



DRAFT BASIC ASSESSMENT REPORT AND ENVIRONMENTAL MANAGEMENT PROGRAMME

APPLICANT:
DEPARTMENT OF ENVIRONMENT AND NATURE CONSERVATION
NORTHERN CAPE

**PROPOSED REMOVAL OF THE EARTH BERM WITHIN THE LITTORAL ACTIVE
ZONE OF THE ORANGE RIVER ESTUARY, ALEXANDER BAY, NORTHERN CAPE.**



WITHERS ENVIRONMENTAL CONSULTANTS

DEA Ref No.:14/12/16/3/3/1/831
NEAS Ref No.: DEA/EIA/0001688/2013

November 2013

Proposed Removal of the Earth Berm within the Littoral Active Zone of the Orange River Estuary, Alexander Bay, Northern Cape

Applicant:



Department of Environment and Nature Conservation
Northern Cape

DRAFT BASIC ASSESSMENT REPORT

For public comment by 16 January 2014

PROPOSED REMOVAL OF THE EARTH BERM WITHIN THE LITTORAL ACTIVE ZONE OF THE ORANGE RIVER ESTUARY, FARM RE/625, ALEXANDER BAY, NORTHERN CAPE

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Appendix A: Figures and Maps

- Figure 1:** Google Image of the Site and Preferred Alternative on Location A, B and C, on Farm Rem/625, Orange River Estuary.
- Figure 2:** History of the degradation of the Orange River Mouth (Source: Bornman et al 2005.)
- Figure 3:** Design Alternative 1 – Proposed removal of the culverts placed in the berm on Farm Rem/625, Orange River Estuary.
- Figure 4:** Culverts were installed in the causeway approximately 700 m to the east of the first breach on Farm Rem/625, Orange River Estuary.
- Figure 5 and Table 1:** Google Earth map and Table indicating co-ordinates along the proposed route for the removal of the berm (Location A) on Farm Rem/625.
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Appendix B: Photographs

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Appendix E: Public Participation

- E1:** Pro-active Interested and Affected Party List (November 2013)
- E2:** Newspaper advertisement and notice board content advertising the availability of the Draft Basic Assessment Report and Environmental Management Programme
- E3:** Background Information Letter sent to I&APs and Authorities informing them of the availability of the DBAR and DEMPr (Afrikaans and English). (*Proof will be included in the Final BAR*)

Appendix F: Impact Assessment

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Appendix H: Details of EAP and expertise

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Appendix J: Additional Information

- J1** Application Form to conduct a Basic Assessment Process submitted to DEA.
- J2** Acknowledgement of receipt and acceptance of application from DEA (8 May 2013).
- J3** Reference List

LIST OF ABBREVIATIONS

Alexkor State Owned Company Limited	ALEKKOR SOC LTD
Compact Disk	CD
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	CARA
Draft Basic Assessment Report	DBAR
Department of Environmental Affairs	DEA
Department of Environment and Nature Conservation: Northern Cape	DE&NC
Department of Environmental Affairs and Development Planning:	DEA&DP
Department of Water Affairs	DWA
Directorate of Parks and Wildlife Management	DPWM
Environmental Assessment Practitioner	EAP
Environmental Control Officer	ECO
Environmental Management Plan	EMP
Environmental Management Programme	EMPr
Final Basic Assessment Report	FBAR
Hectare	Ha
Heritage Northern Cape	HNC
Interested and Affected Parties	I&APs
Land Use Planning Ordinance (Ordinance 15 of 1985)	LUPO
Mineral Petroleum Resources Development Act, 2002 (Act 28 of 2002)	MPRDA
NAMDEB Diamond Corporation (Pty) Limited.	NAMDEB
Namibian Ministry of Environment and Tourism	NA-MET
National Department of Agriculture, Forestry and Fisheries	DAFF
National Environmental Management Act, (Act 107 of 1998)	NEMA
National Environmental Management Protected Areas Act, 2003 (Act No. 57 of 2003) NEMPAA	
National Water Act, 1998 (Act No. 36 of 1998)	NWA

Notice of Intent to Develop	NID
Orange River Mouth	ORM
Orange River Mouth Interim Management Committee	ORMIMC
Previously Disadvantaged Individual	PDI
Provincial Spatial Development Framework	PSDF
Republic of South Africa	RSA
Sida !hub Communal Property Association	CPA
Spatial Development Framework	SDF
Strategic Integrated Projects	SIPS
Withers Environmental Consultants	WEC



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

File Reference Number:

Application Number:

Date Received:

Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

Kindly note that:

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **1 September 2012**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. **Two (2) colour hard copies and one (1) electronic copy** of the report must be submitted to the competent authority.
15. Shape files (shp) for maps must be included on the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES

NO

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

1. PROJECT DESCRIPTION

a) Describe the project associated with the listed activities applied for

(i) History and Status of the Application Area

The applicant, Department of Environment and Nature Conservation (DE&NC) and Alexkor State Owned Company (SOC) Limited (hereafter referred to as "Alexkor") propose to restore historical environmental disturbances that occurred in the South African section of the Orange River Mouth (ORM)/Estuary, Alexander Bay, Northern Cape, namely the removal and rehabilitation of the flood attenuation berm constructed within the flood plain of the southern portion of the Orange River between 5km upstream of the ORM and the ORM (**Figure 1**). The rehabilitation will also include the rehabilitation of the agricultural fields located over original flood channels and their associated wetlands of the Orange River which were protected from flooding events by the berm. It is also intended to breach the sand berm of the flood channel to the south of the Orange River Mouth. The property was previously owned by the mining company Alexkor. Alexkor has relinquished their mining right on Farm Rem/625 that falls within the Orange River Mouth Transboundary Ramsar Site (ORMTRS) and is now responsible for partial closure and rehabilitation of all disturbances in terms of the Mineral Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA). According to the Land Claim Settlement Agreement (Case Number 151/1998) between Alexkor and the Sida !hub Communal Property Association (CPA), Alexkor will be responsible for all historic disturbances. Although the DE&NC is the applicant in this application, the **responsibility** for the proposed EIA process in this application is to be undertaken by Alexkor, as set out in the Land Claim Settlement Agreement.

The Orange River Estuary forms part of the ORMTRS. The site is approximately 10 km from the Ernest Oppenheimer Bridge to the ORM and covers 2000 ha of the ORMTRS. It is a coastal wetland of international importance located at the international border between the Republic of South Africa (RSA) and Namibia. A Ramsar wetland was initially defined as one that supports appreciable numbers of globally and regionally important waterbird species.

The ORMTRS was designated a Ramsar site because it fulfilled the following criteria:

- It is an example of a rare wetland in the biogeographical region.
- It supports rare, vulnerable or endangered species.
- It supports substantial numbers of individuals from particular groups of waterfowl, indicative of wetland values, productivity or diversity.
- It regularly supports 1 % or more of the individuals in a population of one species or subspecies of waterfowl, indicative of wetland productivity and diversity

As part of its obligations in terms of the Convention on Wetlands of International Importance especially as Waterfowl Habitat (signed at Ramsar in Iran in 1971), to which the RSA became the 5th contracting party in 1975, the ORM has been placed on the Montreux Record of Wetlands Under Threat.

It is the intention of the Department of Environmental Affairs (DEA) to ensure that the ORM is removed from the Montreux Record. The area will stay on the Montreux Record until the following major mitigation measures are in place:

- Decommissioning of the oxidation ponds used for the disposal of sewage from Alexandria Bay;
- Removal of causeway (berm) that is resulting in the degradation of the estuary over time (**part of this application**);
- Opening of the channels feeding into the salt marsh (**part of this application**)
- Proclamation of the site as a protected area in terms of National Environmental Management Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA)
- Appointment of a management authority

When the above issues have been addressed a request will be sent by the management authority of the Ramsar secretariat via DEA to delist the site from the Montreux Record.

Collaboration between RSA and Namibia is in process to list the site as a Transboundary Ramsar site within Namibia and RSA. Concerns were raised that the RSA side first needs to be delisted from the Montreux Record before the area can be listed as a single Transboundary Ramsar site otherwise the Namibian portion will also be listed on the Montreux Record. Both these issues will be addressed as part of the tasks to take place post proclamation (Mr Stanley Tshitwamulomoni, DEA Biodiversity Conservation-Ramsar Administrative Authority).

The ORM may lose its status as a Ramsar site unless the condition of the salt marsh on Farm Rem/625 can be improved by the required restoration. Almost all the challenges facing the site have been resolved. The protected status of the ORM will enable the DE&NC and Managing Entities to begin managing and rehabilitating the wetland.

The South African Section of the Ramsar site was previously owned and managed by Alexkor who have managed the Ramsar site on an ad hoc basis for many years. Following a land claim by the CPA the Richtersveld community was reinstated with the right to ownership of the land (including Farm Rem/625) on the RSA section of the Ramsar site. In collaboration with the DE&NC, a proposal has been put forward to have the Ramsar site and adjoining areas declared as a Nature Reserve. Formal acceptance of this proposal and proclamation is still pending but is likely to pave the way for more effective management of the site.

The wetland on the Namibian side of the Ramsar site forms part of a large protected area— Sperrgebiet National Park excluding only the townlands of Oranjemund transferred to the Namibian government after restoration to its original condition (MET(Ministry of Environment and Tourism), 2006). The MET are therefore now formally responsible for the management of the Namibian section of the Ramsar site.

The first dykes (berms) were constructed in 1974 to protect Alexkor agricultural land from flooding. The dykes cut off two flood channels that used to extend southwards into the salt marsh (CSIR, 1991) thus reducing flood flow to the salt marsh. At present sewage oxidation ponds exist within these non-operational channels. The extension of the dyke along the southern river bank towards the mouth mainly served to provide vehicular access to the beach. This section of dyke is elevated to ± 3 m above mean sea level (msl), i.e. about 1.5 m above the adjacent salt marsh (CSIR, 1991). These measures initially cut off major flood and tidal channels from the river. These alterations to the estuary are believed to be one of the primary reasons for the collapse of the salt marsh habitat on the South African section of the Ramsar site (Bornman *et al.*, 2005). Refer to **Figure 2** for the history of the degradation of the Orange River Mouth (Source: Bornman *et al.*, 2005)

This situation was slightly improved in June 1995, when a channel through the causeway was opened near the mouth. Despite this, flow to the salt marsh is still restricted, preventing the wetland from being periodically flushed by fresh water from the Orange River during times of flood and by back-flooding during winter months when the natural closure of the mouth would allow for fresh water to flood the wetland.

This periodic flushing of the wetland by fresh water is necessary in order to leach salt from the soil which builds up over time as result of high tides and heavy seas pushing salt water into the wetland.

