



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: Verneujk Pan Trust (IT311/99)

TEL NO: 054 431 0088 and 082 339 9827

FAX NO: 054 431 0550

POSTAL ADDRESS: P. O. Box 241, Kakamas, 8870

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FILE REFERENCE NUMBER SAMRAD: 192361

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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 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

Mr C A Bruwer

P O Box 241

Kakamas

8870

Tel.: 054 431 0088

Cel'.: 078 1833 288

i) Details of the EAP

Name of The Practitioner: EnviroAfrica/Vivienne Thomson

Tel No.: 021 851 1616

Fax No.: 086 512 0154

e-mail address: vivienne@enviroafrica.co.za

ii) Expertise of the EAP.

(1) The qualifications of the EAP

(with evidence).

See Curriculum Vitae attached as Appendix A

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

(In carrying out the Environmental Impact Assessment Procedure)

See Appendix A

b) Location of the overall Activity.

Farm Name:	Plot 2372, Kakamas
Application area (Ha)	not more than 5 hectare
Magisterial district:	Z District Municipality
Distance and direction from nearest town	Approximately 7,5 km south-west of Kakamas
21 digit Surveyor General Code for each farm portion	C03600070000237200000

c) Locality map

(show nearest town, scale not smaller than 1:250000).

Please refer to Appendix B attached.

d) Description of the scope of the proposed overall activity.

Provide 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

Please refer to Appendices B and D attached.

The application is for a borrow pit for the removal of sand from an area not more than 5ha in size. It was communicated that no office or storage buildings will be constructed on the proposed site except for the provision of a portable toilet for the approximately 2 to 4 workers who will be working on site (digger/back-actor machine operators and tip-truck drivers). Location of portable toilet still to be determined.

(i) Listed and specified activities

NAME OF ACTIVITY <i>(E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc</i> <i>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...etc...etc.)</i>	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY Mark with an X where applicable or affected.	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)
Mining - excavations	not more than 5ha	X	NEMA, GNR. 327, 21(a)

(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 application is for a borrow pit for the removal of sand from an area not more than 5ha in size. It was communicated that no office or storage buildings will be constructed on the proposed site except for the provision of a portable toilet for the approximately 2 to 4 workers who will be working on site (digger/back-actor machine operators and tip-truck drivers).

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)
National Environmental Management Act, No. 107 of 1998 (NEMA) Environmental Impact Assessment (EIA) Regulations Listing Notice 1 of 2014, as amended (GN. R. 327) 21(a)	Earthworks for the excavation and removal of sand form an area not larger than 5ha.	Application for an environmental authorisation (EA) is being made by EnviroAfrica through this basic assessment report (BAR) and environmental management programme report (EMPR).
NEMA, EIA Regulations Listing Notice 1 of 2014, as amended (GN. R. 327) 12(xii)(c)	The development of a borrow pit of not more than 5ha within 32m of a watercourse and the placement of a portable toilet within the borrow pit site.	A freshwater specialist study of the proposed site has been undertaken and recommendations have been included in the BAR and EMPR.
NEMA, EIA Regulations Listing Notice 1 of 2014, as amended (GN. R. 327) 27	More than 1ha of indigenous vegetation will be cleared	A specialist botanical assessment of the proposed site has been undertaken and recommendations have been included in the BAR and EMPR.
National Water Act, No. 36 of 1998 (NWA), Section 21 (c) & (i)	Proposed borrow pit area has several dry or ephemeral watercourses	Application for a water use licence is being made by WatsanAfrica CC on behalf of the proponent.
National Environmental Management: Biodiversity Act, No. 10 of 2004 (GN. R. 152)	Potential endangered, vulnerable or protected plant	Captured in EMPR. Although no species in terms of NEM:BA were

	species on the proposed site	observed by the botanical specialist
National Forests Act, No. 84 of 1998 (NFA)	Avoidance of protected / significant trees, or permit application if removal required	Captured in EMPR. Refer to EMPR and Botanical Assessment
Northern Cape Nature Conservation Act, No. 9 of 2009	Avoidance of protected / significant plants and trees, or permit application if removal required	Captured in EMPR. Refer to EMPR and Botanical Assessment

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 Verneujk Pan Trust's appointed Trustees are Mr Charel Andries Bruwer and Mr Hendrik Cornelius Le Roux (as the Independent Trustee), as per Appendix H. The Verneujk Pan Trust's appointed representative for the proposed development of a sand borrow pit in Plot 2372, Alheidt, Kakamas, is Mr Charel Andries Bruwer (as per Appendix F). Mr Bruwer is the owner of an established construction machinery and supply business in the region.

Kakamas (and Alheidt) are ever developing nodes in the Kai!Garib Municipal region. There is a demand for sand to meet the construction/building growth in the area and the proposed development is to provide a legitimate means of meeting this demand. While the actual proposed development will not provide additional employment for surrounding community members, it will provide sustained income for Mr Bruwer's existing 2 to 4 skilled employees who will be part of the operational staff for the development.

In addition, the raw material (sand) provided by the proposed borrow pit, will enable other building/construction companies to whom the sand is supplied, to provide skilled and unskilled employment opportunities for persons in the Kakamas/Kai! Garib region (potential permanent and temporary employment opportunities).

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

The plot (on which the borrow pit development is proposed), is currently being leased to the Verneujk Pan Trust (represented by Mr. Bruwer) and has been sold to the Trust (as per Appendix I).

Originally, an area more to the north-east of the current proposed (preferred) site was investigated. However, due to the recommendations of the botanical and freshwater specialists, moving the site closer to the existing pivot point crop circle reduced environmental impacts both on flora as well as on the more significant watercourse (ephemeral stream).

The proposed activities involve the removal of sand mechanically using diggers/backactors and loading the sand directly into waiting tipper trucks for removal off site. There is no technology alternative for this activity since bulk amounts of sand need to be removed as per the recommendations in the specialist reports and associated EMPR.

