

u) Other matters required in terms of sections 24(4) (a) and (b) of the Act.

(the EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as an **Appendix**).

As this prospecting right application is based on sampling sand that already has been removed legitimately by dredging by third parties, this does not apply at this stage

PART B
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1) Draft environmental management programme.

- a) Details of the EAP,** (Confirm that the requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required).

The EAP is Alan Smith Consulting; information is already provided in Part A and Appendix 1.

- b) Description of the Aspects of the Activity** (Confirm that the requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required).

This has been addressed in Part A

c) Composite Map

Provide a map (**Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers.

Attached as **Appendix 2.**

d) Description of Impact management objectives including management statements

- i) **Determination of closure objectives.** (ensure that the closure objectives are informed by the type of environment described)
No environmental damage is anticipated and therefore no closure plan is required
- ii) **Volumes and rate of water use required for the operation.**
There will be no water consumption beyond that of human consumption of a small prospect sampling team (3 people)
- iii) **Has a water use licence has been applied for?**
Not required or requested

iv) Impacts to be mitigated in their respective phases

Measures to rehabilitate the environment affected by the undertaking of any listed activity

ACTIVITIES	PHASE	SIZE AND SCALE (of disturbance)	MITIGATION MEASURES	COMPLIANCE WITH STANDARDS	TIME PERIOD FOR IMPLEMENTATION
<p>E.g. For prospecting, - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc.</p> <p>E.g. For mining,- excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.</p>	<p>(Of operation in which activity will take place.</p> <p>State; Planning and design, Pre-Construction' Construction, Operational, Rehabilitation, Closure, Post closure).</p>	<p>(volumes, tonnages and hectares or m²)</p>	<p>Describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)</p>	<p>A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities</p>	<p>Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.</p> <p>With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either:</p> <p>Upon cessation of the individual activity or</p> <p>Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.</p>
<p>Sampling of sand already dredged by Transnet</p>	<p>Phase 1, 2 and 3</p>	<p>Nil, on ship or at hopper</p>	<p>Not required</p>	<p>No damage so compliant</p>	<p>N/A</p>

e) Impact Management Outcomes

(A description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph):

ACTIVITY (whether listed or not listed)	POTENTIAL IMPACT	ASPECTS AFFECTED	PHASE In which impact is anticipated	MITIGATION TYPE	STANDARD TO BE ACHIEVED
E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc.	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)		(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	(modify, remedy, control, or stop) through (e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.) E.g. <ul style="list-style-type: none"> • Modify through alternative method. • Control through noise control • Control through management and monitoring • Remedy through rehabilitation. 	(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc.)
Sampling already dredged sand material	Nil	Nil	Nil	N/A	N/A

f) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

ACTIVITY Whether listed or not listed.	POTENTIAL IMPACT	MITIGATION TYPE	TIME PERIOD FOR IMPLEMENTATION	COMPLIANCE WITH STANDARDS
(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors etc.)	(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc.)	(modify, remedy, control, or stop through e.g. noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc.) E.g. <ul style="list-style-type: none"> • Modify through alternative method, • Control through noise control, • Control through management and monitoring, • Remedy through rehabilitation. 	Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required. With regard to Rehabilitation specifically this must take place at the earliest opportunity. .With regard to Rehabilitation, therefore state either: Upon cessation of the individual activity or Upon the cessation of mining, bulk sampling or alluvial diamond prospecting as the case may be.	(A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Sampling dredged sand on dredge ship or at hopper	No impact	No impact, thus no mitigation required	No impact, thus no mitigation required	No impact, thus no mitigation required

g) Financial Provision

(1) Determination of the amount of Financial Provision.

- (a) Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.**

No environmental impact of sampling the already dredged material, so no closure possible or required

- (b) Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.**

No environmental impact of sampling the already dredged material, so no closure possible or required

- (c) Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure.**

No environmental impact of sampling the already dredged material, so no closure plan possible or required. No mining anticipated under prospecting rights.

- (d) Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.**

No rehabilitation possible, thus no plan required.

- (e) Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.**

No environmental impact, so no rehabilitation or financial provision required.

- (f) Confirm that the financial provision will be provided as determined.**

No environmental impact, so no rehabilitation or financial provision required.

m) Indicate the frequency of the submission of the performance assessment/ environmental audit report.

As no environmental damage will be caused in the course of sampling the already dredged sand, we would be guided by the requirements of the department as to how frequently they will require a submission of performance assessment/ audit report.

n) Environmental Awareness Plan

(1) Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.

Employees would be informed in their letters of appointment, and in a code of standard basic operating conditions, which would address possible risk areas, and in addition at regular meetings and on company billboards or social media communication, as would be applicable

(2) Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.

Employees and contractors would be informed of all requirements to ensure no degradation of the environment or pollution, although there is limited probability as there is limited opportunity for these occurrences in the sampling of the already dredged sand.

o) Specific information required by the Competent Authority (Among others, confirm that the financial provision will be reviewed annually).

Should a financial provision be required this will be reviewed regularly, but there is no foreseeable requirement at present, as there is no environmental damage possible in extracting samples of sand already dredged on a dredger or at the hopper.

2) UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports; **X**
- b) the inclusion of comments and inputs from stakeholders and I&As; **X**
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; **X** and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein **X**.

L Guastella

Signature of the environmental assessment practitioner:

Alan Smith Consulting

Name of company:

07 March 2019

Date:

APPENDIX 1: DETAILS OF THE CONSULTANTS & PROOF OF QUALIFICATIONS

ALAN SMITH CONSULTING, 29 Browns Grove, Sherwood, Durban, 4091.

Consultant name: Dr Alan Smith (Pr.Sci. Nat.)

Qualifications: BSc Geology, BSc (Hons) Geology, MSc Geology, PhD Geology (all University of Natal Durban, now University of KwaZulu-Natal)

Contact details: *Landline:* 0312086896

Mobile: 0824336697

Email: asconsulting@telkomsa.net

Dr Alan Smith is an independent environmental consultant, with specialist skills including fluvial floodplain analysis, palaeoflood hydrology, palaeontology, coastal morphodynamics, estuarine morphodynamics and marine processes. Alan attained a PhD in Earth Science from the University of KwaZulu-Natal (1989) and has practised as an environmental consultant since he left the Council for Geosciences in 1993. He has provided Specialist Reports for both marine- and land- based projects. Alan's offshore work has included seabed mapping, heavy mineral prospecting and seabed ground truthing.

Alan has been researching fluvial systems since 1988. He has also conducted various river flood and coastal erosion investigations for various municipalities, organizations and individuals, both in KZN, Mozambique and Kenya. More recently Alan has compiled Palaeontological reports for renewable energy solar photo-voltaic parks in the Free State and N Cape. Examples of major projects which he has been involved with include the assessment of coastal erosion along the Dolphin, Umdoni and Ugu Coasts following the catastrophic storm surf erosion of March 2007. Alan was also involved in the offshore survey for sighting of the marine telecom fibre optic cable which landed at Mtunzini, the offshore component of the Richards Bay coal wharf development and Richards Bay Minerals offshore prospecting.