This restriction has probably contributed to the significant die-back of marsh vegetation. The causeway prevented any such flushing taking place, to the extent that the salinity of the soil increased to such a degree that the salt marsh had all but disappeared on the southern side of the causeway (Eco-Africa, 2006 as cited in Macfarlane, D.M., 2013).

In response to the need to address these impacts, a Working for Wetlands project was initiated in 2005. The project was designed in two phases, namely:

- Interventions designed as part of the initial phase of the project were designed to improve the flow of water into the wetland during back-flooding (induced or natural) and then back out again, allowing it to take salts with it, rather than stagnating and re-depositing them in the wetland (Eco-Africa, 2006 as

cited in Macfarlane, D.M., 2003). This included the planned excavation of four breaches in the causeway to allow for water to flow/drain through it at strategic points.

- The next phase of the project entailed the creation of additional breaches and canals to further improve the flow of water into, and the drainage of water out of the wetland. The objective being to ensure that by the time artificial control over flooding/back-flooding does take place, the necessary breaches and channels are in place to ensure the desired effects are achieved (Eco-Africa, 2006). While much of the work was carried out, the two uppermost breaches were not made due to the need to first rehabilitate the oxidation ponds previously used by Alexkor. Subsequent to rehabilitation activities, many of the trenches have become filled with windblown dust. While the existing planning documents produced provide a sound basis to inform further rehabilitation planning, this needs to be reviewed in the light of knowledge from previous rehabilitation and activities undertaken. The option of using machinery for excavating the main breaches should also be considered as this is a much more cost-effective option than manual labour. This needs to be balanced with the need for employment opportunities within local communities.



Photograph 1: An example of a break through the causeway allowing water to flow into the desertified marsh from the main Orange River channel.

Source: Shaw, GA. 2007. Rehabilitation of the Orange River Mouth Saltmarsh: Seed, wind and sediment characteristics.

Dykes were also constructed by NAMDEB Diamond Corporation (Pty) Limited. (NAMDEB) on the north bank in 1974 and reinforced in 1988 (CSIR, 1991), to protect the golf course from flooding. The effects of these dykes are regarded as less significant as flows are not cut off to any significant wetland habitat.

The proposed project includes activities to be undertaken on three locations within the littoral active zone of the Orange River Estuary. For ease of discussion in this report, the project associated with the listed activities is referred to as **Location A, B and C**. Please refer to **Figure 1, 5, 6 and 7**.

Location A: The proposed removal of the earth berm on Farm Re/625 within the littoral active zone of the Orange River Estuary. The management objectives of the proposed work to be undertaken at Location A is to improve floodwater flows into the degraded salt marsh area in order to promote restoration of the degraded salt marsh habitat and to limit impacts from adjacent mining operations (windblown sand and silt from the southern workings) and through appropriate restoration strategies. The preferred design alternative is to remove the berm on Farm Rem/625 (as indicated in **Figure 1 and 5**) and the design alternative 1, is to only remove the culverts placed in the berm near the mouth (**Figure 3**).

Location B: Proposed construction of a berm on Farm Re/625 to protect the lower lying areas of the northern, central sectors of Alexander Bay town, and especially the rugby and sports grounds and the access road to the mouth area (**Figure 1 and 6**).

Location C: Proposed artificially breaching of the sand berm across the flood channel to the south of the Orange River Mouth. The sand berm that has developed in the southern, flood meander channel of the Orange River near its mouth also needs to be artificially breached from time to time to reduce the salinity levels that are currently building up in this cut-off channel. These high salinity levels are having a devastating impact on the ecology of this section of the estuary (**Figure 1 and 7**).

Please refer to **1b)** below for the listed activities associated with the project activities described above.

(ii) History of Mouth Breaching

Observed positions of the estuary mouth from 1937 to 1990, obtained from aerial photographs and topographical surveys indicate that the mouth can be located at the northern bank or the southern bank of the estuary (CSIR, 2011a as cited in Macfarlane, D.M., 2013). The location of the mouth is believed to have a major influence on the salinity of the water reaching the salt marsh on the south bank near the mouth. When the location of the mouth is at the southern position, considerable amounts of seawater enter the area at spring tides (CSIR, 2011a as cited in Macfarlane, D.M., 2013). The location of the mouth has been strongly influenced by the position of previous mouth breaching (artificially or natural). Artificial breaching was alternatively undertaken on the north and south sides of the river by NAMDEB and Alexkor, respectively. Mouth opening was undertaken using dredgers to cut through the sand berm and began soon after the mine opened and continued until 1968 when higher base flows maintained by the Vanderkloof Dam reduced the frequency of mouth closures. The opening was done mainly to reduce the impacts of floods and to maintain the quality of the water supplied to the towns and mines from the groundwater in the alluvial aquifer beneath the floodplain. Ongoing manipulation of the frontal dunes takes place to maintain access for fishing and to prevent mouth movement. These activities have contributed to reducing the extent and duration of flooding of the salt marsh, an important process to provide water to, and as a means to decrease high salinities in the salt marsh regions. Indeed, mouth closure may be the only mechanism for inundating the elevated saltmarsh areas in the Orange River Estuary in future due to the reduction in major flood events (Van Niekerk *et al.* 2003, Van Niekerk *et al.* 2008 as cited in Macfarlane, D.M., 2013).

(iii) Recommendations for Mouth Breaching and Removal of the Berm from Previous Studies

This application for restoration activities in the Orange River Mouth forms part of the management objectives of a larger Management Plan for the Orange River Mouth Ramsar site, i.e. *Strategic Management Plan for the Orange River Mouth Ramsar site by Macfarlane, D.M. (2013)*. It is important to learn from previous studies undertaken in the Orange River Estuary. In a report by CSIR dated 2011 as cited in Macfarlane, D.M., 2013, preliminary recommendations were made to remove sections of the causeway (berm) and enlarge and deepen the existing breach in the causeway which is close to the mouth. Large volumes of water are being forced through the breach during spring high tide. Outflows take place more slowly through the restricted opening, causing pooling of water on the floodplain. Deposition of fine sediment in the channel restricts neap tidal flow and results in pools of water on the floodplain. The causeway could also be breached east of the existing breach (at the old water level recorder) to facilitate drainage of the floodplain. Culverts were installed in the causeway approximately 700 m to the east of the first breach (**Figure 4**). These culverts need to be removed and the breach enlarged and deepened. Care should be taken not to destroy the intact salt marsh north of the causeway, as this area will function as an important source of seed material to the desertified floodplain through the breach. The existing breach in the northeast should also be enlarged and deepened. A channel should be excavated from this breach to past the causeway (south-north orientated) connecting the gravel road to the main causeway. Care must be taken that this channel follows the course of the old river channels. It might be possible to breach the causeway to the west of the existing breach and also excavate a channel to one of the old channels. This will connect the northeast section to the salt marsh lagoon in the southwest and will provide relatively freshwater to the floodplain. It is important that the breaches close to the mouth be large enough that this additional water can flow out and not accumulate on the floodplain. Please refer to the Environmental Management Plan (EMP) attached as **Appendix G**, for the artificial breaching management programme.

*Please refer to **Appendix J** for list of references.

b) Provide a detailed description of the listed activities associated with the project as applied for

Indicate the number and date of the relevant notice:	Activity No (s) (in terms of the relevant notice) :	Describe each listed activity as per project description ¹ :
R 544, 18 June 2010	Activity No 11 The construction of: (xi) Infrastructure or structures covering 50m ² or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line.	The Proposed Removal of the Earth Berm within the Littoral Active Zone of the Orange River Mouth will encompass the physical removal of the earth berm from the central and western sections of the estuary (Location A). The site is situated adjacent to Farm Rem/625. A portion of the berm that still protects the agricultural fields to the east from inundation of flood waters from the Orange River will need to remain intact.
R 544, 18 June 2010	Activity No 16 Construction of earth moving activities in an estuary or within the littoral active zone or a distance of 100m inland of the high water mark of the sea or estuary, whichever is the greater, in respect of – (iii) embankments.	In addition, to protect the lower lying areas of the northern, central sectors of Alexander Bay, and especially the rugby and sports grounds, a berm will need to be constructed from the existing eastern section of the berm diagonally towards the sports grounds and further to the west to protect the sports fields and other infrastructure from flood waters. Obviously the material removed from the earth berm will be reused on the new berm to be constructed around the low lying areas of the town (Location B).
R 544, 18 June 2010	Activity No 17 The planting of vegetation or placing of any material on dunes or exposed sand surfaces, within the littoral active zone for the purpose of preventing free movement of sand, erosion or accretion.	
R 544, 18 June 2010	Activity No 18 The infilling or depositing of any material of more than 5m ³ into, or dredging, excavation, removing of soil, sand, shells, shell grit, pebble or rock from (i) watercourse; (iii) the seashore; (iv) the littoral active zone, an estuary or a distance of 100m inland of the high water mark of the sea or an estuary, whichever is the greater.	
R 546, 18 June 2010	Activity No 16 The construction of: (iv) infrastructure covering 10 square metres or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a watercourse, excluding where such construction will occur behind the development setback line. (a) In Northern Cape: (i) In an estuary	The sand berm that has developed in the southern, flood meander channel of the Orange River near its mouth also needs to be artificially breached to reduce the salinity levels that build up from time to time within this cut-off channel (Location C). These high salinity levels are having a negative impact on the ecology of this section of the estuary.