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 provided as Appendix 4 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) It is proposed that the borrow pit activity be undertaken on Plot 2372 as per the Locality maps in Appendices B and D (See points 'c' to 'e' below).

b) The activity is the mechanical excavation of sand for removal and sale off site. It is proposed that the sand will be excavated from an area not greater than 5ha. NEMA EIA Regulations (2014), Listing Notice 1 of 2014, as amended (GN. R. 327) 21(a). Also, see point 'c' to 'e' below.

Points (c), (d) and (e) are addressed below:

No structures will be built on the proposed development site since the proposed development is purely for the establishment of a borrow pit for the removal of sand. There will be no processing or refining of the sand on site.

The layout of the works and methodology for the excavation of the sand will be as per the botanical/biodiversity and freshwater specialists' recommendations viz.

Botanical assessment development footprint input and recommendations:

- The recommendation that sand mining be kept to the open areas (already disturbed by grazing) away from the stream located to the north of the site investigation area, has already been taken into account to a large extent by shifting the original 5ha footprint south east, closer to the existing crop circle and away from the most significant trees on site (as specified in the botanical assessment). This shift in development footprint areas is indicated when comparing Figure 1 and 2 below.

- Excavation must not take place within 1m of the ‘dripline’/ ‘canopy line’ of any protected, endangered and / or significant trees (as specified in the botanical assessment and captured in the EMPR).
- Sand mining should preferably not exceed 2.5 m in depth (to enable better rehabilitation) and must be kept within the open areas between trees.
- Topsoil must be removed to a depth of 15 – 30 cm and protected and stored separately for re-use during rehabilitation
- Excavation will consider rehabilitation and will ensure that enough sand remains to slope / contour the excavated areas back to a more natural state during rehabilitation.
- All construction will be done in accordance with an approved construction and operational phase Environmental Management Plan / Programme (EMPR), which will include the recommendations made in this report.
- A suitably qualified Environmental Control Officer will be appointed to monitor the construction phase in terms of the EMPR and any other conditions pertaining to specialist studies.
- An application will be made to DENC for a flora permit in terms of the NCNCA with regards to impacts on species protected in terms of the act.
- Access will be limited to routes approved by the ECO.
- Before any work is done, the final construction footprint and access routes will be clearly demarcated (with the aim at minimal width / smallest footprint). The demarcation will include the total footprint necessary to execute the work but will aim at minimum disturbance.
- Lay-down areas or construction sites will be located within already disturbed areas or areas of low ecological value and will be pre-approved by the ECO.
- Indiscriminate clearing of any area outside of the construction footprint must be avoided.
- All areas impacted as a result of construction will be rehabilitated on completion of the project.
- An integrated waste management approach will be implemented during construction.



Figure 1: Potential areas for sand excavation as made by botanical/biodiversity specialist after initial botanical assessment. Grey outline indicates area investigated by specialists for potential borrow pit suitability.

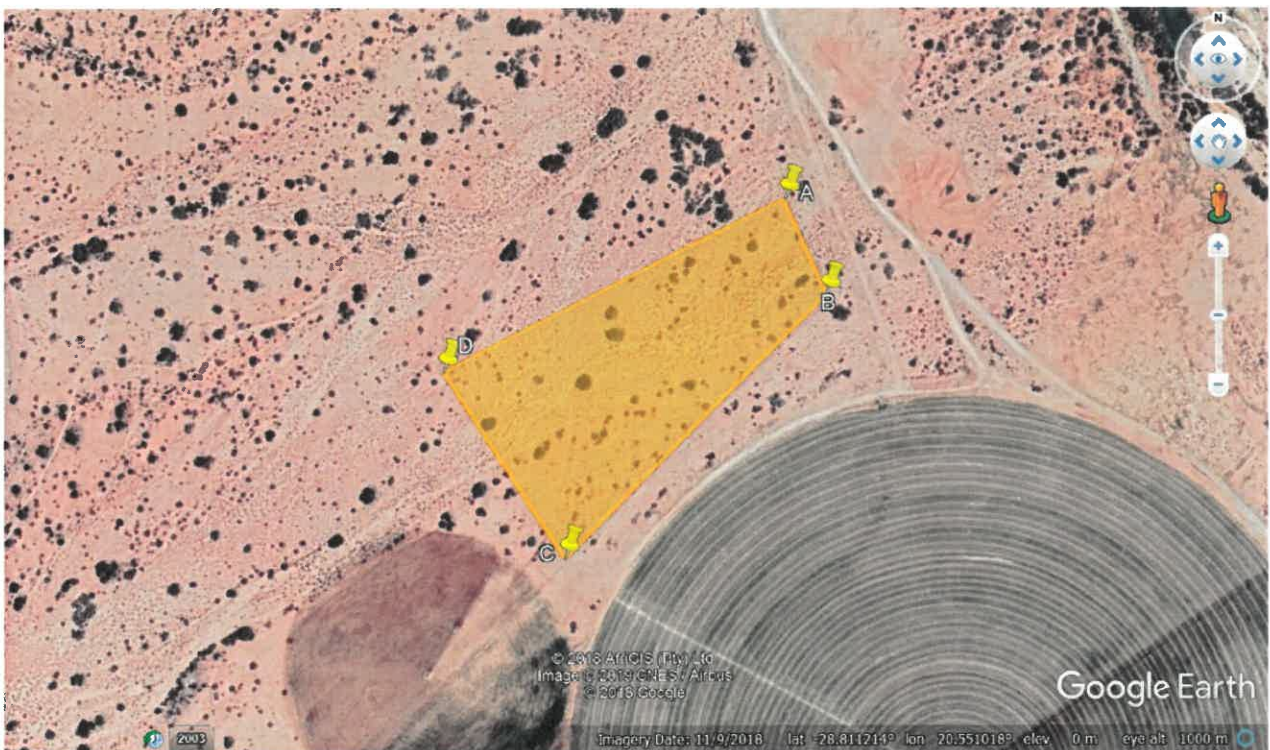


Figure 2: Proposed total development site (indicated in orange) within which predetermined sections ('blocks' or 'strips') of the upper sand layer will be excavated. Landscaping/contouring of a block/strip will take place before a new block development footprint is opened for excavation. No excavations will take place within physically demarcated no-go areas (as per specialist recommendations).