Alan is a Research Associate of the University of KwaZulu-Natal and is actively involved in scientific research on the topics on which he consults. This allows him to understand these processes better, keep scientifically current and be able to supply a contemporary science service. Alan has authored or co-authored 45 refereed papers (published both nationally and internationally) and regularly attended international conferences as a speaker delegate. Alan has lectured part-time in the School of Agriculture, Earth & Environmental Sciences (SAEES) at UKZN and was a co-supervisor on a PhD (2010-15) concerning river floods and Climatic Change.

Consultant name: Lisa Guastella (Pr.Sci. Nat.)

Qualifications: BSc Geography, BSc (Hons) Atmospheric Science, MSc Oceanography (all University of Cape Town)

Contact details: *Landline:* 0312086896

Mobile: 0828604043

Email: lisagus@telkomsa.net; lisa.guastella@alumni.uct.ac.za

Lisa is an environmental consultant and meteorologist/air quality specialist and oceanographer, qualified with a BSc (Geography), BSc (Hons) Atmospheric Science (1985) and MSc Oceanography (1988). Lisa has practised as an environmental consultant and specialist meteorologist and air quality consultant for approximately 20 years, during which time she has maintained air quality and meteorological instrumentation, performed data quality control and reported on meteorological conditions and air quality for South Durban, Richards Bay and Coega. She has been involved in the siting and installation of meteorological and air monitoring equipment and has a good understanding of local weather and climate conditions.

Lisa has been studying part-time towards a PhD in Physical Oceanography on oceanography of the KZN Bight and is a Research Associate of the Bayworld Centre for Research and Education (BCRE) and is actively involved in scientific research on oceanography, coastal processes and meteorology, subject matter in which she consults. Lisa has authored or co-authored 14 peer-reviewed scientific papers (published both nationally and internationally) and has regularly attended national and international conferences as a speaker delegate; she has presented 36 conference papers on subjects including air quality, meteorology, oceanography, coastal erosion, fisheries and climate change. She has co-authored a small-craft launch site policy for KZN and book chapters on coastal erosion and oceanography.

Univerſitas Natalienſis



hoc ſcripto nos, Univerſitatis Natalienſis
Vice-Cancellarius, Registrarius, teſtamur

ALAN MITCHELL SMITH

Gradum Philoſophiae Doctoris in Facultate Scientiae

attigisse

P. van Booyen

Vice-Cancellarius

[Signature]
Registrarius

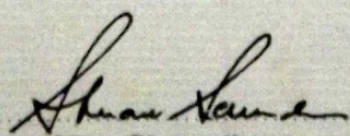
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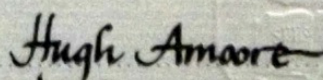


UNIVERSITY OF CAPE TOWN
with which is incorporated the South African College

Degree of Master of Science

We hereby certify that LISA ANNE-MARIE GUASTELLA
was admitted to the Degree of Master of Science in
PHYSICAL OCEANOGRAPHY ON 24 JUNE 1988