2. FEASIBLE AND REASONABLE ALTERNATIVES

“**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives 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.**

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Describe alternatives that are considered in this application as required by Regulation 22(2)(h) of GN R.543. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>Location A: Proposed removal of the earth berm or parts of the berm on Farm Re/625 within the littoral active zone of the Orange River Estuary (Figure 1 and 5).</p> <p>Location B: Proposed construction of a berm on Farm Re/625 (Figure 1 and 6).</p> <p>Location C: Proposed artificially breaching of the sand berm in the Orange River Mouth (Figure 1 and 7).</p>	Refer to linear activities Lat/Long Table below.	
Alternatives		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>Location A: There are no site alternatives for the proposed removal of the berm other than the no-go alternative, as this is an application for authorisation for the removal of a specific berm on the site.</p> <p>Location B: There are no site alternatives for construction of the proposed new berm other than the no-go alternative. The proposed site for the new berm is specific, to ensure the protection of lower lying areas of the northern, central sectors of Alexander Bay, and especially the rugby and sports grounds from flood waters.</p> <p>Location C: There are no site alternatives for the proposed artificially breaching of the sand berm other than the no-go alternative, as this is the breaching of a specific sand berm.</p>		
Alternative 3 – NA		
Description	Lat (DDMMSS)	Long (DDMMSS)

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In the case of linear activities:

Alternative: Latitude (S): Longitude (E):
 Alternative S1 (preferred)

Location A: The proposed removal of the earth berm:

• Starting point of the activity	28°35'18.17"S	16°28'45.67"E
• Middle/Additional point of the activity	28°36'45.29"S	16°28'16.07"E
• End point of the activity	28°38'8.59"S	16°27'46.72"E

Location B: The proposed construction of a berm:

• Starting point of the activity	28°35'17.49"S	16°28'46.86"E
• Middle/Additional point of the activity	28°35'39.09"S	16°28'45.07"E
• End point of the activity	28°36'15.54"S	16°28'43.66"E

Location C: The proposed artificially breaching of a sand berm

• Middle point of the activity	28°37'57.59"S	16°27'30.58"E
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For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

Please refer to attached **Table 1** and **Figure 5**: Google Earth map indicating co-ordinates along the route for Location A.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A.

b) Lay-out alternatives

N/A

c) Technology alternatives

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

Alternative 1 (preferred alternative)		
Location A: Remove the entire causeway/berm.	Lat (DDMMSS)	Long (DDMMSS)
	28°36'45.29"S	16°28'16.07"E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Location A: Only remove the culverts that were placed in the	28°37'49.51"S	16°27'57.67"E

causeway/berm (Figure 3) and small intermittent sections of the berm. Care should be taken not to destroy the intact salt marsh north of the causeway, as this area will function as an important source of seed material to the desertified floodplain through the breach.		
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e) No-go alternative

<p>Location A: If the no-go alternative is pursued, the berm will not be removed and the salt marshes will continue to degrade. A high negative impact (which would be irreversible in the long term) is envisaged should the no-go alternative, viz., where the status quo would remain, be implemented.</p> <p>Location B: If the no-go alternative is pursued, the berm will not be constructed.</p> <p>Location C: If the no-go alternative is pursued the sand berm that has developed in the southern, flood meander channel of the Orange River near its mouth will not be breached and the salinity levels will continue to be high and built up from time to time. The high salinity levels will have negative impacts on the ecology of the Orange River estuary.</p>

Paragraphs 3 – 13 below should be completed for each alternative.

3. PHYSICAL SIZE OF THE ACTIVITY

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Alternative A1² (preferred activity alternative)
 Alternative A2 (if any)
 Alternative A3 (if any)

Size of the activity:

	m ²
	m ²
	m ²

or, for **linear activities:**

<p>Location A: The berm to be removed is ± 5500m/ 5.5km long. Location B: The new berm to be constructed ± 2000m/ 2km long.</p>
--

Alternative:

Alternative A1 (preferred activity alternative)

Alternative A2 (**Design Alternative**)

Alternative A3 (if any) **No Go**

Length of the activity:

<p>Location A: ± 5500m long 5.5m Width; 1.5m high Location B: ± 2000m long 5.5m Width; 1.5m high</p>
<p>10m x 4 culverts to be removed in berm near the mouth and remove intermittent sections of the berm</p>
N/A

b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur): N/A

Alternative:

Alternative A1 (preferred activity alternative)
 Alternative A2 (if any)

Size of the site/servitude:

	N/A m ²
	N/A m ²

² "Alternative A.." refer to activity, process, technology or other alternatives.

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Alternative A3 (if any)

N/A m²

4. SITE ACCESS

Does ready access to the site exist?

YES

NO

If NO, what is the distance over which a new access road will be built

m

Describe the type of access road planned:

No new access road is planned; however access to the berm will be from the northern section of the berm. The construction vehicles will only be allowed to drive on the berm/causeway during the removal of the berm and on the existing R382 leading to the berm.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as **Appendix A**. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWA);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in **Appendix A**.

8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under **Appendix B** to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

9. FACILITY ILLUSTRATION – N/A

A detailed illustration of the activity must be provided at a scale of at least 1:200 as **Appendix C** for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

10. ACTIVITY MOTIVATION

Motivate and explain the need and desirability of the activity (including demand for the activity):

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
The property was previously owned by the mining company Alexkor. Alexkor has relinquished their mining right on Farm Rem/625 and is now responsible for partial closure and rehabilitation of all disturbances in terms of the MPRDA. According to the settlement agreement Alexkor will be responsible for all historic disturbances. Although the DE&NC is the applicant in this application, the costs for the proposed work in this application are to be paid by Alexkor.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
Northern Cape Provincial Government is in the process of developing a Provincial Spatial Development Framework (SDF) for the Province. The goal of such a PSDF is to plan for the sustainable future expansion of the Province (development potential, social upliftment and job creation and conservation of representative environments. The Namakwa District SDF will be aligned to and compliment by the Provincial SDF. The District SDF will also guide and promote development in the District. The proposed removal of the berm will not only provide certain job opportunities but will lead to the improvement of the natural functioning of the Orange River estuary.			
(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
N/A			

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<p>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible Municipal IDP and SDF?).</p>	YES	NO	Please explain
Please refer to 2a above.			
<p>(d) Approved Structure Plan of the Municipality</p>	YES	NO	Please explain
N/A – only structures for rehabilitation purposes will be implemented and/or removed.			
<p>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</p>	YES	NO	Please explain
<p>The proposed project aims to restore degraded and eroded wetland systems to improve and protect aquatic ecosystems and biodiversity. In other words, the project would enhance existing environmental management priorities for the area. This application for the removal and rehabilitation of the berm forms part of a larger <i>Strategic Management Plan for the Orange River Mouth Ramsar site</i> and the vision for the Orange River Estuary (Macfarlane, D.M. (2013).</p>			
<p>(f) Any other Plans (e.g. Guide Plan)</p>	YES	NO	Please explain
<p>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</p>	YES	NO	Please explain
<p>The DEA, DE&NC, the Namibian Ministry of Environment and Tourism (NA-MET): Directorate of Parks and Wildlife Management (DPWM) is currently engaging with the Richtersveld Municipality to ensure that IDPs, SDFs and other planning frameworks incorporate biodiversity priorities into IDPs & SDFs of Local and District Municipalities.</p>			
<p>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</p>	YES	NO	Please explain
Please refer to point 15 below.			
<p>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	YES	NO	Please explain
N/A – No services will be required to undertake the rehabilitation work.			

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<p>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</p>	YES	NO	Please explain
<p>N/A – The proposed rehabilitation project does not have any infrastructure requirements. Comment on the project from the Municipality will be included in the Final BAR.</p>			
<p>7. Is this project part of a national programme to address an issue of national concern or importance?</p>	YES	NO	Please explain
<p>It is the intention of the Department of Environmental Affairs (DEA) to remove the Orange River Mouth from the Montreux Record once it has been assured that the status has been rectified. The area will remain on the Montreux Record until such time as the following major mitigation measures have been undertaken:</p> <ul style="list-style-type: none"> • Decommissioning of the sewage oxidation ponds • Removal of the causeway that is resulting in the degradation of the estuary (part of this application) • Opening of the channels feeding into the salt marsh (part of this application) • Proclamation of the site as a protected area in terms of NEMPAA • Appointment of a management authority <p>When the above activities have been addressed a request will be sent by the management authority to the Ramsar secretariat via DEA to delist the site from the Montreux Record. Collaboration with Namibia is in process to list the site as a Transboundary Ramsar site. Concerns were raised that the SA side first needs to be delisted from the Montreux Record before the area can be listed as a single Transboundary Ramsar site otherwise the Namibian portion will also be listed on the Montreux Record. Both of these issues will be addressed as part of the tasks to take place post proclamation (Mr Stanley Tshitwamulomoni, DEA Biodiversity Conservation-Ramsar Administrative Authority).</p> <p>The Department of Environment and Nature Conservation: Northern Cape (Contact person: Mr A Mabunda, Chief Director: Biodiversity Management Services) is the applicant for the proposed removal of the earth berm. Mr A Mabunda is also the chairperson of the Orange River Mouth Interim Management Committee (ORMIMC).</p> <p>As part of its obligations in terms of the Convention on Wetlands of International Importance especially as Waterfowl Habitat (signed at Ramsar in Iran in 1971), to which the Republic of South Africa (RSA) became the 5th contracting party in 1975, the Orange River mouth has been placed on the Montreux Record of Wetlands Under Threat.</p> <ul style="list-style-type: none"> • The Orange River Mouth may lose its status as a Ramsar site unless the condition of the salt marsh can be restored. Almost all the challenges facing the site have been resolved. The two major obstacles remain the removal of the berm and the opening of the channels feeding into the salt marsh, and the decommissioning and rehabilitation of the sewage oxidation ponds. <p>The protected status of the Orange River Mouth will enable the DENC to begin managing and rehabilitating the wetland.</p>			
<p>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</p>	YES	NO	Please explain
<p>The activities applied for are for the restoration of degraded and threatened wetland systems within the Orange River estuary.</p>			

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9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
Yes, Alexkor is legally bound by the Land Claim Settlement Agreement between it and the Richtersveld Community to restore the degraded salt marshes. The proposed removal/breaching of the earth berm and the opening of the channels feeding into the salt marsh are necessary to facilitate in the restoration of the degraded salt marshes within the estuary.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	NO	Please explain
See point 7 above. The benefits of this project will have a long term positive, cumulative environmental impact on the estuary compared with the minor short term negative impacts that will arise from construction activities and from the loss of the protection and use of the current grazing lands.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain
The proposed restoration activities will set an outstanding example for the local community and Municipality as well as internationally, that restoration of degraded areas is important and if not undertaken, will result in highly negative impacts for the environment (physical, abiotic, biotic, social, economic) and if not done could even result in the declassification of the Orange River Mouth as a Ramsar Site. The DEA, DE&NC, the Namibian Ministry of Environment and Tourism (NA-MET): Directorate of Parks and Wildlife Management (DPWM) is currently engaging with the Richtersveld Municipality to ensure that biodiversity priorities are incorporated into IDPs & SDFs of Local and District Municipalities.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO	Please explain
Whilst the rehabilitation work will improve the ecological and hydrological functioning and state of the Orange River Mouth and its estuary, the existing agricultural fields that have been developed landward of the berm belong to the Alexandria Bay community. It should be noted that not all the fields will be removed, as those to the east (near the old dairy will remain intact. The benefits of removing the berm will far outweigh the potentially positive economic impacts of retaining the affected agricultural fields.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO	Please explain
N/A			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
The proposed activities will not contribute to any of the 18 Strategic Integrated Projects. Wetland rehabilitation is not included in any of these 18 SIPS. The proposed project will not add to any social or economic infrastructure as its objective is to rehabilitate, conserve and manage an important area that is of international concern and importance.			