Proposed development footprint co-ordinates for sand borrow pit on Plot 2372, Alheidt, Kakamas:

Point	Latitude	Longitude
A	-28.809750°	20.552419°
B	-28.810540°	20.552801°
C	-28.812696°	20.550371°
D	-28.811172°	20.549236°

Freshwater report development footprint input and recommendations:

The clay layer in the proposed site area lies between 0.9m and 3.0m. This clay horizon acts as an aquitard below the permeable sand, above which the shallow groundwater spreads laterally and downhill towards the Hartbees River. Hence the presence of more vegetation around the drainage lines.

Should the proposed sand borrow pit excavation activity punch holes through the clay, the shallow un-confined ground water will move further down through these 'holes' into the secondary, probably more confined aquifer that may be out of reach of the vegetation.

Considering the end (post-development) use of the proposed site is for the area to revert to agricultural land use, the clay layer must and will be left intact since this would be advantageous to the envisaged agricultural development if enough sand would remain on the clay layer for the crops to take root. This would allow the shallow groundwater to remain available for natural vegetation instead of escaping further to deeper aquifers. Ensuring the clay layer is left undisturbed further enables this 'closure' land use.

No activities will be allowed outside of the demarcated mining area.

In the middle of the natural drainage line running through the proposed development site, the depth of sand is only 0.9m. **This part must not be mined.**

Out of the drainage line the sand is 2m deep and even deeper. In no event will mining take place lower than the lowest point in the drainage line.

Machinery, waste and rubble will not be allowed to accumulate anywhere in the natural vegetation.

The main threat due to the proposed development is due to the movement of sediments down the drainage line and into the Hartbees River.

Excavation of the borrow pit will be done in 'blocks' or sections. Once a block is excavated, it should be immediately rehabilitated. The area will be either sloped or levelled (as required in specialist reports) and landscaped.

Any signs of erosion will be addressed immediately after downpours. Eroded areas should be filled in and the compacted. It should be planted with suitable vegetation. Irrigation may be required to establish this vegetation.

If necessary, berms and contours should be constructed to direct storm water away to less susceptible areas.

The biggest threat to the Hartbees River during the subsequent rehabilitated 'end-use', is the agricultural return flow because of over-irrigation. This is very evident in many originally dry natural drainage lines which have been turned into agricultural drainage channels. The impact on a receiving river's water quality is negative and deleterious. It is therefore expected that the ground moisture levels be scientifically monitored and that irrigation adjusted accordingly, with return flow limited, if not eliminated altogether.

Site clearance and excavation / borrow pit waste, agricultural waste and any other waste / litter will not be allowed to pass down the channel.

Vehicles and other disturbances will be kept out of the altered drainage lines as to prevent any disturbance that could result in erosion.

The transport of sand off site by tipper trucks presents special problems, as the laden trucks can imprint deep tracks into the sandy access route and onto the mining area. These tracks constitute preferential storm water flow paths. These will be filled in and compacted. Storm water escape furrows will be constructed and maintained to divert storm water away from the access route all the way to the N14 trunk road.

- f) The option of not implementing the activity will result in no direct impact on the environment but it will also result in a lack of legally available raw material (sand) for the Kai! Garib region's building / construction companies to whom the sand would be supplied. These companies, in turn have an impact on the provision of skilled and unskilled employment opportunities for persons in the Kakamas / Kai! Garib region (potential permanent and temporary employment opportunities).

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.

First round of public participation (PP) process i.e. pre-application:

Placed advertisement in local newspaper regarding project, background information maildrop notification.

Sent/posted notifications to immediate neighbours, occupiers of the proposed site, organs of state, ward councillors and potential interested and affected parties (I&APs).

Place A2 posters on proposed development site boundary.

Display and place A3 posters and maildrop letters in public facilities (municipality, large formal retail shops, libraries).

Display A3 posters in additional public places e.g. informal settlement entrances, local/informal spaza shops/gathering places.
Deliver maildrop letters to any neighbouring properties / surrounding communities
Update I&AP list.
Populate summary of issues raised by I&APs in BAR.

Second round of public participation (PP) process i.e. post-application:

Load application form, BAR and associated documents on SAMRAD for competent authority viewing.
Send out notifications to other registered I&APs *re.* application and DBAR availability on EnviroAfrica website for public viewing / comment.
Email, deliver or post copies of any PP documentation to querying I&APs who request them.
Update I&AP List.
Update summary of issues raised by I&APs in BAR.

Submit final BAR (FBAR) for comment and inform I&APs of submission.

Await competent authority EA decision.

Inform I&APs of competent authority appeal process and decision when received.

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	X None received	N/A	N/A	N/A
Lawful occupier/s of the land	None received	N/A	N/A	N/A
Landowners or lawful occupiers on adjacent properties	X None received	N/A	N/A	N/A
Municipal councillor	X None received	N/A	N/A	N/A
Municipality	X None received	N/A	N/A	N/A
Organs of state (Responsible for				

<p>infrastructure that may be affected Roads Department, Eskom, Telkom, DWA e</p>															
<p>SANRAL notified</p>	<p>X</p>	<p>None received</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p>Communities</p>		<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p>Dept. Land Affairs</p>		<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p>Traditional Leaders</p>		<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p>Dept. Environmental Affairs</p>		<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p>Other Competent Authorities affected</p>															
<p>Department of Agriculture, Forestry and Fisheries (DAFF)</p>	<p>X</p>	<p>2019/09/06</p>	<p>Request to: i. take note of Sections 12, 15, 58, 62 and 63 of the NFA; ii. assess potential impacts on protected plants and trees; iii. obtain required permits/licences, if necessary; iv. overlay the development site with the Northern Cape Critical Biodiversity Areas and Ecological Support Areas maps;</p>	<p>All issues raised by DAFF (points i - iii) addressed through commission of independent specialist botanical assessment and inclusion of specialist's recommendations as per Appendices K and O. Point iv - addressed in Sensitivity maps as per Appendix C and botanical assessment as per Appendix K. Point v and vi - issues noted.</p>	<p>Appendices C and H of BAR and EMPR.</p>										

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).