Vice-Chancellor


Registrar

APPENDIX 2: LOCALITY MAPS

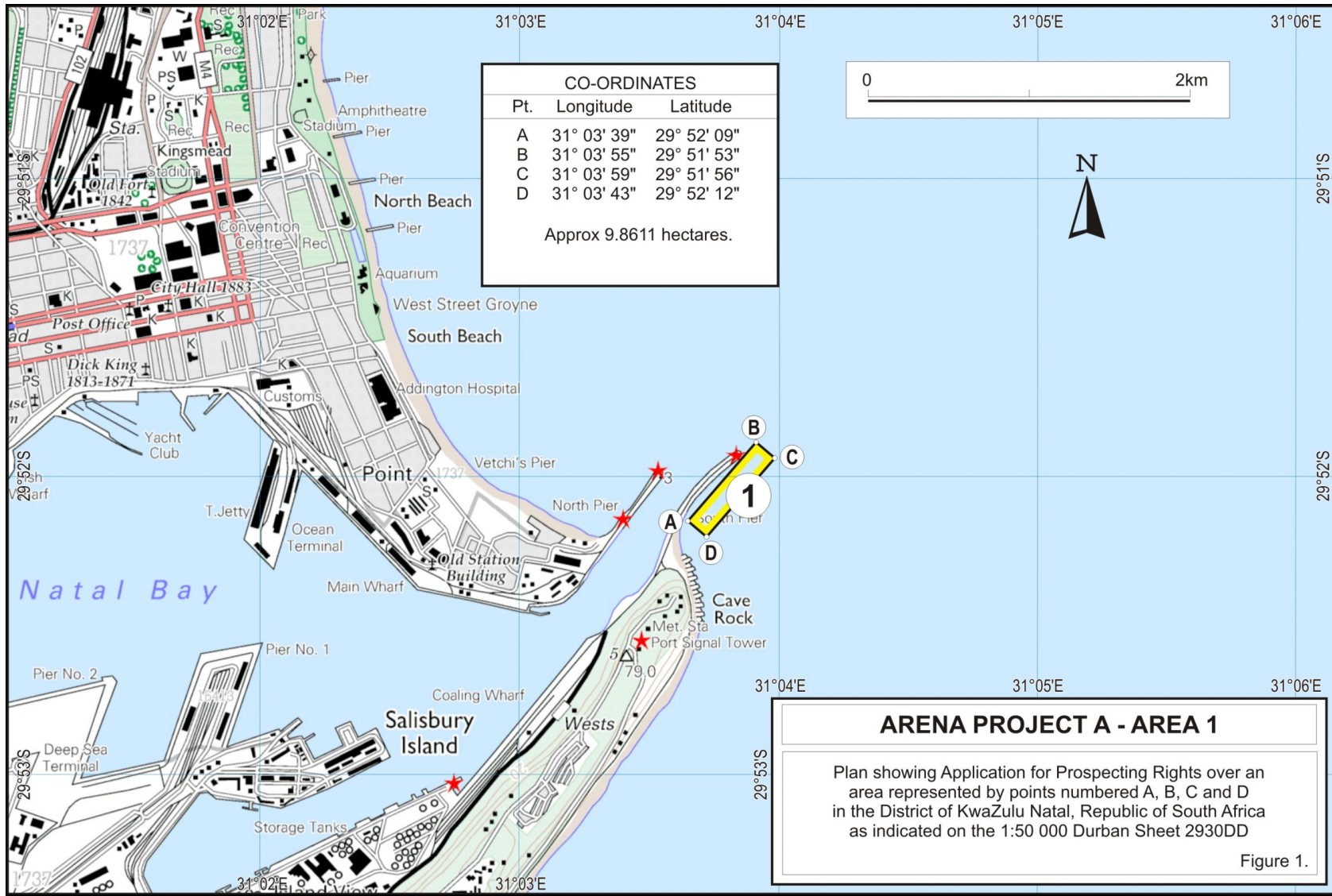


Figure 1: Prospecting area applied for

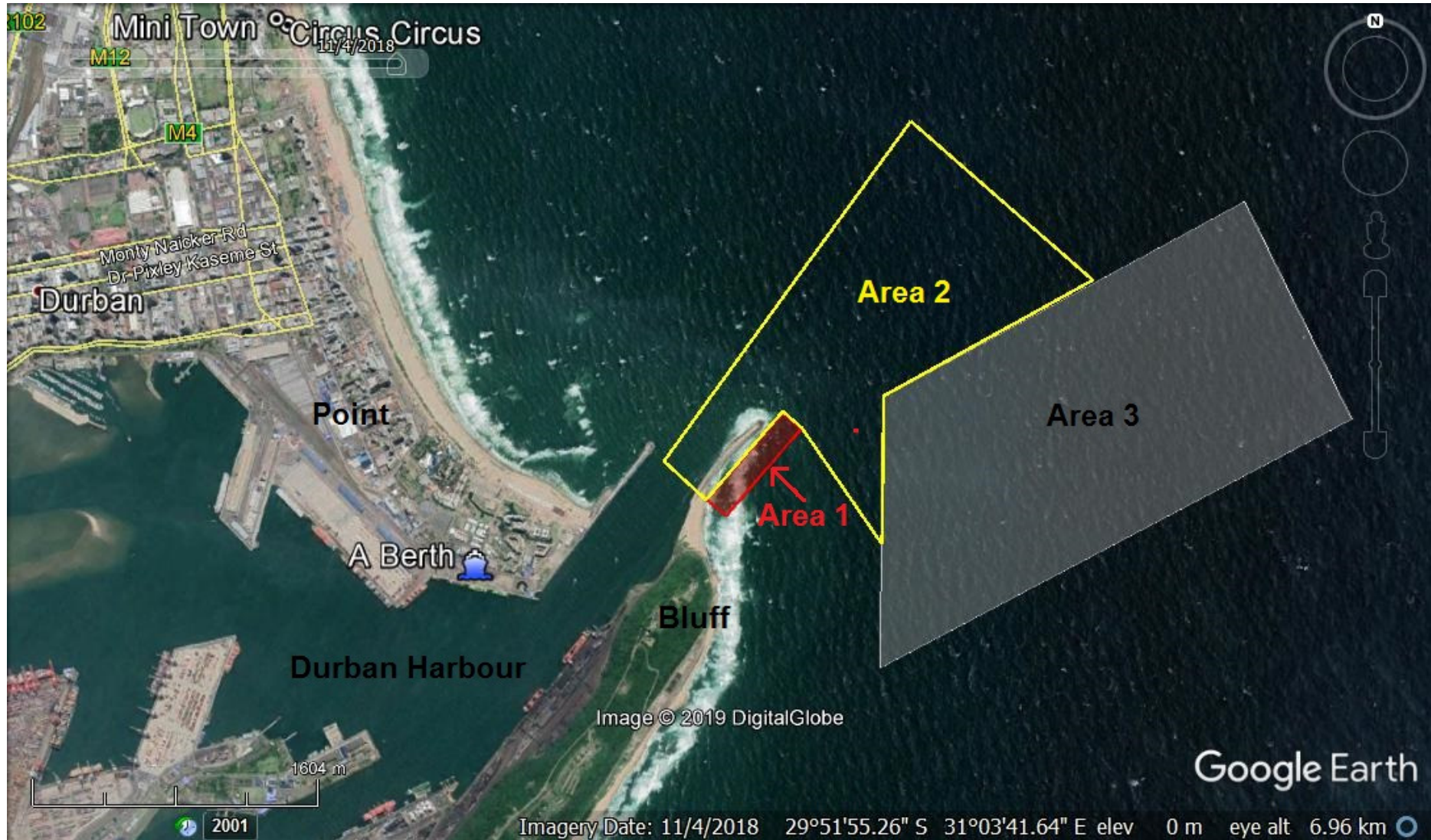


Figure 2: Aerial image indicating prospecting areas applied for (this application is for Area 1) in relation to Durban. Areas 2 and 3 have followed a similar, but separate, application process to Area 1. Surrounding land use at the Point and Durban CBD is residential and commercial; the Durban harbour perimeter quaysides serve port operations, whilst the northern end of the Bluff is a South African naval base.

APPENDIX 3: SITE PHOTOGRAPHS

Figure 1: Sand hopper located at Durban Harbour "A" berth



Figure 2: Transnet dredgers (pics: MarineTraffic.com)
(a) Isandlwana



(b) Ilembe



APPENDIX 4: PUBLIC PARTICIPATION

4.1 SITE NOTICES

The map below indicates the location of site notices, which were placed at:

- (i) Entrance gate to the National Sea Rescue Institute, sand hopper and Berth "A" at Durban Harbour,
- (ii) The landward end of uShaka Pier, (b)
- (iii) Notice board at the Point Watersports Club, Point, Durban

For reference, the location of the Sand hopper and Vetch's Beach is also indicated.




Photographs of site notices, 25 January 2019

(i) entrance gate to NSRI and Berth A	(ii) landward end of uShaka Pier	(iii) Notice board at the Point Watersports Club

Legals & Tenders

715 Tenders 715 Tenders 715 Tenders



UMzimkhulu Municipality
PROVINCE OF KWAZULU-NATAL
KZN435/18/19/021/PNLG

**RE-ADVERTISEMENT
INVITATION TO TENDER**

UMzimkhulu Municipality hereby invites reputable and experienced service providers to respond on the projects below:

SUPPLY AND DELIVERY OF BAKING CONTAINER FOR WARD 13
PROPOSAL NO. ULM-PNLG 001/19

SUPPLY AND DELIVERY OF BAKING CONTAINER FOR WARD 17
PROPOSAL NO. ULM-PNLG 007/19

Tender documents will be available from the cashier at 169 Main Street, UMzimkhulu, 3297 upon the non-refundable payment of R100.00 per document or a bank guaranteed cheque made out to UMzimkhulu Municipality during working hours between 09h30 and 16h00 from 30 January 2019. **Cut-off time for buying documents is 05 February 2019, 15 minutes before the briefing time.**

Compulsory briefing meeting is scheduled to take place at 169 Main Street, UMzimkhulu, 3297, Municipal Boardroom on 05 February 2019 at 11h00.

Invalid or non-submission of the following documents will render the tenderer disqualified. BBBEE points will not be allocated if the Certificate is not submitted: • Registered on Central Suppliers Database (CSD) attach proof of Registration • Valid BBBEE Certificate/certified or original • MBD 4, 8 & 9 • Municipal rates Certificate/statement for the Directors and the company • Confirm that Municipal rates are not in arrears for more than 90 days • Attach valid lease agreement if the company is leasing the office space • Attach a valid lease agreement if the director is leasing accommodation • Attach affidavit if the account is under your parents, siblings, grandparents and you are not paying any Municipal rates • Copy of a marriage certificate if Municipal account is under your spouse • Certificate of Authority to sign all documents in connection with this Tender and any contract or agreement which may arise therefrom, duly signed and dated, shall be provided by the Board of Directors of the firm and shall be attached and must be on a Company letter head.

80/20 Preference Point System will be used on the following project, functionality will be considered and UMzimkhulu Local Municipal SCM policy.

Service providers must meet the minimum threshold percentage for local production and content for the Steel products and content for Steel production

711 Public Notices 711 Public Notices

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORIZATION IN TERMS OF GOVERNMENT NOTICE REGULATION 983 (LISTING NOTICE 1) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT NO. 107 OF 1998)

DMR REF NO. KZN 30/5/11/2/10780PR

PROSPECTING ACTIVITIES FOR HEAVY MINERALS FROM DREDGED SAND OFFSHORE OF DURBAN, ETHEKWINI MUNICIPALITY, KWAZULU-NATAL



Notice is hereby given in terms of Regulations published in Government Notice R. 982 of 04 December 2014, under sections 24(5) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, that Marine Sands (Pty) Ltd has applied for a Prospecting Right to conduct prospecting activities to determine if viable deposits of heavy minerals occur within the sand currently being dredged by Transnet offshore of Durban, which is then utilized, inter alia, by the eThekweni Municipality for beach nourishment purposes. The sampling will occur within or about the sand hopper situated at the A berth of the Durban harbour and / or on the dredging ships.