15. What will the benefits be to society in general and to the local communities?	Please explain
<p>The area around the Orange River Mouth is very sparsely populated and access to the coast and estuary is controlled by diamond mining concession holders NAMDEB (Pty) Ltd in Namibia and Alexkor in South Africa (Richtersveld Municipality 2009, Skov <i>et al.</i> 2009). The town of Oranjemund is situated on the northern bank of the estuary and has a population of 7 500 (NAMDEB, 2012). The town was previously owned by the mining company with access restricted to employees of NAMDEB, their relatives and persons with pre-application. Alexander Bay, with a population of approximately 1,453 was also a privately owned mining town on the south bank of the estuary, and was until recently, inaccessible to anyone not working on or directly associated with Alexkor.</p> <p>Following a successful land claim by the CPA, the town is no longer a high security area and permits are no longer required to access the town. Access to the Orange-Senqu Estuary from the south bank is now also permitted, but as few people are aware of this fact, tourism in this area is almost non-existent. South of Alexander Bay, the nearest town is Port Nolloth, with a population of 8,652 persons, where mining, fishing and mariculture are listed as the main economic activities (Richtersveld Municipality, 2009). Fish processing establishments in both Port Nolloth and Luderitz are reported to be struggling due to poor catches. Diamond resources in the area have been significantly depleted and both NAMDEB and Alexkor have scaled down their operation dramatically. Aligned with this, has been the process of converting the town of Oranjemund into a formally proclaimed town with the recent election of a Town Council. The same is destined for Alexandria Bay. Tourism, although low key at present, is a potential growth industry and looked towards as a future alternative to mining and fishing.</p> <p>In summary, the direct socio-economic benefits from the estuary are currently very limited to recreational use of the area by residents and visitors to Alexander Bay and Oranjemund, who use the area for passive recreation (walking, camping, picnicking) and recreational angling. Biophysical changes to the estuary have almost certainly had some negative impact on recreational use (fishing, bird viewing). However, in future, with the downscaling in mining activity and reduction in commercial fish catches, it is expected that emphasis will shift towards ecotourism as the major economic activity in the region. In line with this the Namibian portion of the Ramsar site has been included in the recently established Sperrgebiet National Park in Namibia while plans are also in an advanced stage to have the South African section of the Ramsar site formally protected. The proposed removal of the berm and the opening of the channels feeding into the salt marsh will have a significant positive impact on restoring the natural functioning of the Orange River mouth and estuary, which will restore the confidence in the Ramsar site and the continued conservation of this area. As such, the southern portion of the estuary of the Orange River can also become an ecotourism destination. As such, Alexandria Bay could expect concomitant socio-economic benefits from the proposed project.</p>	
16. Any other need and desirability considerations related to the proposed activity?	Please explain
17. How does the project fit into the National Development Plan for 2030?	Please explain
NA	
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.	
<p>The vision of the project is to facilitate the protection, conservation, rehabilitation and sustainable use of the estuary of the Orange River, in accordance with national policies and commitment to international conventions and regional relationships (with other countries), as anticipated in terms of Section 23 of NEMA. The proposed removal of the berm and the opening of channels to the salt marshes, the rehabilitation of the degraded environment (sewage maturation ponds, prevention of windblown sediments from old mine workings into the estuary), and the formal principles of NEMA are adhered to. In addition, the above activities will ultimately promote long term sustainable development of the estuary by promoting the biophysical well-being, socio-economic upliftment of the inhabitants and conservation of the area, which are the ideals of Section 2 of NEMA.</p>	

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.

The aim of the proposed project is to facilitate the protection, conservation, rehabilitation and sustainable use of wetlands within the estuary of the Orange River in accordance with national policies and commitment to international conventions and the promotion of regional relationships. More specifically the proposed project is in line with Principle 4(r) of Section 2 which notes the requirement of specific management and planning procedures to deal with sensitive and vulnerable ecosystems such as wetlands.

The current Basic Assessment process being undertaken will also provide the inhabitants of Alexandria Bay, government departments and other NGO's and CBOs with adequate and appropriate opportunity for partaking in the public participation process of this project. The Basic Assessment process also promotes the identification, prediction and evaluation of the actual and potential impacts on the biophysical and socio-economic environment of the area. The risks of not doing anything to rehabilitate the estuary (i.e. the "No Go" alternative) are also being considered. The Basic Assessment process will also ensure that the effects of the above proposed activities receive adequate consideration before actions are taken in accordance with an approved EMPr.

11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Environmental Authorisation is to be obtained for the listed activities.	Department of Environmental Affairs (DEA)	Pending
National Environmental Management: Protected Areas Act 2003 (Act No. 57 of 2003)	Once adequate rehabilitation of the wetlands has been achieved, it is the intention to apply for protected area status.	Department of Environmental Affairs (DEA)	To be undertaken in the future
National Water Act, 1998 (Act No. 36 of 1998)	Comment from the Department of Water Affairs will be obtained for the applicability of a Water Use Licence in terms of the Act.	Department of Water Affairs (DWA): Northern Cape	Pending
Occupational Health and Safety (OSH) Act (Act 85 of 1993) as amended	All applicable directives contained within the OSH Act must be implemented by the appointed building/construction contractors.	Department of Labour	All applicable directives contained within the OSH Act must be implemented by the appointed building/construction contractors.
Basic Conditions of Employment Act (Act 75 of 1997)	The appointed building contractors are to adhere to all the relevant requirements of the Basic Conditions of Employment Act (Act 75 of 1997).	Department of Labour	The appointed building contractors are to adhere to all the relevant requirements of the Basic Conditions of Employment Act (Act 75 of 1997).

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Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009)	Comment on this Application has been requested from the DENC.	Department of Environment and Nature Conservation: Northern Cape (DENC)	Pending
National Heritage Resources Act, 1999 (Act 25 of 1999)	Comment on this Application has been requested from Heritage Northern Cape and SAHRA	Heritage Northern Cape SAHRA	Pending

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
m ³	

If YES, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

The earth-fill material removed from the earth berm (at Location A), will be used to construct the proposed new flood protection berm (at Location B). The earth-fill material will be excavated by a mechanical excavator and placed into a dump truck which will transport the fill to the site of the proposed new berm. Fill removed from the berm (at Location A) will also be used to fill in old alluvial diamond mine excavations around Alexander Bay and at the old mine workings within Alexkor. The excavated material from the berm must be assessed for any pollutants.

Where will the construction solid waste be disposed of (describe)?

As described above, as per directives contained in the EMPr (**Appendix G**).

Will the activity produce solid waste during its operational phase?

YES	NO
m ³	

If YES, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

N/A

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

N/A

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

YES	NO
------------	-----------

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO
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If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
-----	----

If YES, what estimated quantity will be produced per month?

m ³

Will the activity produce any effluent that will be treated and/or disposed of on site?

YES	NO
-----	----

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
-----	----

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:	Cell:		
E-mail:	Fax:		

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

N/A

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

YES	NO
-----	----

If YES, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

The activity will not release emissions into the atmosphere other than limited exhaust emissions and dust associated with construction phase activities.
--

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

YES	NO
-----	----

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) Generation of noise

Will the activity generate noise?

YES	NO
-----	----

If YES, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the noise in terms of type and level:

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Noise will only be generated during the construction phase. Noise generation will be limited to the normal construction activities associated with construction vehicles during normal working hours.

13. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water
-----------	-------------	-------------	-------------------------------	-------	--

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

litres	
YES	NO

14. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

N/A

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

N/A

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section?

YES	NO
-----	----

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

Property description/physical address:

Province	Northern Cape
District Municipality	Namakwa District Municipality
Local Municipality	Richtersveld Municipality
Ward Number(s)	Ward 1: Alexander Bay , Beauvallon & Sanddrift Mayor Arthur Jansen is currently the Mayor and the Ward Councillor of Alexander Bay. Other Wards: Ward 2: Eksteenfontein, Lekkersing, Kuboes Ward 3: Sizamele, part of Nollothville and town area in Port Nolloth Ward 4: Part of Nollothville in Port Nolloth, McDougalls Bay also in Port Nolloth
Farm name and number	Farm Re/625
Portion number	-
SG Code	C053000000062500000

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

Current land-use zoning as per local municipality IDP/records:

N/A

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES	NO
-----	----

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1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1: Location A, B and C

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site: : **Location A, B and C**

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input checked="" type="checkbox"/>	2.8 Dune (estuary)	<input checked="" type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1: Location A		Alternative S1 Location B		Alternative S1 Location C:	
	YES	NO	YES	NO	YES	NO
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

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4. GROUND COVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition ^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil / Degraded Salt marsh

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

A permanent Estuarine/ Lagoonal wetland is associated with the Orange River estuary and comprises a degraded salt marsh. The wetland can be described as a delta type river mouth with a braided channel system during low flow months. A permanent wetland is associated with the old cut-off river channels (cut-off by the construction of the flood attenuation berm). One of these old channels has been used for the depositing of sewage effluent generated by the town of Alexander Bay (oxidation ponds). A new sewage treatment works has recently been commissioned for Alexander Bay and it is proposed to rehabilitate these artificial wetlands.

6. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre	Filling station ^H
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential ^A	Church	Agriculture

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Retail commercial & warehousing	Old age home	River, stream or wetland
Light industrial	Sewage treatment plant^A (disused)	Nature conservation area
Medium industrial ^{AN}	Train station or shunting yard ^N	Mountain, koppie or ridge
Heavy industrial ^{AN} (Mining)	Railway line ^N	Museum
Power station	Major road (4 lanes or more) ^N	Historical building
Office/consulting room	Airport ^N	Protected Area (Ramsar Site)
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam^A	Sport facilities (rugby field)	Archaeological site
Quarry, sand or borrow pit	Golf course (disused)	Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

N/A

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

The removal of the berm will not impact on the mining of diamonds within the Alexkor mine area.

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
Core area of a protected area	YES	NO
Buffer area of a protected area	YES	NO
Planned expansion area of an existing protected area	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO
Buffer area of the SKA?	YES	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in **Appendix A**. ✓

The site falls within an Important Bird Area (IBA), being part of the Orange River Estuary.

The establishment of formal protected areas on wetlands has been flagged as a priority by Ramsar (Ramsar, 2008). The South African Section of the proclaimed Orange River Ramsar Site was previously owned and managed by Alexkor on an *ad hoc* basis for many years. Following a land claim by the Richtersveld community the community was reinstated with the right to ownership of the land on the South African section of the Ramsar site. In collaboration with the DE&NC a proposal has been put forward to have the Ramsar site and adjoining areas declared as a Nature Reserve. Formal acceptance of this proposal and proclamation is still pending but is likely to pave the way for more effective management of the site.

The wetland on the Namibian side of the Ramsar site forms part of a large protected area - Sperrgebiet National Park excluding only the townlands of Oranjemund which were transferred to the Namibian

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government after restoration to its original condition (MET, 2006). The Ministry of Environment and Tourism (MET) are therefore now formally responsible for the management of the Namibian section of the Ramsar site.