The proposed development footprint is located on private property on slightly disturbed natural veld (stock grazing over a long period of time has likely altered the vegetation composition). It is also located within deeper sandy soils of a small valley bottom (historical floodplains). Although the veld shows signs of degradation and a diminished species composition and the vegetation type itself are not considered vulnerable or endangered, the presence of so many protected tree species and the small seasonal stream enhances the value of the site in terms of botanical significance. The presence of so many of these magnificent trees is probably the single most defining feature of this site and its surroundings. However, the same vegetation and species composition can be found in most of the lower floodplains along the Hartbees and Kameelputs Rivers in this area. It is thus not a unique feature of this site alone.

The Northern Cape CBA Map (2016) identifies biodiversity priority areas, called Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), which, together with protected areas, are important for the persistence of a viable representative sample of all ecosystem types and species as well as the long term ecological functioning of the landscape as a whole (Holness & Oosthuysen, 2016). According to the NCCBA the proposed site will impact on a CBA area (Refer to Figure 7).

The site will not impact on any recognised centre of endemism.

The proposed activity will have a long term impact on 5 ha of land within a CBA. The vegetation of the larger footprint is still well connected to the north and west. Too the south and east intensive agriculture is practiced. Connectivity might be slightly impaired, but should not result in a significant additional impact.

The site is located on slightly deeper soils than normally expected in this vegetation type as it is located on historical floodplains. As a result the plant species composition changed to scattered woodland.

(b) Description of the current land uses.

Current land use zoning is agricultural (evidence that proposed site / land was used for grazing/cattle tracks in site photographs attached as Appendix E).

The surrounding land use is primarily agricultural although there are other sand mines/borrow pits in the area.

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

Except for an access control gate and wire fence along the eastern (parallel to the main access road) and wire boundary fencing along the southern boarder of the proposed development site, no other infrastructure exists on the site.

(d) Environmental and current land use map.

(Show all environmental, and current land use features)

Please refer to sensitivity maps attached as Appendix C.

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).

Refer to Appendix N.

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).

Refer to Appendix N.

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)

Refer to Appendix N.

The plot (on which the borrow pit development is proposed), is currently being leased to the Verneujk Pan Trust (represented by Mr. Bruwer) and has been sold to the Trust (as per Appendix I).

Originally, an area more to the north-east of the current proposed (preferred) site was investigated. However, due to the recommendations of the botanical and freshwater specialists, moving the site closer to the existing pivot point crop circle reduced environmental impacts both on flora as well as on the more significant watercourse (ephemeral stream).

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).

Refer to section h(iii) above.

ix) Motivation where no alternative sites were considered.

The plot (on which the borrow pit development is proposed), is currently being leased to the Verneujk Pan Trust (represented by Mr. Bruwer) and has been sold to the Trust (as per Appendix I).

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

Plot 2372 on which the borrow pit development is proposed, is currently being leased to the Verneujk Pan Trust (represented by Mr. Bruwer) and has been sold to the Trust (as per Appendix I).

Originally, an area more to the north-east of the current proposed (preferred) site was investigated. However, due to the recommendations of the botanical and freshwater specialists, moving the site closer to the existing pivot point crop circle reduced environmental impacts both on flora as well as on the more significant watercourse (ephemeral stream).

The proposed activities involve the removal of sand mechanically using diggers / backactors and loading the sand directly into waiting tipper trucks for removal off site. There is no technology alternative for this activity since bulk amounts of sand need to be removed as per the recommendations in the specialist reports and associated EMPR.

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.)

Refer to Appendix N, as well as risk identification and ratings in specialist reports (Appendices K to M).

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 (Including the potential impacts for cumulative impacts)	ASPECTS AFFECTED	PHASE In which impact is anticipated	SIGNIFICANCE if not mitigated	SIGNIFICANCE if mitigated
<p>(E.g. For prospecting - drill site, site camp, ablation facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...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, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc...etc...etc.)</p>	<p>(e.g. dust, noise, drainage surface water disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)</p>		<p>(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)</p>		<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. etc)</p> <p>E.g. Modify through alternative method. Control through noise control Control through management and monitoring through rehabilitation..</p>
Refer to Appendix N					

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

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.
Botanical Assessment, P B Consult (September 2018)	<p>Sand mining should be kept to the open areas (already disturbed by grazing) away from the stream located to the north of the site investigation area.</p> <p>Excavation must not take place within 1m of the 'dripline' / 'canopy line' of any protected, endangered and/or significant trees:</p> <ul style="list-style-type: none"> •It is imperative that the mining footprint is placed in the open (already disturbed) areas away from the small seasonal stream (>32 m away) to the north and at least 1 m away from the canopy line (drip-line) of any mature indigenous tree. In fact there should be enough open areas, to avoid impact even on smaller protected species (e.g. young Camel thorn trees). Please refer to Figure 8 underneath, which proposes areas for potential sand mining, which will keep it away from the small stream and away from protected tree species. •No development should be allowed within 1 m away from the canopy line of any of the Euclea pseudebenus trees (in other words no impact on any of these trees), which should be very easy to achieve. •No impact should be allowed within 1 m away from the canopy line of any mature (>6 m in height) Vachellia erioloba (Camel Thorn) trees. In fact, it should be easy to protect all Camel thorn trees and still be able to do sand mining. However, should any Camel Thorn tree have to be removed, a permit must first be applied for. 	All recommendations included	Within BAR, Appendix K, as well as in EMPR.