In order to obtain Environmental Authorisation from the Department of Mineral Resources (DMR), a Basic Assessment (BA) process needs to be followed. Alan Smith Consulting has been appointed as independent environmental practitioners to carry out the BA process.

The proposed activities will take place offshore of Durban and are relevant to one site, viz.: KZN 30/5/11/2/10780PR - Area 1: 9,861.1 ha, corresponding to an area known as the "sand trap" immediately south to east of the Durban harbour South Pier.

NOTICE OF PUBLIC PARTICIPATION PROCESS
As part of the BA process, the Applicant is required to notify stakeholders of the application and make draft reports available in the public domain. Interested / affected parties who wish to participate by providing comments, or who would like to obtain more information should please contact Ms Lisa Gustollie or Dr Alan Smith at Tel: 031 208 6896, E-mail: lisa.gustollie@alumniuct.ac.za / asconsulting@ethiokmsa.net. Address: 29 Browns Grove, Sherwood, 4091.

For all your Legal Advertisements
Contact us on
Tel: 031 3082004

TENDER AWARD NOTICE

Ezemvelo KZN Wildlife hereby advises the intention to award the following bids:

BID NO.	BID DESCRIPTION	SERVICE PROVIDER	TENDER AMOUNT	B-BBEE LEVEL
EKZNW 08/2018	Construction Of New 4 Bed Staff Accommodation Unit At Kamberg Nature Reserve	Hygiene Lab	R2 573 280.71	1
EKZNW 11/2018	Construction Of New 4 Bed Staff Accommodation Unit At Vergelegen Nature Reserve	Ndalokuhle Construction and Security	R2 291 588.90	1

NB: Objections to this award must be made within five (5) working days to the office of Ezemvelo Chief Executive at e-mail: Cecilia.Sampson@kznwildlife.com from the 25 to 31 January 2019.

DEPARTMENT OF PUBLIC WORKS - ETHEKWINI REGIONAL AND DISTRICT OFFICE

4.3 I&AP LIST

(a) The following is a list of interested & affected parties notified from the EAP's database

1.2 I&APs to whom notification sent to date		
Name	Affiliation	email
Fiona MacKay	ORI	fmackay@ori.org.za
Shanice	SDCEA	shanice@sdceango.co.za
Des D'Sa	SDCEA	desmond@sdceango.co.za
Bobby Peek	Groundwork	bobby@groundwork.org.za
Di Jones	Coastwatch	Coastwatch@telkomsa.net
Andre Fletcher	NSRI	station5@searescue.org.za
Paul Smit	General Manager: Point Water sports Club	gm@pwsc.co.za
	Durban Ski-boat club	accounts@durbanskiboatclub.co.za
Paddy Norman	WESSA	paddyn@telkomsa.net
Richard Holmes	Durban Boatowners Association	dboa@sphere.co.za
Graham Rose	RNYC	commodore@myc.org.za
Malcolm Keeping	SA Sugar Association, DUC	malcolm.keeping@sugar.org.za
Johnny Vassilaros	Durban Paddleski Club	atlantistrade@telkomsa.net
Donavan Henning	Nemai consulting	donavanh@nemai.co.za
Jeremy Williams	SAUFF	jeremy@divefactory.co.za
Rory O'Connor	Concerned citizen	roc@tiscali.co.za
Eddie Litchfield	Paddleski Club	jayed@mweb.co.za
Jeremy Saville	Concerned citizen (swell.co.za website)	jemsav@swell.co.za
Riaz Khan	KZN Subsistence Fishermen Forum	lamatikzn@gmail.com

(b) The following is a list of authorities notified

Name	Affiliation	email
Conrad Dlamini Bongimusa	Ward councillor (ward 26 Point)	Conrad.dlamini@durban.gov.za
JP Prinsloo	Ward councillor (ward 66 Bluff)	ward66@ethekwini.org
Dianne van Rensburg	Development Planning: Land Use Management	diane.vanrensburg@durban.gov.za
Siraj Paruk	Transnet	Siraj.Paruk@transnet.net
Nelson Mbatha	Transnet	Nelson.Mbatha@transnet.net
Clive Greyling	Transnet	Clive.Greyling@transnet.net
Dorian Bilse	Transnet	Dorian.Bilse@transnet.net
Shamina Krishnaswamy	Transnet	Shamina.Krishnaswamy@transnet.net
Dineo Mazibuko	Transnet	Dineo.Mazibuko@transnet.net
Makhosazane Zondi	Transnet pipelines	khosi.zondi@transnet.net
Thami Khubisa	Transnet new business development	thami.khubisa@transnet.net
Norman Ward	DWS	WardN@dws.gov.za
Jennifer Olbers	EKZMW	Jennifer.Olbers@kznwildlife.com
Santosh Bachoo	EKZMW	Santosh.Bachoo@kznwildlife.com
Dominic Wieners	EKZMW	Dominic.Wieners@kznwildlife.com
Irene Hatton	EKZMW	irene.hatton@kznwildlife.com
J Zikhali	DAFF KZN	jeffreyzikhali@hotmail.com
Dennis Fredericks	DAFF Marine Resource management	DennisF@daff.gov.za
Desmond Stevens	DAFF Acting DDG Fisheries	DDGFisheries@daff.gov.za
Omar Parak	DEDTEA	omar.parak@kznedtea.gov.za
Bonisiwe Sithole	DEDTEA	bonisiwe.sithole@kznedtea.gov.za
Madibe Ntombi	DWS	mngoma-madibej@dws.gov.za
Neo Leburun	DWS	leburun@dws.gov.za
Lesa la Grange	SAHRA	llagrange@sahra.org.za
Feroza Albertus	DEA Oceans & Coasts	falbertus@environment.gov.za
Nontsasa Tonjeni	DEA Oceans & Coasts	ntonjeni@environment.gov.za
Jo McMahan	Transnet: Environment & Sustainability	Joseph.mcmahan@transnet.net
Sifiso Ndlovu	Land Claims Commission	Sifiso.ndlovu@drdlr.gov.za
Sithembile Nxumalo	Dept. of Land Affairs	Sithembile.nxumalo@drdlr.gov.za
Thandeka Mbambo	DEA Oceans & Coasts	TMbambo@environment.gov.za
Funanani Ditinti	DEA Oceans & Coasts	fditinti@environment.gov.za

4.4 RELEVANT COMMUNICATIONS

The below communications are generic to Areas 1, 2 and 3, which all fall under the same process and involve the same discussion with relevant stakeholders, save that the prospecting areas applied for are different.