7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

N/A

Will any building or structure older than 60 years be affected in any way?	YES	NO <input checked="" type="checkbox"/>
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO <input checked="" type="checkbox"/>
If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.		

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality - Richtersveld Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

Whilst unemployment figures are not available specifically for the Richtersveld Municipal area, the composite unemployment figure for the district shows an increase in unemployment year on year indicating that economic development **and job creation must be a developmental priority to the municipality**. In the Richtersveld Local Municipality mining is the main economic activity providing most of the employment opportunities in the region. However, employment opportunities in the mining industry have starting to decline due to a decline in mining activity. There is merit for the development of ecotourism opportunities should the Orange River estuary be rehabilitated by the removal of the berm and the opening of the original flood channels.

Table 2: Richtersveld Employment Profile		
Population	Employment Status	Employees
15 083	Employed	2358
	Unemployed	2708
	Not economically active	3208
<i>Richtersveld Municipality IDP 2013-2014</i>		

Economic profile of local municipality:

The Richtersveld Local Municipality falls within the Namakwa District of the Northern Cape Province. The Northern Cape is spatially the largest province in the country, but also has the lowest population and some of the least developed areas in terms of its economic and social development. The population for Richtersveld is estimated at 14 125 people. The municipality is sparsely populated (± 1.4 person/km²), most people are settled in the Port Nolloth area, followed by Alexander Bay, Sanddrift and Kuboes. During the period 1996 – 2007, a population growth increase of 24.2% was experienced in the Richtersveld Municipal area with an accompanying 41.9% increase in the number of households. Indications from the district population suggest that there is a high level of movement out of the district due to job losses (i.e., closure of mines) and the young inhabitants moving out to attend institutes of higher learning elsewhere in the country. This movement also applies to economically active inhabitants. The result is that there are a high proportion of economically inactive people in the district, which in turn compounds poverty levels. The low literacy rate, high levels of unemployment and resultant social problems, such as alcohol and drug abuse and the increase in crime and domestic violence need to be addressed, especially in the disadvantaged areas.

Richtersveld Municipality has a comparative advantage to other municipalities in Namakwa District based on its unique characteristics and combination of resources such as; Agricultural Land, Minerals, Coastline, Orange River and the Richtersveld Transfrontier National Park.

Other characteristics of the region include:

- a) Poverty levels are high, due to high levels of unemployment, and increasing rates of illness (HIV/AIDS and TB)
- b) Communal farming on municipal peri-urban land is creating environmental challenges
- c) A large proportion of income is derived from social grants, with social consequences that are not fully understood and no proactive plans have been put in place.
- d) Local economies of small towns in the municipal area are characterised by weak multipliers, because a great deal of purchasing power is spent in the larger centres, or metropolitan areas situated outside these areas
- e) Due to the arid nature of the area, surface and underground water supplies are insufficient to provide higher levels of infrastructure (such as waterborne sanitation), which creates grievances and resentment
- f) The conditions of life of remote settlements of farm workers tend to be poor, with low mobility, and difficult access to health, education, recreation and shopping amenities
- g) HIV/AIDS levels are reputed to be high, particularly on national transport routes, and mortality rates are already reflecting this
- h) There is an out-migration of skilled people, due to a lack of local economic opportunities
- i) Increasing aridity, due to global warming, may lead to rising unemployment, declining underground water levels, and greater difficulties for commonage farmers
- j) The socio-economic conditions of the municipal area are poor. More than 15,6% of the municipal population earns less than R38 400.00 per annum (or less than R3 200.00 per month) consequently receiving payment for municipal services can be challenging. This in turn can have a negative effect on the sustainability of infrastructure and the delivery of services overall
- k) Generally the population can be regarded as having a high dependency ratio; with 7.39% of the population over the age of 65 and 25% are under 15 years. The latter youth group will be demanding education, housing and jobs in the near future (Richtersveld Municipality 2012. The Richtersveld Municipality Integrated Development Plan)

Level of education:

Approximately 5% of the population has no schooling, and just 1.54% of the population has a higher education, resulting in a shortage of highly skilled people – 58% of the economically active population is classified as unskilled. In 2007, 12.82% of population was unemployed, 45.71% were employed, and 37.34% were not economically active. As a result of the employment situation as well as quality of jobs (skills levels) 74.96% of the population falls within the poverty level. Notably, this feeds into a reliance on the state, with 36% of the households registered as indigent (100% of NDMA, 65% of Khai Ma) and 25% of the population receiving social grants (mostly child support, disability and old age).

The population can be regarded as having a high dependency ratio; with 7.39% of the population over the age of 65 and 25% are under 15 years. The latter youth group will be demanding education, housing and jobs in the near future (Richtersveld Municipality 2012. The Richtersveld Municipality Integrated Development Plan)

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	±R30m		
What is the expected yearly income that will be generated by or as a result of the activity?	R 0		
Will the activity contribute to service infrastructure?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
Is the activity a public amenity?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Machine operators: - 3 Truck drivers: - 4 General employees: - 10 Foreman: - 1		
What is the expected value of the employment opportunities during the development and construction phase?	Don't know		
What percentage of this will accrue to previously disadvantaged individuals?	100%		
How many permanent new employment opportunities will be created during the operational phase of the activity?	Don't know (rehabilitation)		
What is the expected current value of the employment opportunities during the first 10 years?	Don't know		
What percentage of this will accrue to previously disadvantaged individuals?	Don't know		

9. BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

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- a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	Listed as a CBA 1: Irreplaceable Sites. Biodiversity Criteria: The most important areas for biodiversity conservation.

- b) Indicate and describe the habitat condition on site (Refer to Figure A and B below)

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	10%	Water
Near Natural (includes areas with low to moderate level of alien invasive plants)	6%	Saltmarsh
Degraded (includes areas heavily invaded by alien plants)	44%	Gum trees, Degraded Saltmarsh
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	40%	Old agricultural fields

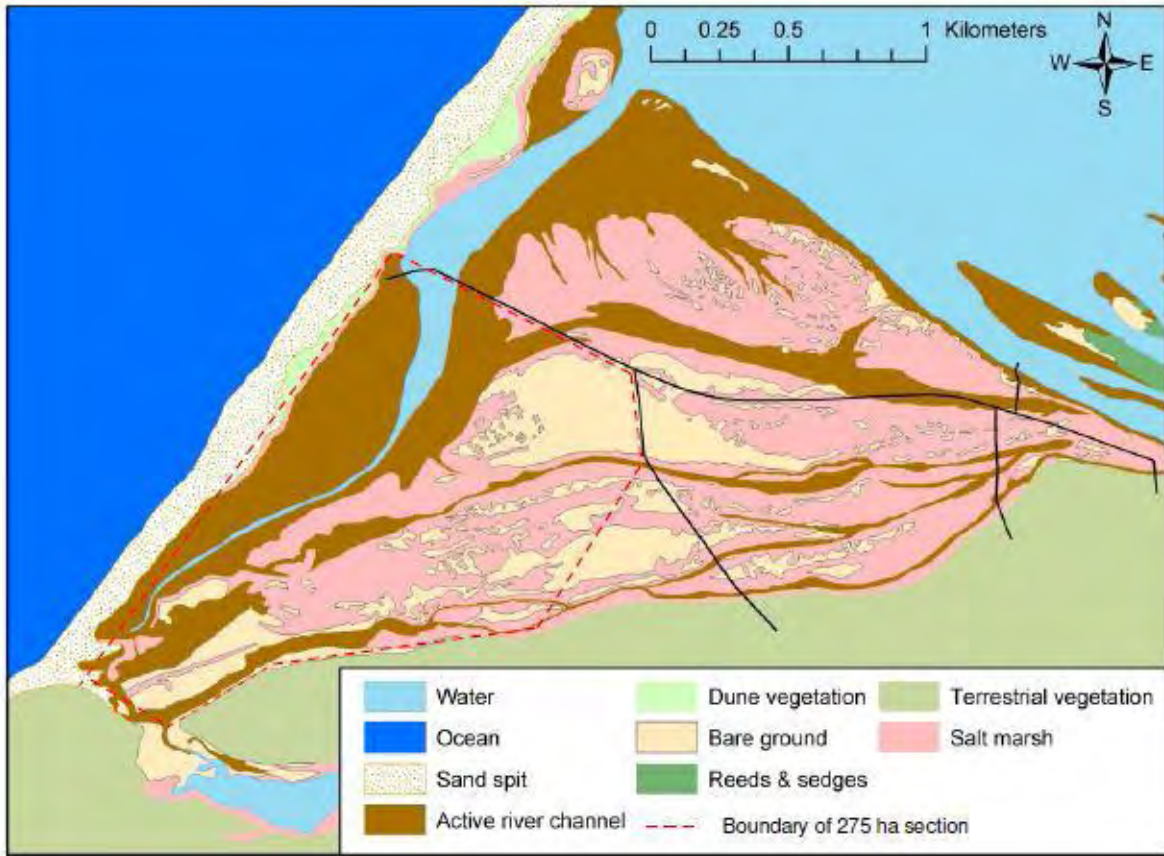


Figure A: Vegetation cover of the Orange River Mouth Floodplain in 1938 (Bornman *et al.*, 2005).

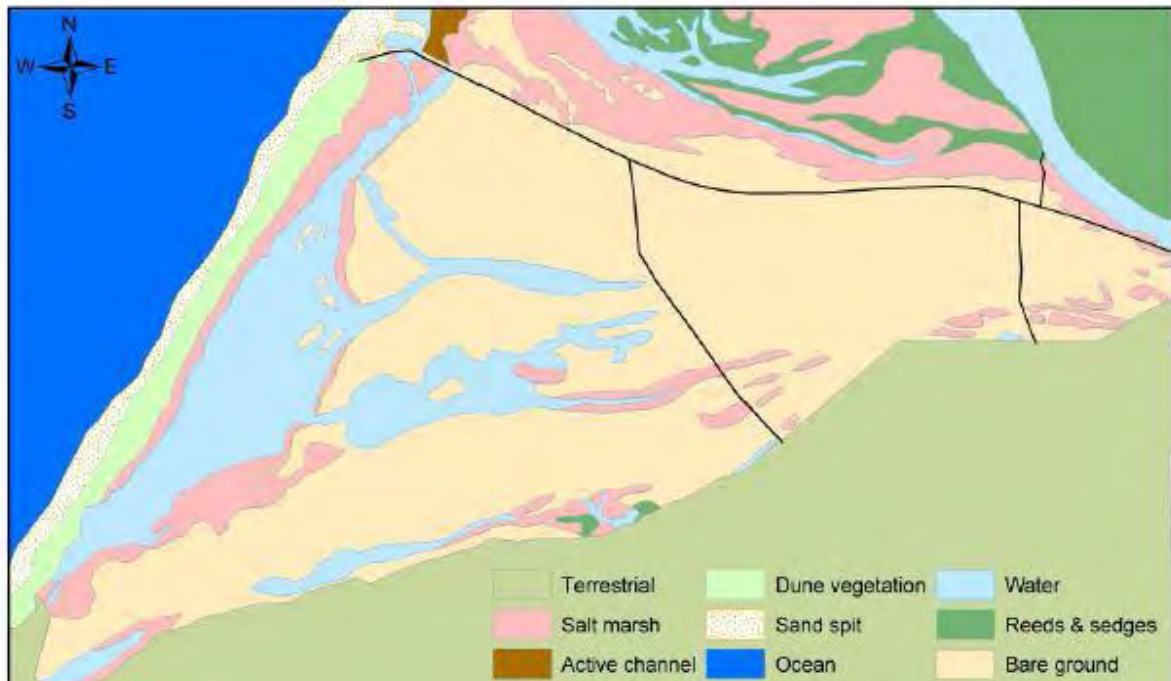


Figure B: Vegetation cover of the Orange River Mouth floodplain in 1997 (Bornman *et al.*, 2005).