- No impact should be allowed within 1 m away from the canopy line of any of the mature *Boscia* species (both *Boscia albitrunca* and *Boscia foetida*). Again, this should be easy to achieve. However, should any Shepard's tree have to be removed, a permit must first be applied for.
- No impact should be allowed on any other mature indigenous trees larger than 6 m (e.g. *Ziziphus mucronata*), even though they are not protected species. Large indigenous trees within an arid area such as this, play an important role in the ecology of the area as a whole.
- Sand mining should preferably not exceed 2.5 m in depth (too enable better rehabilitation) and must be kept within the open areas between trees.
- Topsoil must be removed to a depth of 15 – 20 cm and protected and stored separately for re-use during rehabilitation
- Mining must consider rehabilitation and must ensure that enough sand remains to slope / contour the excavated areas back to a more natural state during rehabilitation.
- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan / Programme (EMPR), which must include the recommendations made in this report.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMPR and any other conditions pertaining to specialist studies.
- An application must be made to DENC for a flora permit in terms of the NCNCA with regards to impacts on species protected in terms of the act.
- Access must be limited to routes approved by the ECO.
- Before any work is done, the final construction footprint and access routes must be clearly demarcated (with the aim at minimal width / smallest footprint). The demarcation must include the total footprint necessary to execute the work but must aim at minimum disturbance.

	<ul style="list-style-type: none"> • Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO. • Indiscriminate clearing of any area outside of the construction footprint must be avoided. • All areas impacted as a result of construction must be rehabilitated on completion of the project. • An integrated waste management approach must be implemented during construction. 		
<p>Freshwater Report V1.2, Watsan Africa, August 2018</p>	<p>The clay layer in the proposed site area lies between 0.9m and 3.0m. This clay horizon acts as an aquitard below the permeable sand, above which the shallow groundwater spreads laterally and downhill towards the Hartbees River. Hence the presence of more vegetation around the drainage lines.</p> <p>Should the proposed sand borrow pit excavation activity punch holes through the clay, the shallow un-confined ground water will move further down through these 'holes' into the secondary, probably more confined aquifer that may be out of reach of the vegetation. Considering the end (post-development) use of the proposed site i.e. as sections of the site are excavated, they will be landscaped and rehabilitated. The long-term or end-state of the proposed development after operational life is for the area to revert to agricultural land use. Ensuring the clay layer is left undisturbed further enables this 'closure' land use. with the after sand is excavated the proposed site would be rehabilitated</p> <p>Therefore, the clay layer must be left intact since this would be advantageous to the envisaged agricultural development if enough sand would remain on the clay layer for the crops to take root. It would be as advantageous if the clay layer is not excavated but rather left intact during borrow pit operations. This would allow the shallow groundwater to remain available for vegetation instead of escaping further to deeper aquifers.</p> <p>No activities should be allowed outside of the demarcated mining area.</p>	<p>All recommendations included</p>	<p>Within BAR, Appendix L, as well as in EMPR.</p>

Machinery, waste and rubble should not be allowed to accumulate anywhere in the natural vegetation.

The main threat because of the mining phase is the movement of sediments down the drainage line and into the Hartbees River. Mining should be done in blocks or sections. Once a block is mined out, it should be immediately rehabilitated. The area should be levelled and landscaped.

Any signs of erosion should be addressed immediately after downpours. Eroded areas should be filled in and the compacted. It should be planted with suitable vegetation. Irrigation may be required to establish this vegetation. If necessary, berms and contours should be constructed to direct storm water away to less susceptible areas.

The flow path of the drainage line should remain the same as far as possible, despite excavations.

Similar mining operation require berms and cut-off trenches to divert storm water away from the mining site. The rainfall in this instance is low. Consequently, no such infrastructure is required. Even during a very high rainfall event, it is not foreseen that enough sediments would be transported to pose a threat to the Hartbees River and lower down into the Orange River.

The biggest threat to the Hartbees River during the subsequent end use is the agricultural return flow because of over-irrigation. This is overly evident in so many of these originally dry natural drainage lines turned into agricultural drainage channels. The impact on river's water quality is negative and deleterious. It is therefore expected that the ground moisture levels be scientifically monitored and that irrigation adjusted accordingly, with return flow limited, if not eliminated altogether.

Mining waste, agricultural waste, other waste and litter should not be allowed to pass down the channel.

Vehicles and other disturbances should be kept out of the altered drainage lines as to prevent any disturbance that could result in erosion.

<p>Phase 1 HIA Report, Ubique Heritage Consultants, September 2018</p>	<p>The transport of sand present special problems, as the laden trucks can imprint deep tracks into the sandy access route and onto the mining area. These tracks constitute preferential storm water flow paths. These should be filled in and compacted. Storm water escape furrows should be constructed and maintained to divert storm water away from the access route all the way to the N14 trunk road. Pooling of storm water should be prevented. Should a diesel spill occur, the contaminated soil should be lifted and disposed of on a suitable landfill site. From the assessment it is evident that these mitigation measures can be successfully implemented. This is apart from a fundamentally changed drainage line that cannot be ameliorated. Best practice and an appropriate level of management will assure that the aquatic as well as terrestrial environment can be protected and not impacted upon more than is foreseen by the envisaged mining operation and subsequent agricultural development.</p> <p>No heritage sites or features were identified. No further mitigation is required. Therefore, from a heritage point of view we recommend that the proposed development can continue.</p> <p>Due to the zero palaeontological significance of the area, no further palaeontological heritage studies, ground truthing and/or specialist mitigation are required. It is considered that the development of the proposed development is deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area as the igneous rocks underlying the site are not fossiliferous. It is therefore recommended that the project be exempt from a full Paleontological Impact Assessment (Butler 2018).</p> <p>Although all possible care has been taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the assessment. If during construction, any possible discovery of finds such as stone tool scatters, artefacts, human remains, or fossils are made, the operations must be stopped, and a qualified archaeologist must be contacted for an assessment of the find.</p>	<p>All relevant recommendations included</p>	<p>Within BAR, Appendix M, as well as in EMPR.</p>
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Attach copies of Specialist Reports as appendices