4.4.1: Transnet

Subject: Transnet Meeting Summary - 27 Sep 2018

Summary of meeting minutes with Transnet:

Date: 27 September 2018

Present:

Keith Comline (Marine Sands) - KC

Nelson Mbatha (Transnet)

Siraj Paruk (Transnet)

Vishern Beakam (Transnet)

- * Introductions were made and KC briefly introduced the Marine Sands project – Project Arena
- * Vishern explained the current dredging operations as follows:
 - They conduct 2 types of dredging:
 - Maintenance dredging within the harbour for shipping lines
 - o Circa 150,000 cubic m per year using grab and suction dredgers
 - Sand trap / beach augmentation dredging

Beach Augmentation Dredging

- * This dredging is done as they are bound by an agreement with the municipality and because the harbour impedes the natural flow of sand
- * They generally dredge between 250,000 and 500,000 cubic m of sand a year but 500,000 would be the maximum
- * Dredging is conducted through 3 procedures:
- * Dredging and dumping onto the mound (out at sea)
- * Discharging into direct floating line
- * A berth to south of Addington
 - Struggle to get sand to Addington
- * Hopper (A Berth)

Dredging is temperamental due to:

- * Currents
- * Demand from the municipality (how much sand is on the beach)
- * Storms
- * Rip tides, weather, seasonal currents
- * The municipality determines the quantum of sand required for the beach augmentation. Can cause dredging schedule to be changed/ceased

Further Discussions:

The Dredger is currently deployed domestically (only in Durban beach augmentation for 3 months annually). Will soon be deployed internationally.

Marine Sands will need a Transnet licence to operate commercially within the Durban Harbour area

Transnet covers the costs of dredging whilst the municipality covers over costs (floating lines etc.)

There may be space constraints for our operation by the hopper, however KC explained that it would require the size of approximately 2 shipping containers (during mining operations) which seemed to appease their concern.

The Transnet mining right for sand winning was approved within the last 2/3 weeks

Operationally, there was concern that our operations would impede their operations and future growth plans - KC explained that we would fit into their plans as much as possible

They expressed concern of the PPP we would have to undertake and potential environmental impact. KC explained that there would be little to no environmental impact.

They are looking for a solution for the dredged sand from within the harbour, as opposed to dumping it into the ocean.

They enquired as to our intention to operate outside of Transnet with our own dredging - it was explained that we are compiling 2 business cases, one with collaboration with Transnet and one without. This is dependent on further discussions and the grade of resource available.

Nelson Mbatha advised that the commercial engagements be discussed with the Transnet business development department.

Nelson Mbatha will provide names of persons in the business development department (Shamina??) to arrange a time to present our project to them (more formal presentation) and the commercials to be discussed further. We must keep Dorian included on our emails.

4.4.2 eThekweni Municipality

Summary of Meeting Minutes with eThekweni Municipality: Coastal Engineering

Present:

Keith Comline (Marine Sands) - KC

Godfrey Vella (Senior Manager: Coastal Engineering) - GV

Date: 11 October 2018

Time: 10h00 - 11h00

Introduction:

- * KC introduced the sand processing/cleansing project, where it is focused and the current prospecting rights applications.
- * Proposed Benefits of the project: Sand cleansing, Project Phakisa, Economic harbour development
- * Only 5% of sand volumes lost due to extraction of heavy minerals

Richard Bay investigations:

- * GV confirmed that Richard Bay Minerals had conducted previous investigations on the extraction of heavy minerals from the beach sand which proved to be unviable

CURRENT OPERATING PROCESSES:

- * GV confirmed that they currently use different systems to augment the beaches:

Receiving sand from the Transnet Hopper (Bx) and (should be) pumping up the beaches through the booster plants (B0 - B4)

- * 400 diameter HDP pipe
- * Pumps circa 1,800 cubic metres of slurry per hour
- * Slurry consists of between 15 - 20% sand
- * Currently can pump to first booster station (B0)
- * This system is still in testing and proving up - fixing pumps, valves and actuators.
- * This is highly technical (compared to previous hopper - 2 pumps) as this has 28 pumps and is automated process which have to be correct for it to operate

Bypass pipeline:

- * Sand slurry received straight from Dredger at the same berth as the Hopper
- * This line provides 2 - 3 km pumping up the beaches (North)
- * 900 diameter HDP Pipe and can pump 1200 per hour (this number subject to confirmation as it was indicate that the amount was more than the Hopper pipe - see diameter)
- * Generally can pump about 40% slurry

Floating pipeline system

- * This is a temporary system
- * Used for northern beaches (about 6km) (North End, Sub Coast, Denning (sp))
- * Requires quite a bit of manpower when operating (front-end loaders on beach, divers, etc.)

Dredging and Hopper information:

- * There are 2 dredgers, one can pump 2 km and the other 3 km.
- * Current dredgers can operate at +/- 26m depth
- * The Isandlwana dredger has been in for repairs/maintenance since November 2017
- * Dredging schedule is not fixed and the dredger moves between ports as an when required by the relevant port masters
- * Ability to go out to sea also dependent on a SAMSA licence
- * The new hopper has 28 pumps operated under the SCADA (?) system
- * There is a draft MoA for the council to operate the hopper on behalf of Transnet
- * Transnet will be liable for maintenance and defaults

Time delays of dredger:

- * The Dredge can dump into the Hopper on its first trip (which has to receive the full load before it can discharge)
- * Thereafter the Dredger can go out again on its 2nd trip and will return before the hopper has finished discharging. The second load will fill the hopper (+/- 300,000 cubic metres) and then any additional loads will be pumped through the by-pass line up the beaches.
- * Often the dredgers have to wait for other boats and tankers to enter and exit the harbour
- * The by-pass line is a permanent feature within the municipalities pumping plans
- * The old hopper pumping system could pump up to Snake Park Beach
- * The current system runs up to about 4km but needs to work correctly

Transnet operations:

- * The dredging services is an in-house service operated by Transnet, which invoices the port (another division of Transnet) for its dredging services
- * Often the dredger goes to the port with the budget available for its services

Ownership/Management of infrastructure:

- * Transnet owns and manages the:
 - * Dredging services
 - * The hopper (Bx) (owned by the port department)

- * The pipe from the hopper to the first booster pump station (B0)
- * Municipality owns and manages the:
 - * Pump stations B0 to B4 (about 4 km piping north of harbour)
 - * By-Pass line
 - * Floating pipelines

Needs of municipality:

- * Require reliable dredging services
- * Municipality is looking at 3 offshore borrow traps to take sand for sand augmentation - Amanzimtoti Area / Durban / mHlanga and mShloti area
- * Have conducted sand samples and confirmed there are no reefs. Currently in the environmental application stages
- * Depths for these areas are +/- 18 - 24m
- * mHlanga area is an important need of the municipality and could commit to at least 500,000 cubic metre per year
- * Currently being engaged with by Jan De Nul dredging services

Public Participation Process:

- * Should put up notice at the Dredging services, Point Watersport Club
- * Should notify ORI/SAAMBR, Transnet and the Municipal Environmental department (who will consolidate all municipal responses)

Other information:

- * Clive Greyling (Transnet) manages the Hopper (Bx) and could give a tour
- * Hopper is operated by Grant de Klerk
- * Hopper could be included as a tourist place of public interest
- * Godfrey conducts tours of the sand pumping and goes through the tunnel under the harbour
- * Tunnel is due to be taking sewerage from the pump stations at NSRI to the Central Works sewage plant (Bluff), which pumps treated sewerage out into offshore sewerage dumps (+/- 3km out)
- * There is also a temporary desalination plant being developed/commissioned

4.4.3 Further Discussions with Transnet

The applicant has held further collective meetings with the following departments of Transnet on 15 November 2019:

- New Business Development;
- Transnet Group Capital
- Transnet Dredging

The project was again introduced to the members who had not yet been introduced to it previously and the outcomes of these meetings was, in principle, favourable in Transnet's support of the project, pending the further approvals from the Transnet port authorities and the approval of the relevant prospecting rights applications.