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c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems								
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline			
	Endangered									
	Vulnerable									
	Least Threatened	YES	NO	UNSURE	YES	NO	YES	NO		

- d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

The Ramsar site comprises sand banks or channel bars covered with pioneer vegetation, a tidal basin, a narrow floodplain, pans, the river mouth, and a salt-marsh on the south bank of the river mouth (on Farm Rem/ 625). The wetland vegetation includes wetland marshes, saltmarsh, island and bank vegetation. Wetland marsh vegetation and island and bank vegetation consist mainly of freshwater species.

The major vegetation types recognised include the island communities; dominated by *Scirpus littoralis*, *Phragmites australis* and *Sporobolus virginicus*; the peripheral marshland, dominated by *Sarcocornia pillansiae* and *Sporobolus virginicus*; and the *Lycium decumbens* floodplain vegetation.

Species which are tolerant of mildly saline conditions, such as *Scirpus littoralis*, only occur close to the mouth where the intrusion of seawater may influence the salinity level.. The saltmarsh (on Farm Rem/ 625) on the southern bank of the ORM-system adjacent to the mouth is cut off from the rest of the system by the embankment of an access road to the mouth. One of the most striking features of the Orange River mouth is the apparent paucity of invertebrate estuarine fauna.

Birds: The Orange River Mouth is regarded as the sixth most important coastal wetland in southern Africa in terms of the number of waterfowl it supports. The river mouth, mudflats, intrafluvial marshlands, islets near the mouth and adjacent pans provide a sizeable area of sheltered shallow water suitable for concentrations of wetland birds, which use these habitats for breeding purposes or as a stopover on migration routes. The bird population can be as high as 20 000 to 26 000 individuals. Of the 57 wetland species recorded, 14 are listed as either rare or endangered in one or both of the South African and Namibian Red Data Books.

At times the area supports more than 1 % of the world population of three species endemic to southwestern Africa: the Cape cormorant (*Phalacrocorax capensis*), Damara tern (*Sterna balaenarum*) and Hartlaub's gull (*Larus hartlaubii*). On a southern Africa scale the wetland supports more than 1 % of the subcontinental population of blacknecked grebe (*Podiceps nigricollis*), lesser flamingo (*Phoenicopterus minor*), chestnut banded plover (*Charadrius pallidus*), curlew sandpiper (*Calidris ferruginea*), swift tern (*Sterna bergii*), and Caspian tern (*Hydroprogne caspia*).

Other wetland red data species present in the river mouth, but with populations below the regional 1% level are the Great White Pelican (*Pelecanus onocrotalus*), Little bittern (*Ixobrychus minutus*) whose presence in the river mouth throughout the year suggests that the birds belong to the breeding race *pavesii* and not the visiting nominate race, Greater Flamingo (*Phoenicopterus ruber*), African Black Duck (*Anas sparsa*), Yellowbilled Duck (*A. Undulata*) and the Greyheaded Gull (*Larus cirrocephalus*).

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Ons Kontrei
Date published	7 November 2013
Site notice position	<p>Latitude / Longitude : Site Notice positions and photos will be included in the Final BAR</p> <p>Please note: Notices have been put up in Kuboes, Lekkersing, Alexander Bay, Eksteenfontein and Sanddrift.</p> <p>Hardcopies of the Draft Documents has been placed at the following public accessible places for a 40-day comment period from Friday, 15 November 2013 to Thursday, 16 January 2014:</p> <ul style="list-style-type: none"> • Kuboes Municipality, 91 Main Street/ Hoofstraat, Kuboes. Tel: 027 831 2375; • Lekkersing Municipality, 223 Links Street, Lekkersing. Tel: 079 418 1623 (Marie); • Eksteenfontein Municipality, 120 Main Street/ Hoofstraat, Eksteenfontein. Tel: 071 434 7035 (Selma); • Sanddrift Municipality, 189 Reierlaan, Sanddrift. Tel: (027) 831 1457; • Offices of Alexkor RMC JV, Orange Road, Alexander Bay. Contact Person: Leilani Swartbooi; • Withers Environmental Consultants, 15 Mount Albert Street, Stellenbosch. Tel: 021 887 4000; and • on the website: www.withersenviro.co.za. <p>Photos of the notices and positions will be included in the Final BAR.</p>
Date placed	5 November 2013

Include proof of the placement of the relevant advertisements and notices in **Appendix E1**.

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

Title, Name and Surname	Affiliation/ key stakeholder status <i>in terms of Regulation 54(2)(b) of GN R.543</i>	Contact details (tel number or e-mail address)
Owner or person in control of land – responsible for rehabilitation of site:		
Mrs Lydia Obies Chairman: Richtersveld CPA	Richtersveld CPA	Secretary of the CPA: Elsa de Wet Email: rgevcpa@gmail.com
Mr Mervyn Carstens General Manager	Alexkor SOC Ltd.	Contact Person: Leilani Swartbooi leilanis@alexkor.co.za
Mr Albert Mabunda	Department Environment and Nature	Contact Person: Klaas van Zyl

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	Conservation – Northern Cape	Email: kvanzyl1@vodamail.co.za Email: AMabunda@ncpg.gov.za
Owner of land:		
Mrs Lydia Obies Chairman: Richtersveld CPA	Richtersveld CPA	Secretary of the CPA: Elsa de Wet Email: rgevcpa@gmail.com
Occupiers of the site where the activity is or is to be undertaken:		
Mr Mervyn Carstens General Manager	Alexkor SOC Ltd	Contact Person: Leilani Swartbooi Email: leilanis@alexkor.co.za
Owners and occupiers of land adjacent to the site where the activity is or is to be undertaken:		
Mr Mervyn Carstens General Manager	Rem/1 – Alexkor SOC Ltd. (Will be transferred to CPA after Township Establishment by the Richtersveld Municipality)	Contact Person: Leilani Swartbooi Email: leilanis@alexkor.co.za
Mr Kosie Guybba	Rem/585 Eskom Power Station	Cell No.: 083 642 2119
Municipal councillor of the Ward 1 / Ratepayers that represent the community		
Arthur Jansen	Ward Councillor and Town Mayor of Alexander Bay	Email: Arthur@richtersveld.gov.za
Municipality which has jurisdiction in the area		
Dalene Farmer	Municipal Manager Richtersveld Municipality	Tel: 027 851 1111 Email: surita@richtersveld.gov.za
Any organ of state having jurisdiction in respect of any aspect of the activity		
Mark Gordon M Rabothata	Department of Environmental Affairs Decision making authority	Email: mrabothata@environment.gov.za
Shaun Cloete	Department of Water Affairs	Email: cloetes@dwa.gov.za
Keorapetse Sofeleng	SAHARA – Northern Cape	Email: ksofeleng@nc.sahra.org.za

Include proof that the key stakeholder received written notification of the proposed activities as **Appendix E**. This proof may include any of the following: - **(Will be included in Final BAR)**.

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Will be included in the Final BAR after the 40-day commenting period on this Draft BAR.	

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the **Final BAR** as **Appendix E3**.

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5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Surname	Name	Organisation
Obies	Lydia	Richtersveld Communal Property Association (CPA) Farm Rem/625
Carstens	Mervyn	General Manager: Alexkor SOC Limited
Mabunda	Albert	Department Environment and Nature Conservation Northern Cape
Gaybba	Kosie	Re/582 Eskom Substation
van Zyl	Klaas	Control Biodiversity Officer Department of Environment and Nature Conservation
De Villiers	Pierre	CAPE Estuaries Programme
Person	Contact	Working for Wetlands
		Kuboes Municipality
	Marie	Lekkersing Municipality
		Sanddrift Municipality
	Selma	Eksteenfontein Municipality
de Villiers	Pierre	CAPE Estuaries Programme
Palmer	Dalene	Richtersveld Municipality
Badenhorst	Dewald	Deputy Director: Protected Area Management Department Environment and Nature Conservation Northern Cape
Geldenhuis	Conrad	Research and Development Support Department Environment and Nature Conservation Northern Cape
Oppel	Wilna	Marine and Coastal Management Department Environment and Nature Conservation Northern Cape
Boyd	Alan	Director: Biodiversity and Coastal Research DEA Oceans and Coast
Mkefe	Xola	Director: DEA Oceans and Coast Coastal and Biodiversity Conservation
Thwala	Nompumelelo	DEA Oceans and Coast Coastal and Biodiversity Conservation
Madlokazi	Ntombovuyo	Coastal and Biodiversity Conservation Estuaries Management
Myanga	Xolani	Coastal and Biodiversity Conservation DEA Oceans and Coast
Tshitwamulomoni	Stanley	Deputy Director: DEA Biodiversity Conservation Ramsar Administrative Authority
Motaung	Lucia	Assistant Director: DEA Biodiversity Conservation Ramsar Administrative Authority
Ranwedzi	Mashudu	Water quality LOR Department of Water Affairs
Cloete	Shaun	Water quality LOR Department Water Affairs
Koch	Harold	Nam. Ministry of Water Affairs Director Water Resources Management ORASECOM
Nieuwout	Heidi	South African National Biodiversity Institute Provincial Coordinator: W- and N Cape Working for Wetlands Programme
Farmer	D.	Richtersveld Municipality Municipal Manager
de Goede	Nick	South African National Parks (SANParks) Ai/Ais-Richtersveld Transfrontier Park Park Manager (RSA side)
The Provincial Manager		South African Heritage Resources Agency (SAHRA) Northern Cape Provincial Office
Dr. Galimberti	Mariagrazia	South African Heritage Resources Agency (SAHRA) – Western Cape

Include proof that the Authorities and Organs of State received written notification of the proposed activities as **appendix E**. (Proof will be included into the Final BAR)

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State. - N/A

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as **Appendix E5** in the **Final BAR**. A Proactive I&AP list is included as **Appendix E1**.