I) Environmental impact statement

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

- Sand mining be kept to the open areas (already disturbed by grazing)
- Excavation must not take place within 1m of the 'dripline' / 'canopy line' of any protected, endangered and / or significant trees (as specified in the botanical assessment and captured in the EMPR).
- Sand mining should preferably not exceed 2.5 m in depth (to enable better rehabilitation) and must be kept within the open areas between trees.
- Topsoil must be removed to a depth of 15 – 30 cm and protected and stored separately for re-use during rehabilitation
- Excavation will consider rehabilitation and will ensure that enough sand remains to slope / contour the excavated areas back to a more natural state during rehabilitation.
- All construction will be done in accordance with an approved construction and operational phase Environmental Management Plan / Programme (EMPR), which will include the recommendations made in this report.
- A suitably qualified Environmental Control Officer will be appointed to monitor the construction phase in terms of the EMPR and any other conditions pertaining to specialist studies.
- An application will be made to DENC for a flora permit in terms of the NCNCA with regards to impacts on species protected in terms of the act.
- Access will be limited to routes approved by the ECO.
- Before any work is done, the final construction footprint and access routes must be clearly demarcated (with the aim at minimal width / smallest footprint). The demarcation will include the total footprint necessary to execute the work but will aim at minimum disturbance.
- Lay-down areas or construction sites will be located within already disturbed areas or areas of low ecological value and will be pre-approved by the ECO.
- Indiscriminate clearing of any area outside of the construction footprint must be avoided.
- All areas impacted as a result of construction will be rehabilitated on completion of the project.
- An integrated waste management approach must be implemented during construction.
- The middle of the natural drainage line running through the proposed development site where the depth of sand is only 0.9m **must not be mined**.
- Mining must not take place lower than the lowest point in the drainage line.
- Machinery, waste and rubble will not be allowed to accumulate anywhere in the natural vegetation.
- Excavation of the borrow pit must be done in 'blocks' or 'strips' or 'sections' as approved by the ECO at the start -up meeting.

- Once a block is excavated, it should be immediately rehabilitated. The area will be either sloped or levelled (as required in specialist reports) and landscaped.
- Any signs of erosion must be addressed immediately after downpours. Eroded areas should be filled in and the compacted. It should be planted with suitable vegetation.
- If necessary, berms and contours should be constructed to direct storm water away to less susceptible areas.
- Site clearance and excavation / borrow pit waste, agricultural waste and any other waste / litter must not be allowed to pass down the channel.
- Vehicles and other disturbances must be kept out of the altered drainage lines as to prevent any disturbance that could result in erosion.
- Potential preferential storm water flow paths made by the tracks of tipper trucks transporting sand off site must be filled in and compacted. Storm water escape furrows must be constructed and maintained to divert storm water away from the access route all the way to the N14 trunk road.
- Due to the remote location of the proposed borrow pit development, potential nuisance issues such as dust and noise do not have as severe an environmental impact.

This application is for a controlled and pre-determined proposed borrow pit area to be developed on a private farm. The demand for building sand in the construction industry in and around Kakamas is very real and the Applicant's representative needs to legitimately meet this need via his company, CA Bruwer Konstruksie CC.

By authorising this activity, the Department of Mineral Resources (DMR) will be able to exercise measured control over the mining activities undertaken and ensure that with routine environmental control officer visits and reports to the DMR, environmental concerns are addressed and the environment is preserved.

The botanical, freshwater and heritage specialist reports also support the proposed development.

(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 D**

Refer to Appendix D

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

Refer to Appendix N

m) Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR;

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 EMPR as well as for inclusion as conditions of authorisation.

Sand mining should be kept to the open areas (already disturbed by grazing) away from the stream located to the north of the site investigation area - this has already been taken into account to a large extent by shifting the original 5ha footprint south east, closer to the existing crop circle and away from the most significant trees on site (as specified in the botanical assessment). This shift in development footprint areas is indicated when comparing Figure 1 and 2 below.

Excavation must not take place within 1m of the 'dripline'/'canopy line' of any protected, endangered and/or significant trees (as specified in the botanical assessment and captured in the EMPR):

- It is imperative that the mining footprint is placed in the open (already disturbed) areas away from the small seasonal stream (>32 m away) to the north and at least 1 m away from the canopy line (drip-line) of any mature indigenous tree. In fact there should be enough open areas, to avoid impact even on smaller protected species (e.g. young Camel thorn trees). Please refer to Figure 8 underneath, which proposes areas for potential sand mining, which will keep it away from the small stream and away from protected tree species.
- No development should be allowed within 1 m away from the canopy line of any of the *Euclea pseudobenus* trees (in other words no impact on any of these trees), which should be very easy to achieve.
- No impact should be allowed within 1 m away from the canopy line of any mature (>6 m in height) *Vachellia erioloba* (Camel Thorn) trees. In fact, it should be easy to protect all Camel thorn trees and still be able to do sand mining. However, should any Camel Thorn tree have to be removed, a permit must first be applied for.
- No impact should be allowed within 1 m away from the canopy line of any of the mature *Boscia* species (both *Boscia albitrunca* and *Boscia foetida*). Again, this should be easy to achieve. However, should any Shepard's tree have to be removed, a permit must first be applied for.
- No impact should be allowed on any other mature indigenous trees larger than 6 m (e.g. *Ziziphus mucronata*), even though they are not protected species. Large indigenous trees within an arid area such as this, play an important role in the ecology of the area as a whole.
- Sand mining should preferably not exceed 2.5 m in depth (to enable better rehabilitation) and must be kept within the open areas between trees (Figure 8 of Botanical Assessment attached in Appendix K).
- Topsoil must be removed to a depth of 15 – 30 cm and protected and stored separately for re-use during rehabilitation
- Mining must consider rehabilitation and must ensure that enough sand remains to slope / contour the excavated areas back to a more natural state during rehabilitation.
- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan / Programme (EMPR), which must include the recommendations made in this report.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMPR and any other conditions pertaining to specialist studies.
- An application must be made to DENC for a flora permit in terms of the NCNCA with regards to impacts on species protected in terms of the act.
- Access must be limited to routes approved by the ECO.
- Before any work is done, the final construction footprint and access routes must be clearly demarcated (with the aim at minimal width / smallest footprint). The demarcation must include the total footprint necessary to execute the work but must aim at minimum disturbance.
- Lay-down areas or construction sites must be located within already disturbed areas or areas of low ecological value and must be pre-approved by the ECO.
- Indiscriminate clearing of any area outside of the construction footprint must be avoided.
- All areas impacted as a result of construction must be rehabilitated on completion of the project.
- An integrated waste management approach must be implemented during construction.