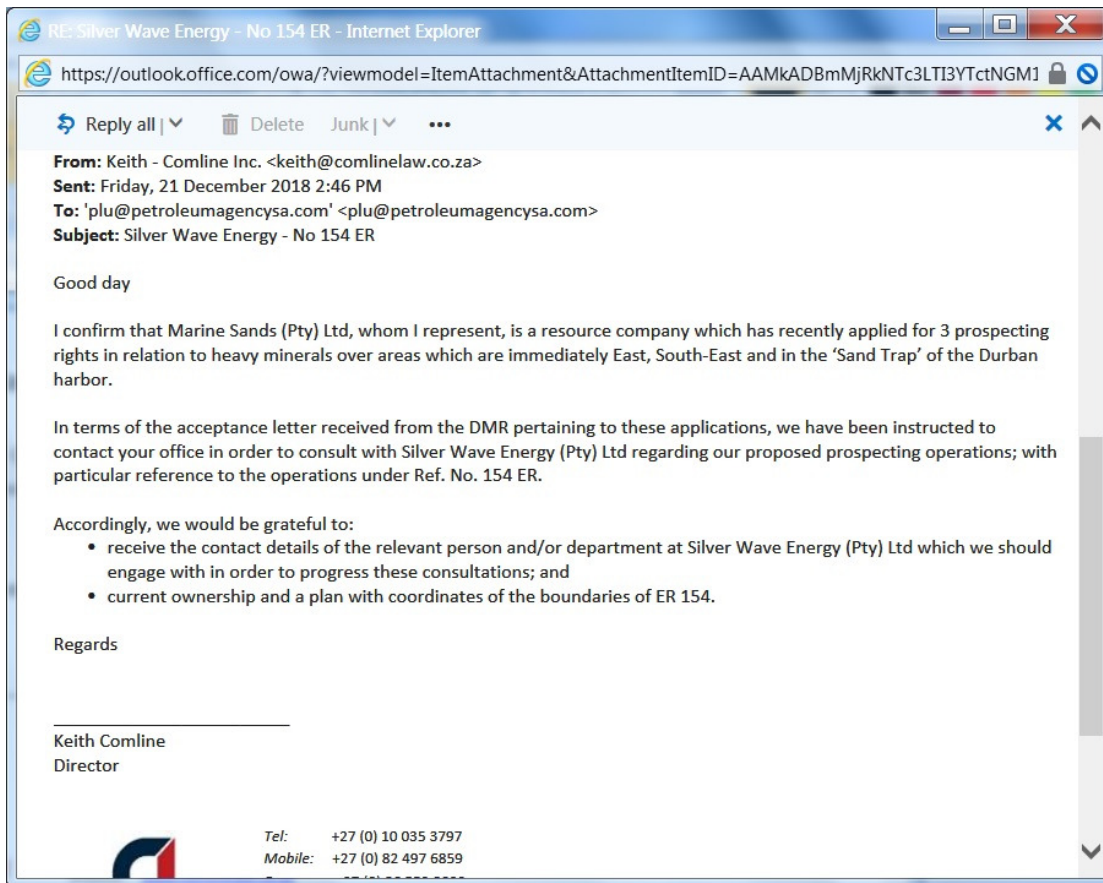
4.4.4 COMMENTS & RESPONSES

No comments received from I&AP's or authorities regarding the Area 1 application thus far. Comment was received for the similar public participation process conducted for Areas 2 & 3, but there has been no response to date regarding Area 1.

Copies of email correspondence from Marine Sands (Pty) Ltd to Silverwave, as requested in the acceptance letter, and Exxon copied below. No responses received to date.

Correspondence to Silverwave:

(a) 21 December 2018



(b) 16 January 2019

RE: Silver Wave Energy - No 154 ER


Keith - Comline Inc. <keith@comlinelaw.co.za>
plu@petroleumagency.com

Good day

With reference to the email below, we would be grateful to receive your response to the queries below.

Regards

Keith Comline
Director

 Tel: +27 (0) 10 035 3797
Mobile: +27 (0) 82 497 6859
Fax: +27 (0) 86 552 8093
Website: www.comlinelaw.co.za
Grosvenor Corner, 195 Jan Smuts, Rosebank
Johannesburg, Gauteng, South Africa, 2196

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(c) 18 January 2019

Operations offshore of Durban, South Africa

Keith - Comline Inc. <keith@comlinelaw.co.za>
To: minnminnong@googlemail.com; minnminnong@silverwaveenergy.com.com.sg
Cc: info@silverwaveinternational.com

Good day


I confirm that Marine Sands (Pty) Ltd, whom I represent, is a resource company which has applied to the Department of Mineral Resources (DMR) in South Africa for prospecting rights for heavy minerals in the area immediately south of the south harbour entrance pier at Durban harbour situated in the KwaZulu Natal Province in South Africa.

In accepting our application for processing, the DMR has instructed us to contact Silver Wave Energy, for comment regarding ER154 which the DMR has identified as being held by Silver Wave Energy. This ER includes cadastral blocks 2931 D, 2932A, 2932C and part of 2931 C.

Should you have any comments or queries please submit them to us at keith@comlinelaw.co.za.

Yours faithfully

Keith Comline
Director


 Tel: +27 (0) 10 035 3797
Mobile: +27 (0) 82 497 6859
Fax: +27 (0) 86 552 8093

Correspondence to Exxon, 18 January 2019

RE: EP 154 Kwa Zulu Natal coast - Internet Explorer
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RE: EP 154 Kwa Zulu Natal coast

 Keith - Comline Inc. <keith@comlinelaw.co.za>
miranda.anthony@exxonmobil.com; 'Stuart Comline' <comline@icon.co.za>


Good day

We refer to the correspondence below regarding our intended prospecting programme about the area surrounding the Durban harbour (to the east and south thereof) and confirm that in addition to the two areas contemplated in the Basic information Document, which was sent previously, we have receive acceptance of our application for prospecting for heavy minerals in the area immediately south of the south harbour entrance pier at Durban harbour situated in the KwaZulu Natal Province in South Africa.

Kindly acknowledge receipt of this communication and in the event that you wish to discuss this matter further or require further details, please contact me or Stuart Comline at comline@icon.co.za.