Copies of any correspondence and minutes of any meetings held must be included in **Appendix E6**.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/ activity/ technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

The EMP (**Appendix G**) provides the detailed mitigation measures associated with the identified potential impacts.

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 is included as **Appendix F**.

The following tables outline the methodology used to assess the significance of the potential environmental impacts associated with the proposed project.

1. The significance of each impact identified was assessed according to the following variables (evaluation components)

- **EXTENT** (spatial scale);
- **MAGNITUDE**;
- **DURATION** (time scale);
- **PROBABILITY** of occurrence;
- **IRREPLACEABLE** loss of resources; and
- the **REVERSIBILITY** of the impact.

2. Each impact was assessed in terms of each of the above variables, in terms of scale of severity as described in **Tables 1 and 2 below**. Cumulative impacts were also assessed and ranked according to their potential severity.

3. After the evaluation components (variables) were ranked on a scale for each impact, the significance of the potential impact was calculated using the following formula:

SP (significance points) = (magnitude + duration + extent + irreplaceable + reversibility) x probability
(The maximum value is 150).

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Table 1: Evaluation components, ranking scales and description (criteria).	
Evaluation component	Ranking scale and description (criteria)
MAGNITUDE of NEGATIVE IMPACT (at the indicated spatial scale)	<p>10 - Very high: Biophysical and/or social functions and/or processes might be <i>severely</i> altered.</p> <p>8 - High: Biophysical and/or social functions and/or processes might be <i>considerably</i> altered.</p> <p>6 - Medium: Biophysical and/or social functions and/or processes might be <i>notably</i> altered.</p> <p>4 - Low: Biophysical and/or social functions and/or processes might be <i>slightly</i> altered.</p> <p>2 - Very Low: Biophysical and/or social functions and/or processes might be <i>negligibly</i> altered.</p> <p>0 - Zero: Biophysical and/or social functions and/or processes will remain <i>unaltered</i>.</p>
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	<p>10 - Very high (positive): Biophysical and/or social functions and/or processes might be <i>substantially</i> enhanced.</p> <p>8 - High (positive): Biophysical and/or social functions and/or processes might be <i>considerably</i> enhanced.</p> <p>6 - Medium (positive): Biophysical and/or social functions and/or processes might be <i>notably</i> enhanced.</p> <p>4 - Low (positive): Biophysical and/or social functions and/or processes might be <i>slightly</i> enhanced.</p> <p>2 - Very Low (positive): Biophysical and/or social functions and/or processes might be <i>negligibly</i> enhanced.</p> <p>0 - Zero (positive): Biophysical and/or social functions and/or processes will remain <i>unaltered</i>.</p>
DURATION	<p>5 - Permanent</p> <p>4 - Long term: Impact ceases after operational phase/life of the activity.</p> <p>3 - Medium term: Impact might occur during the operational phase/life of the activity.</p> <p>2 - Short term: Impact might occur during the construction phase – (up to 3 years).</p> <p>1 - Immediate</p>
EXTENT (or spatial scale/influence of impact)	<p>5 - International: Beyond National boundaries.</p> <p>4 - National: Beyond Provincial boundaries and within National boundaries.</p> <p>3 - Regional: Beyond 5 km of the proposed development and within Provincial boundaries.</p> <p>2 - Local: Within 5 km of the proposed development.</p> <p>1 - Site-specific: On site or within 100 m of the site boundary.</p> <p>0 - None</p>
IRREPLACEABLE loss of resources	<p>5 – Definite loss of irreplaceable resources.</p> <p>4 – High potential for loss of irreplaceable resources.</p> <p>3 – Moderate potential for loss of irreplaceable resources.</p> <p>2 – Low potential for loss of irreplaceable resources.</p> <p>1 – Very low potential for loss of irreplaceable resources.</p> <p>0 - None</p>
REVERSIBILITY of impact	<p>5 – Impact cannot be reversed.</p> <p>4 – Low potential that impact might be reversed.</p> <p>3 – Moderate potential that impact might be reversed.</p> <p>2 – High potential that impact might be reversed.</p> <p>1 – Impact will be reversible.</p> <p>0 – No impact.</p>
PROBABILITY (of occurrence)	<p>5 - Definite: >95% chance of the potential impact occurring.</p> <p>4 - High probability: 75% - 95% chance of the potential impact occurring.</p> <p>3 - Medium probability: 25% - 75% chance of the potential impact occurring</p> <p>2 - Low probability: 5% - 25% chance of the potential impact occurring.</p> <p>1 - Improbable: <5% chance of the potential impact occurring.</p>

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CUMULATIVE impacts	<p>High: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Medium: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Low: The activity is localised and might have a negligible cumulative impact.</p> <p>None: No cumulative impact on the environment.</p>
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Once the evaluation components have been ranked for each impact, the significance of potential impact are assessed (or calculated) using the following formula:

$$\text{SP (significance points)} = (\text{magnitude} + \text{duration} + \text{extent} + \text{irreplaceable} + \text{reversibility}) \times \text{probability}$$

The maximum value is 150 SP (significance points). The unmitigated and mitigated scenarios for each environmental impact should be rated as per **Table 2** below.

Table 2: Definition of significance ratings (positive and negative).

Significance Points	Environmental Significance	Description
125 – 150	Very high (VH)	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	High (H)	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	Medium-high (MH)	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be re-evaluated at.
41 – 74	Medium (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
0 – 40	Low (L)	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	Positive impact (+)	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project.

D1.1 IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN AND CONSTRUCTION PHASE OF THE PROJECT

The Planning and Design and the Construction Phase of the project only deals with the removal of the flood attenuation earth berm, the construction of a new earth berm to protect the low lying areas of Alexander Bay and the sports fields from inundation during floods once the existing berm has been removed, and the breaching of the sand berm across the flood channel to the south of the Orange River Mouth and the breaching from time to time of the berm across the mouth of the Orange River. The removed material from the berm is to be used to fill old mine workings within the town of Alexander Bay and within the Alexkor mine area. (please refer to **Appendix F** for the complete Impact Tables)

Summary of the Impact Tables (**Appendix F**):

CONSTRUCTION PHASE		ENVIRONMENTAL SIGNIFICANCE				MITIGATION
		BEFORE MITIGATION		AFTER MITIGATION		
PROJECT ACTIVITY / ALTERNATIVE	NATURE OF IMPACT	Significance	CUMULATIVE	Significance	CUMULATIVE	
Impact on biological aspects: Fauna and Flora						
Preferred Alternative -Removal of Earth Berm -Construction of Earth Berm -Breaching of ORM	Biological impacts (impact on estuary, wetland, saltmarsh, river mouth) and construction-phase impacts on flora and fauna	Low	Low	Low	Low	<ul style="list-style-type: none"> •Ensure that disturbed areas are protected from wind erosion as soon as possible after clearing.
Design Alternative: -Removal of intermittent sections of the Earth Berm	Biological impacts (impact on estuary, wetland, saltmarsh, river mouth) and construction-phase impacts on flora and fauna	Low	Low	Low	Low	<ul style="list-style-type: none"> • Shade netting barriers can be erected to slow wind down, thereby reducing dust on bare surfaces.

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CONSTRUCTION PHASE		ENVIRONMENTAL SIGNIFICANCE				MITIGATION
		BEFORE MITIGATION		AFTER MITIGATION		
PROJECT ACTIVITY / ALTERNATIVE	NATURE OF IMPACT	Significance	CUMULATIVE	Significance	CUMULATIVE	
"No-go" alternative	The site remain as it is. Habitat will continue to be lost and degraded by natural and human-caused activities in and around the site. This will cause further destruction to the Orange River Estuary that will be irreversible	Very High (-)	High		---	No mitigation possible if status quo remains the same.
Dust Impacts						
Preferred Alternative -Removal of Earth Berm -Construction of Earth Berm -Breaching of ORM	Dust generated by machinery during removal of earth berm could become a nuisance to neighbouring landowners and blow into Orange River Estuary.	Medium	Low-Medium	Low	Low	Bare surfaces should be kept moist by spraying water on it during windy periods to prevent dust formation, until such time that the construction phase is over.
Design Alternative: -Removal of intermittent sections of the Earth Berm	As above for the Preferred Alternative. If only sections of the Earth Berm is removed - less dust will be generated	Low	Low	Low	Low	

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CONSTRUCTION PHASE		ENVIRONMENTAL SIGNIFICANCE				MITIGATION
		BEFORE MITIGATION		AFTER MITIGATION		
PROJECT ACTIVITY / ALTERNATIVE	NATURE OF IMPACT	Significance	CUMULATIVE	Significance	CUMULATIVE	
"No-go" alternative	Nuisance impacts associated with construction will not be realised.					N/A
Noise and Security Impacts						
Preferred Alternative -Removal of Earth Berm -Construction of Earth Berm -Breaching of ORM	Noise from construction activities, personnel and vehicles and Security Concerns	Low	Low	Low	Low	<p>Site workers to undergo environmental induction training before starting work so that they are aware of the various environmental requirements. The induction training must address keeping noise to a minimum and mindful of labourers conduct.</p> <p>Noise generation will be limited to the normal construction activities associated with construction vehicles during normal working hours.</p>

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CONSTRUCTION PHASE		ENVIRONMENTAL SIGNIFICANCE				MITIGATION
		BEFORE MITIGATION		AFTER MITIGATION		
PROJECT ACTIVITY / ALTERNATIVE	NATURE OF IMPACT	Significance	CUMULATIVE	Significance	CUMULATIVE	
Design Alternative: -Removal of intermittent sections of the Earth Berm	Noise from construction activities, personnel and vehicles and Security Concerns.	Low	Low	Low	Low	The Contractor /RE and ECO will need to implement and monitor security steps to be taken.
"No-go" alternative	Nuisance impacts associated with construction will not be realised.					N/A
Soil pollution during the construction phase						
Preferred Alternative -Removal of Earth Berm -Construction of Earth Berm -Breaching of ORM	Potential soil, surface water and groundwater pollutions from spillages of hazardous materials (oils, fuel).	Low	Low	Low	Low	All vehicles, equipment and fuel tanks (e.g. trucks, excavator) must be maintained in a good condition that prevents leakages and potential contamination of soil. All fuels and oils must be stored in a bund to prevent pollution from spills and leaks.
Design Alternative: -Removal of intermittent sections of the Earth Berm	Potential soil, surface water and groundwater pollutions from spillages of hazardous materials (oils, fuel).	Low	Low	Low	Low	
"No-go" alternative	No Impact					N/A