Freshwater report recommendations:

The clay layer in the proposed site area lies between 0.9m and 3.0m. This clay horizon acts as an aquitard below the permeable sand, above which the shallow groundwater spreads laterally and downhill towards the Hartbees River. Hence the presence of more vegetation around the drainage lines.

Should the proposed sand borrow pit excavation activity punch holes through the clay, the shallow unconfined ground water will move further down through these 'holes' into the secondary, probably more confined aquifer that may be out of reach of the vegetation. Considering the end (post-development) use of the proposed site i.e. as sections of the site are excavated, they will be landscaped and rehabilitated. The long-term or end-state of the proposed development after operational life is for the area to revert to agricultural land use. Ensuring the clay layer is left undisturbed further enables this 'closure' land use. With the after sand is excavated the proposed site would be rehabilitated.

Therefore, the clay layer must be left intact since this would be advantageous to the envisaged agricultural development if enough sand would remain on the clay layer for the crops to take root. It would be advantageous if the clay layer is not excavated but rather left intact during borrow pit operations. This would allow the shallow groundwater to remain available for vegetation instead of escaping further to deeper aquifers.

No activities should be allowed outside of the demarcated mining area. Machinery, waste and rubble should not be allowed to accumulate anywhere in the natural vegetation.

The main threat because of the mining phase is the movement of sediments down the drainage line and into the Hartbees River.

Mining should be done in blocks or sections. Once a block is mined out, it should be immediately rehabilitated. The area should be levelled and landscaped.

Any signs of erosion should be addressed immediately after downpours. Eroded areas should be filled in and compacted. It should be planted with suitable vegetation. Irrigation may be required to establish this vegetation. If necessary, berms and contours should be constructed to direct storm water away to less susceptible areas.

The flow path of the drainage line should remain the same as far as possible, despite excavations.

Similar mining operation require berms and cut-off trenches to divert storm water away from the mining site. The rainfall in this instance is low. Consequently, no such infrastructure is required. Even during a very high rainfall event, it is not foreseen that enough sediments would be transported to pose a threat to the Hartbees River and lower down into the Orange River.

The biggest threat to the Hartbees River during the subsequent end use is the agricultural return flow because of over-irrigation. This is overly evident in so many of these originally dry natural drainage lines turned into agricultural drainage channels. The impact on river's water quality is negative and deleterious. It is therefore expected that the ground moisture levels be scientifically monitored and that irrigation adjusted accordingly, with return flow limited, if not eliminated altogether.

Mining waste, agricultural waste, other waste and litter should not be allowed to pass down the channel.

Vehicles and other disturbances should be kept out of the altered drainage lines as to prevent any disturbance that could result in erosion.

The transport of sand presents special problems, as the laden trucks can imprint deep tracks into the sandy access route and onto the mining area. These tracks constitute preferential storm water flow paths. These should be filled in and compacted. Storm water escape furrows should be constructed and maintained to divert storm water away from the access route all the way to the N14 trunk road. Pooling of storm water should be prevented.

Should a diesel spill occur, the contaminated soil should be lifted and disposed of on a suitable landfill site. From the assessment it is evident that these mitigation measures can be successfully implemented. This is apart from a fundamentally changed drainage line that cannot be ameliorated. Best practice and an appropriate level of management will assure that the aquatic as well as terrestrial environment can be protected and not impacted upon more than is foreseen by the envisaged mining operation and subsequent agricultural development.

n) Aspects for inclusion as conditions of Authorisation.

Any aspects which must be made conditions of the Environmental Authorisation

As per section (m) above, and including additional aspects captured in the EMPR.

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

(Which relate to the assessment and mitigation measures proposed)

Costing for the proposed development have been attached in Appendix P.

Although financial/bank statements have not been provided by Mr CA Bruwer, CA Bruwer Konstruksie CC is an established earthmoving and construction business in the Kakamas region with an existing client base requiring sand.

The feasibility/projections of overheads/expenses and revenue to be generated, should this application be approved, are based on actual current figures of operation of CA Bruwer Konstruksie CC.

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.

This application is for a controlled and pre-determined proposed borrow pit area to be developed on a private farm. The demand for building sand in the construction industry in and around Kakamas is very real and the Applicant's representative needs to legitimately meet this need via his company, CA Bruwer Konstruksie CC.

By authorising this activity, the Department of Mineral Resources (DMR) will be able to exercise measured control over the mining activities undertaken and ensure that with routine environmental control officer visits and reports to the DMR, environmental concerns are addressed and the environment is preserved.

The botanical, freshwater and heritage specialist reports also support the proposed development.

ii) Conditions that must be included in the authorisation

As per section (m) above, and including additional aspects captured in the EMPR.

q) Period for which the Environmental Authorisation is required.

2 to 5 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.

Refer to Appendix Q (Declaration of the Applicant)

s) Financial Provision

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

i) Explain how the aforesaid amount was derived.

Figures as provided by the Applicant representative based on cost of labour and earth moving equipment (as per Appendix P).

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).

Figures as provided by the Applicant representative as per Appendix P.

Applicant has signed 'Identification of the Report' page in Appendix P in agreement that financial amounts can be provided for.

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** .

Except for the Applicant representative which is directly affected since this application is to ensure sustainability of his construction and earthworks business, this is a very small-scale operation and does not directly benefit any community in the area. The 2 to 4 existing workers of Mr Bruwer's business who will operate machinery will be ensured on-going work.