Yours faithfully

Keith Comline
Director

 **COMLINE**

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APPENDIX 5: ADDITIONAL DIAGRAMS

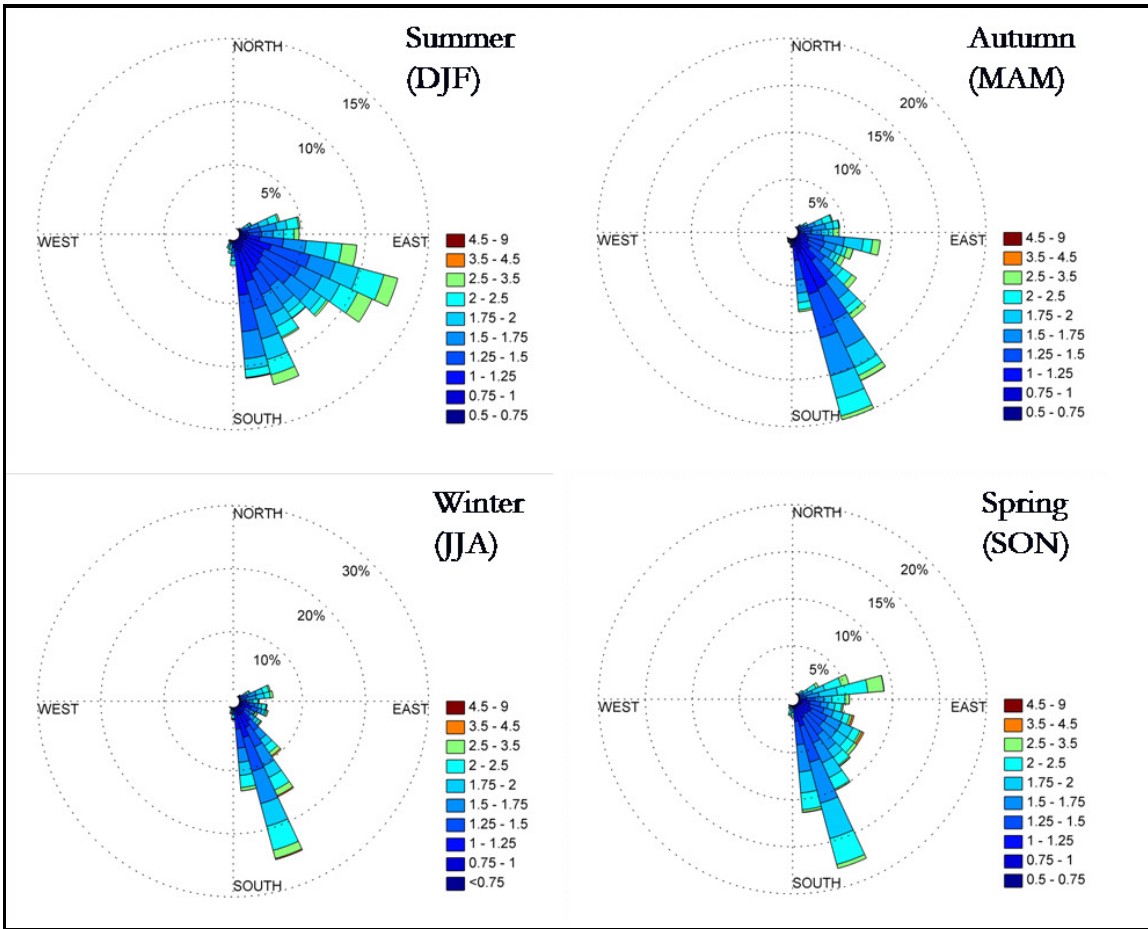


Figure 1: Seasonal swell distribution off Durban, based on 2007-2009 CSIR/ Transnet waverider data (S. Corbella, CCS construction).

APPENDIX 6: BACKGROUND INFORMATION DOCUMENT

ALAN SMITH CONSULTING

29 Browns Grove, Sherwood, 4091

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BACKGROUND INFORMATION DOCUMENT (BID)

PROSPECTING RIGHT APPLICATION FOR PROSPECTING ACTIVITIES FOR HEAVY MINERALS FROM DREDGED SAND OFFSHORE OF DURBAN, ETHEKWINI MUNICIPALITY, KWAZULU-NATAL - KZN 30/5/1/1/2/10780PR – AREA 1 (SAND TRAP)

1. PURPOSE OF THIS DOCUMENT

Marine Sands (Pty) Ltd (hereinafter referred to as “the applicant”) submitted a prospecting right application to the Department of Mineral Resources (hereinafter referred to as “the DMR”) for various offshore regions currently dredged by Transnet, offshore of Durban (KZN), in terms of section 16 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002) as amended by section 12 of the Minerals and Petroleum Resources Development Amendment Act (Act 49 of 2008) and section 24 of the National Environmental Management Act (Act 107 of 1998), read with Regulations 20 and 22 of the Environmental Impact Assessment (EIA) Regulations (2014). This Background Information Document (BID) is provided to:

- Communicate relevant information about the proposed project with identified stakeholders;
- Afford Interested and Affected Parties (I&APs) a platform to provide, in writing, their comments/concerns/issues with the application; and
- Provide details about the Public Participation Process that must be followed in terms of legislation.

1.1 Appointed Environmental Assessment Practitioner (EAP)

Alan Smith Consulting was appointed by the applicant as the independent Environmental Assessment Practitioner (EAP) to compile a Basic Assessment Report (BAR), Environmental Management Plan (EMP) and to undertake the Public Participation Process (PPP) for the Prospecting Right Application.

2. PROJECT DESCRIPTION

Prospecting Right applications were submitted to the Department of Mineral Resources (DMR) in order to obtain rights to determine whether economic concentrations of heavy minerals are present in the sands currently being dredged from the seafloor, offshore from Durban. The collection of sand is currently and necessarily being conducted by Transnet Durban port authorities by way of maintenance dredging of the seafloor around and to the east of the Durban Harbour. Some of the dredged sand is thereafter deposited in the sand hopper at the “A” berth in the Durban port (located next to the National Sea Rescue Institute (NSRI) base, off Mahatma Gandhi Road, Point, Durban) (refer Figure 1) for subsequent pumping by the eThekweni Municipality northward along the Durban beaches as part of the beach re-nourishment scheme. Thus, the proposal relates to the prospecting for heavy minerals from sand that will have already been dredged by Transnet.

Dredging activities take place offshore of Durban and the current prospecting proposal is relevant to one site, viz.:

- KZN 30/5/1/1/2/10780PR - Area 1: 9.8611 ha, corresponding to an area known as the "sand trap" immediately south to east of the Durban harbour South Pier (Refer to Map 1).

Prospecting will comprise a physical sand sampling survey of the dredged sand, either from on board the Transnet dredger (refer Figure 2) or from within or about the sand hopper. Sampling will be done by a competent person and will consist of removal of hand collected small sand samples (<0.5m³) from within a Transnet dredger or from within a translocation process at the sand hopper. This sand will then be analysed at an offsite commercial laboratory to determine the concentrations of heavy minerals. No environmental disturbances are envisaged during the prospecting process: the sampling is a physical process with no substances added *in situ* and thus will not detrimentally impact the surrounding environment, nor materially affect the composition and volume of sand available for the augmentation of the beaches.

3. PROSPECTING RIGHT APPLICATION PROCESS AND PUBLIC PARTICIPATION

3.1 Legislation

The proposed activity triggers Activity 20 of GNR 983 (Listing Notice 1) of the Environmental Impact Assessment Regulations, 2014, viz. "Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act (Act 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource..." Thus, in order to obtain Environmental Authorisation from the Department of Mineral Resources (DMR), a Basic Assessment (BA) process needs to be followed. In terms of prevailing mining and environmental legislation, the applicant is required to consult with Interested and Affected Parties (I&APs). Comments and/or issues raised by I&APs will be recorded and included in the Basic Assessment Report (BAR) and submitted to the DMR (KZN).