Indirect socio-economic impacts relate to the provision of building sand/ material to the wider Kakamas region and subsequent labour provision when customers undertake construction projects.

(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).

None. Refer to specialist report as per Appendix M.

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 **Appendix 4**).

No alternative plot in Alheidt was identified by the Applicant for the proposed development of a sand borrow pit. Within the same plot, Plot 2372, the location of the development footprint has already been shifted based on the specialist assessment's recommendations. In terms of accessibility and the Applicant's representative's earthmoving equipment being in close proximity to the site (thereby reducing the activities carbon footprint and fuel costs).

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). Refer to Appendix O.
- 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). Refer to Appendix O.
- 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)

Refer to Appendices B, C and D.

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)
It was communicated that the end of life use of the proposed development site will be for agricultural (crop circle) use. Currently the land is used agriculturally (for grazing).
- ii) **Volumes and rate of water use required for the operation.**
N/A
- iii) **Has a water use licence has been applied for?**
A water use licence application is in the process of being made by another consultancy, WatsanAfrica.

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). (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....etc....etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)	MITIGATION TYPE (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. 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.. 	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Please refer to Appendix N and O.					

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. (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....etc....etc.).	POTENTIAL IMPACT (e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc....etc...)	MITIGATION TYPE (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. 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..	TIME PERIOD FOR IMPLEMENTATION 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.	COMPLIANCE WITH STANDARDS (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)
Please refer to Appendices N and O.				

i) 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.

Rehabilitation would be according to the biodiversity and freshwater specialist report recommendations.

The objectives of on-going rehabilitation during operation, as well as rehabilitation for final closure of the site, is that stormwater runoff will not be diverted out of the normal flow it would have followed should the proposed development not have taken place.

It was communicated that the end of life use of the proposed development site will be for agricultural (crop circle) use. Currently the land is used agriculturally (for grazing).

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

The land is currently zoned agricultural and surrounding land use (except for two other sand mining developments), is in line with this zoning.

The applicant is the landowner and intends for the land to revert to agricultural land use, post borrow pit closure.

Operation and rehabilitation/closure will be according to the EMPR which includes specialist recommendations which must be adhered to.

Two I&APs, the Department of Agriculture, Forestry and Fisheries, as well as individuals viz. Ms. Christine van Rooyen (who just registered as an I&AP) and an anonymous individual concerned about the Triops spp. (not protected in the region or South Africa).

It was communicated that the end-of-life use of the proposed development site will be agricultural (crop circle) use and the rehabilitation of the mined area accommodated this end-of life use.

Currently the land is used agriculturally (for grazing).

(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.

Rehabilitation would be according to the biodiversity and freshwater specialist report recommendations.

The objectives of on-going rehabilitation during operation, as well as rehabilitation for final closure of the site, is that stormwater runoff will not be diverted out of the normal flow it would have followed should the proposed development not have taken place.

The land is currently zoned agricultural and surrounding land use (except for two other sand mining developments), is in line with this zoning.

The applicant is the landowner and intends for the land to revert to agricultural land use, post borrow pit closure.

Operation and rehabilitation/closure will be according to the EMPR which includes specialist recommendations which must be adhered to.

It was communicated that the end-of-life use of the proposed development site will be agricultural (crop circle) use and the rehabilitation of the mined area accommodated this end-of life use.

Currently the land is used agriculturally (for grazing).

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

The Applicant plans for the land to revert to agricultural use post-sand mining and specific clauses in the EMPR as well as detailed in the specialist reports take cognisance of this 'closure' use.

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

As per Appendix P

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

As per Appendix P 'Identification of the Report' page signed by the Applicant's appointed representative.

Mechanisms for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon, including

- b) Monitoring of Impact Management Actions
- c) Monitoring and reporting frequency
- d) Responsible persons
- e) Time period for implementing impact management actions
- f) Mechanism for monitoring compliance

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY AND TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
Routine Environmental Control Officer site inspections	As per EMPR and environmental authorisation (EA) conditions.	Independent site inspections	Appointed (independent) ECO to undertake compliance inspections; Rectification of non-compliances to be communicated via the operators, as well as directly to the Applicant's representative, Mr C A Bruwer.	<p>Monitoring and Reporting: Minimum of once a month visits.</p> <p>Implementation of Impact Management Actions: 48 hours or as agreed during site start-up meeting.</p>
Quarterly EA and EMPR compliance report	As per EMPR and environmental authorisation (EA) conditions.	Independent site inspections	Appointed (independent) ECO to undertake compliance inspections; Rectification of non-compliances to be communicated via the operators, as well as directly to the Applicant's representative, Mr C A Bruwer.	<p>Monitoring and Reporting: Minimum of once a quarter report.</p> <p>Implementation of Impact Management Actions: 48 hours or as agreed during site start-up meeting.</p>

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

Quarterly (every four month from date EA issued).

h) 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.

Verbal communication (only 2 to 4 employees on site).

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

Environmental Control Officer inspections will be required on a twice a month (every second week) basis to ensure that specialist recommendations and preservation of specified flora/trees (or correct process is for tree removal) is adhered to.

i) Specific information required by the Competent Authority

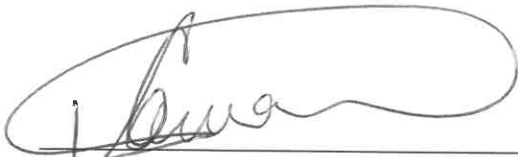
(Among others, confirm that the financial provision will be reviewed annually).

Since the information was not included in this application, the Applicant must submit documentation confirming financial provision for rehabilitation/landscaping of borrow pit upon site 'closure'/reversion to agricultural land use.

2) UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports
- b) the inclusion of comments and inputs from stakeholders and I&APs ;
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; 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.



Signature of the environmental assessment practitioner:

ENVIROAFERICA CC

Name of company:

6 MARCH 2019

Date:

-END-