The BAR and Environmental Management Programme (EMPr) will be compiled and implemented to ensure that any potential impacts of the proposed prospecting activities are mitigated and managed. The EMPr will include, *inter alia*, the following:

- Description of the environment that is likely to be affected by the proposed prospecting activities;
- Identification of potential environmental and social impacts;
- Assessment of the significance of these potential impacts on the environment and socio-economic conditions; and
- Evaluation and implementation of the proposed mitigation measures to minimise negative environmental impacts.

3.2. Public Participation

Notice of the prospecting rights application relevant to Area 1 (the "sandtrap") was advertised in the Mercury newspaper on 25 January 2019. Stakeholders affected by, or who are interested in, the proposed project are invited to register as an I&AP to become involved in the Public Participation Process (PPP). Please complete and submit the registration form contained in Appendix A to the EAP consultants by email or post. The following anticipated dates are important to note for the PPP going forward:

- Advertisement of applicant's Prospecting Right Application: 25 January 2019
- Stakeholder engagement and consultation, distribution of BID: January - February 2019
- Distribution of draft BAR & EMPr for comment (allow 30 days): 11 February 2019
- Closure of draft BAR & EMPr comment period: 13 March 2019
- Submission of final BAR and EMPr: last week of March 2019

Contact Details of the EAP:

Ms Lisa Guastella or Dr Alan Smith at Tel: 031 208 6896, E-mail: lisa.guastella@alumni.uct.ac.za, asconsulting@telkomsa.net, Postal Address: 29 Browns Grove, Sherwood, 4091.

Date of this notice: 28 January 2019

Please note: It is essential that you complete the registration form in Appendix A below. We urge you to register as an I&AP by 11 February 2019, in order to allow for the 30 day commenting period on the draft BAR.



Figure 1: Sand hopper and dredgers at Durban Harbour "A" berth



Figure 2: Transnet's Ilembe dredger

APPENDIX A

**PROSPECTING RIGHT APPLICATION FOR PROSPECTING ACTIVITIES FOR
HEAVY MINERALS FROM DREDGED SAND OFFSHORE OF DURBAN,
ETHEKWINI MUNICIPALITY, KWAZULU-NATAL**

Title:	First name:	Surname:	Initials:
Organisation:	Designation:		
Postal Address:			
Postal Code:			
Tel No:	Cell No:		
Fax No:	E-mail:		

I, the registered owner / representative of the organisation / property known as:

Hereby verify that an information notice of the above development has been circulated to me and would like to be registered as an Interested and Affected Party for the abovementioned development. Please address the concerns expressed by me in the below text in the Basic Assessment process (feel free to add additional text on a separate page):

Please provide more information regarding the project (Specify):

Please add the following persons to your list of interested and affected parties:

Name:	Organisation:
Telephone:	
Postal Address:	
Name:	Organisation:
Telephone:	
Postal Address:	

Signed at _____ this ____ day of _____ 2018

Signature _____

PLEASE SEND THIS REGISTRATION FORM AND ANY ADDITIONAL COMMENTS TO:

Environmental Assessment Practitioners:

Contact person:

Postal address:

Postal code:

Telephone:

Cell phone:

E-mail:

Alan Smith Consulting

Ms Lisa Guastella or Dr Alan Smith

29 Browns Grove, Sherwood, Durban

40917

+27 (0)31 2086896

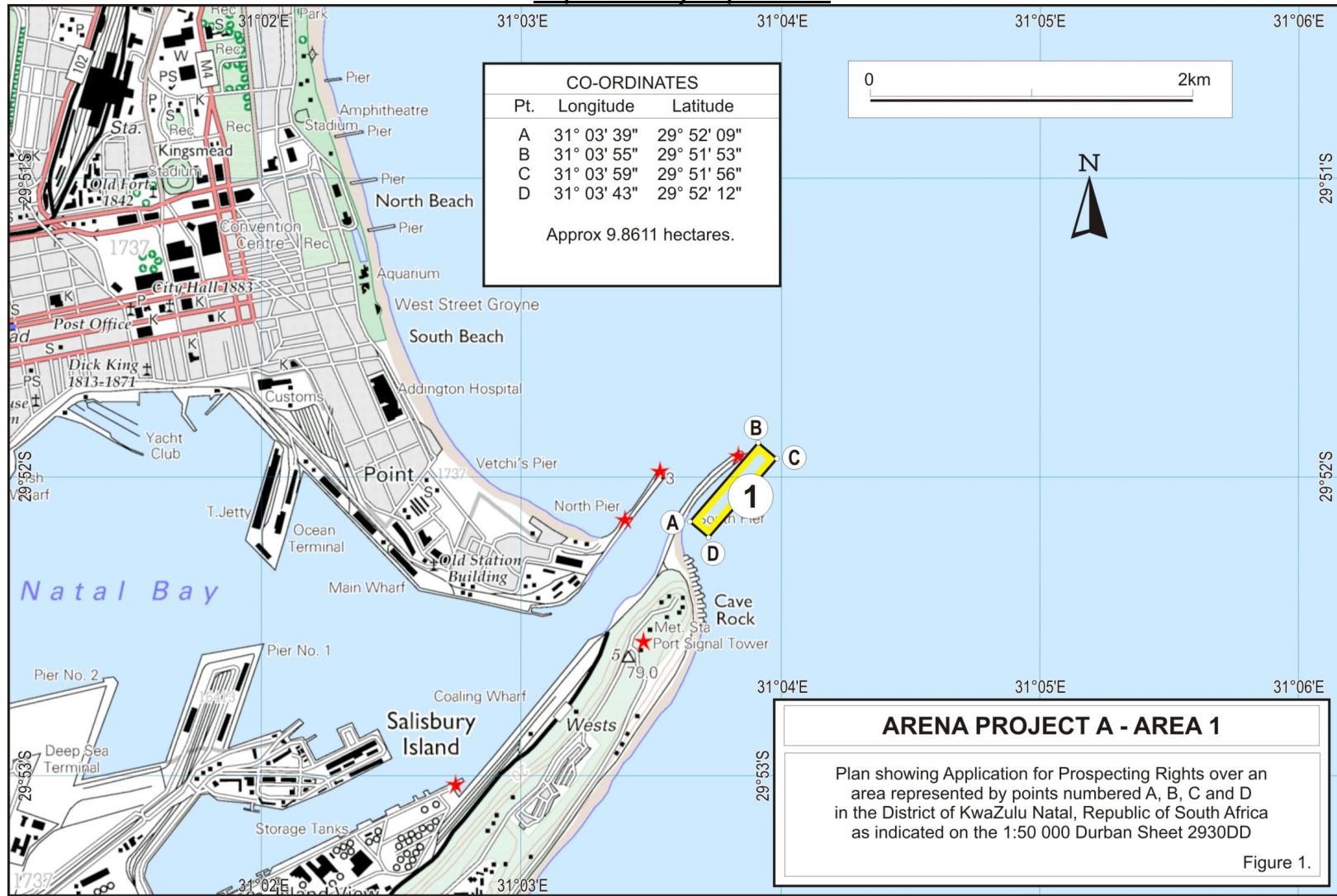
+27 (0)82 8604043

lisa.guastella@alumni.uct.ac.za,

asconsulting@telkomsa.net

Thank you for your participation

Map 1: Locality Map – Area 1



APPENDIX 7: REFERENCES

Allan, D.G., 2012: The Waterbirds of Durban Bay – Current and Historical Population Trends, Durban Natural Science Museum *Novitates* 35, 74pp.

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