DRAFT BASIC ASSESSMENT REPORT

CONSTRUCTION PHASE		ENVIRONMENTAL SIGNIFICANCE				MITIGATION
		BEFORE MITIGATION		AFTER MITIGATION		
PROJECT ACTIVITY / ALTERNATIVE	NATURE OF IMPACT	Significance	CUMULATIVE	Significance	CUMULATIVE	
Fire risks during Construction Phase						
Preferred Alternative -Removal of Earth Berm -Construction of Earth Berm -Breaching of ORM	Construction workers could cause accidental wild fires within the riparian fringe vegetation.	Low	Low	Low	Low	Staff should only smoke within demarcated areas. No fires will be allowed on the site unless authorised by the Safety Officer. Site workers must undergo environmental induction training before undertaking work so that they are aware of the various environmental requirements.
Design Alternative: -Removal of intermittent sections of the Earth Berm	Construction workers could cause accidental wild fires within the riparian fringe vegetation.	Low	Low	Low	Low	
"No-go" alternative	The status quo will remain unchanged.					N/A

DRAFT BASIC ASSESSMENT REPORT

CONSTRUCTION PHASE		ENVIRONMENTAL SIGNIFICANCE				MITIGATION
		BEFORE MITIGATION		AFTER MITIGATION		
PROJECT ACTIVITY / ALTERNATIVE	NATURE OF IMPACT	Significance	CUMULATIVE	Significance	CUMULATIVE	
Solid Waste Management						
Preferred Alternative -Removal of Earth Berm -Construction of Earth Berm -Breaching of ORM	Potential pollution of the site with solid waste generated during Construction phase (paper, plastic, timber, wire, berm material and sand).	Low	None	Low	None	The earth-fill material removed from the earth berm (at Location A), will be used to construct the proposed new flood protection berm (at Location B). Excess fill removed from the berm (at Location A) will be used to fill in old alluvial diamond mine excavations around Alexander Bay and at the old mine workings within Alexkor. The excavated material from the berm must be assessed for any pollutants.

DRAFT BASIC ASSESSMENT REPORT

CONSTRUCTION PHASE		ENVIRONMENTAL SIGNIFICANCE				MITIGATION
		BEFORE MITIGATION		AFTER MITIGATION		
PROJECT ACTIVITY / ALTERNATIVE	NATURE OF IMPACT	Significance	CUMULATIVE	Significance	CUMULATIVE	
Design Alternative: -Removal of intermittent sections of the Earth Berm	Potential pollution of the site with solid waste generated during Construction phase (paper, plastic, timber, wire, berm material and sand).	Low	Low	Low	None	As above
“No-go” alternative	The status quo will Remain.					N/A
Socio-economic impacts						
Preferred Alternative -Removal of Earth Berm -Construction of Earth Berm -Breaching of ORM	New employment opportunities will be created during the construction/rehabilitation phase	Medium (+)	Medium (+)	Medium (+)	Medium (+)	Ensure that the required project workers are sourced from local communities and that maximum employment numbers are maintained throughout the project duration.
Design Alternative: -Removal of intermittent sections of the Earth Berm	New employment opportunities will be created during the construction/rehabilitation phase	Medium (+)	Medium (+)	Medium (+)	Medium (+)	

CONSTRUCTION PHASE		ENVIRONMENTAL SIGNIFICANCE				MITIGATION
		BEFORE MITIGATION		AFTER MITIGATION		
PROJECT ACTIVITY / ALTERNATIVE	NATURE OF IMPACT	Significance	CUMULATIVE	Significance	CUMULATIVE	
"No-go" alternative	No job opportunities will be realised					

1.1 IMPACTS THAT MAY RESULT FROM THE POST CONSTRUCTION PHASE (OPERATIONAL PHASE) COMPRISING REHABILITATION

The Post Construction Phase (Operational Phase), which is to encompass the rehabilitation of the old flood channels and wetlands that were historically filled in when the earth berm was constructed to protect mine workings, inundation of the low-lying northern sections of Alexander Bay, and to create agricultural fields for food production and grazing of livestock, is beyond the scope of this project and will be carried out in accordance with the existing *Strategic Management Plan for the Orange River Mouth Ramsar Site*. The benefits of the rehabilitation of the old flood channels and associated wetlands, previously filled in are envisaged to have highly significant positive impacts on the ecology and biodiversity of this lower portion of the Orange River Estuary. The rehabilitation of the flood plain and the normalisation of the functioning of this important section of the estuary will also have far reaching positive impacts on the socio-political front between Namibia and South Africa and internationally in terms of realising the conservation of the Orange River Ramsar site. Refer to Appendix G: EMPr - **Section F**: The Way Forward after Implementation of this EMPr

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to **types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.**

Alternative A (preferred alternative) and Design Alternative.

In terms of the overall significance of the impacts of the proposed removal of an earth berm and the construction of a berm near the northern boundary of the town and around the sports complex (rugby fields), and the artificial breaching of the sand berm across the flood channel to the south of the Orange River Mouth (and the mouth of the Orange River as well), a **high positive impact** is envisaged after the management and mitigation of impacts have been implemented. This high positive impact arising from not only the positive impact on the biophysical enhancement of restoring the old flood channels and associated wetlands, but also takes into account the potential economic, political, and social impacts, viz., potential increase in tourism; the potential good reflection on South Africa with regards to giving attention to fulfilling its obligations in terms of the Ramsar Convention of Wetlands if the Orange River Mouth by being removed from the Montreux Record; the protection of flood damage to the town of Alexander Bay; the post construction phase rehabilitation job creation; and the restoration of an International Important Bird Area.

If the recommended mitigation measures contained in the attached EMPr (**Appendix G**) are applied, there should be no lasting significant negative long term environmental impacts arising from the proposed removal of the berm and construction of a new berm and the breaching of the sand berm across the flood channel to the south of the Orange River mouth. The positive impacts after rehabilitation will be highly significant for the long term ecological wellbeing of the Estuary.

Type of Impact	Negative/Positive Environmental Impact	Likelihood of potential impacts occurring	Duration of Impact	Significance of Impact
Construction				
Flora and Fauna disturbance during construction	Negative	Low Probability	Temporary	Low for Design Alternative
Soil Erosion	Negative	High Probability	Temporary	Low
Dust Pollution	Negative	High Probability	Temporary	Low
Noise and Security	Negative	Low Probability	Temporary	Low
Soil Pollution	Negative	Low Probability	Temporary	Low
Fire Risk	Negative	Low Probability	Temporary	Low
Solid Waste Management	Negative	Low Probability	Temporary	Low
Job Creation	Positive	Certain	Temporary	Medium

Post Construction (Operational)				
Increase in wetland vegetation	Positive	High Probability – Definitely Medium Probability for Design Alternative	Long Term	High Medium for Design Alternative
Improved and increased flora and fauna habitat	Positive	High Probability – Definitely Medium Probability for Design Alternative	Long Term	High Medium for Design Alternative
Increased biodiversity	Positive	High Probability – Definitely	Long Term	High
Increased flood flow in rehabilitated channels	Positive	High Probability	Long Term	High
Reduced soil erosion	Positive	High Probability	Long Term	High
Fire Management	Negative	Low Probability	Long Term	Low
Change in Species Composition	Positive	High Probability Medium Probability for Design Alternative	Long Term	Low Low
Employment and skills capacity	Positive	High Probability	Long Term	High
Education and Research	Positive	High Probability	Long Term	Medium

Design Alternative

Design Alternative 1 (Location A) is to only remove the culverts placed in the berm near the mouth and not the whole berm. The same types of impacts, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts will be applicable as for the Preferred Alternative, except where indicated in green above.

Alternative C

N/A

No-go alternative (compulsory)

*According to the Land Claim Settlement Agreement (Case Number 151/1998) between Alexkor and the Sida !hub Communal Property Association (CPA), Alexkor will be responsible for all historic disturbances. **That in effect means that the no-go alternative is realistically not an option**, i.e. the removal of the berm and the rehabilitation of the flood channels and wetlands must take place.*

A **High Negative** (cumulative) impact is envisaged should the no-go alternative be implemented:

If the no-go alternative is implemented, wetland and saltmarsh habitat will continue to be lost and degraded by natural and human-caused activities in and around the estuary. This will cause further destruction to the Orange River Estuary that will be **irreversible** in our lifetime.

The benefit to the broader South African and Namibian society of the restoration of the salt marshes in the Orange River Estuary from further degradation that will contribute significantly in achieving Ramsar status for the ORM wetland, **will be lost and not achieved in the case of the no-go option.**

In case of the no-go option, the potential for stimulating the local economy (construction phase purchase of goods and services), and of creating construction phase employment for local PDIs would be lost. The positive long term Operational Impacts as listed in Table above, will not occur.

Unfortunately, in many cases the value of estuaries and wetlands has been overlooked by people who have viewed them only as "waste" areas by walling them off, draining and filling them in for agriculture, mining, urban development purposes. Habitats in estuaries and wetlands are also damaged by pollution and invasive species. When certain types of plants and animals are killed off from these effects, other species that depend on them also die off or move to another area.

In terms of the above, a **high negative** (cumulative) impact (which would be irreversible in the long term as stated above) is envisaged should the no-go alternative be implemented.

SECTION E: RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	NO
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If “NO”, indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

This Draft BAR still needs to undergo the public participation process in terms of NEMA. We do however believe that **significant positive environmental impacts** would arise from the removal of a berm and the construction of a proposed berm to safeguard the town from flooding events. Similarly it has been assessed that significant negative environmental impacts should not result from this development. Sufficient mitigation can be applied to enhance positive impacts and reduce negative impacts. We believe that the proposed restoration project will be sustainable in the long term and that the proposed development will be an asset not only to the broader South African Society, but internationally as well.

If “YES”, please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

We believe that the proposed project should be approved. Various mitigation recommendations are contained in the EMPr (**Appendix G**) and should form conditions of approval of this application.

An ECO must be appointed by the applicant and/or by Alexkor., to compile environmental compliance checklists once every month for the duration of the project to ensure that the construction phase of the development is implemented according to the recommendations of the EMPr, and that construction and removing of the berms complies with the conditions of approval to be issued by the DEA.

The results of the appointed ECO’s checklists should be used to inform an Environmental Audit Report, which should be submitted to the DEA at the end of the construction period once all site rehabilitation has been completed.

Is a Draft EMPr attached?

YES ✓	NO
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The Draft EMPr is attached as **Appendix G**.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as **Appendix H**.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Aubrey Withers
NAME OF EAP

SIGNATURE OF EAP

12 November 2013
DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps/Figures

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Draft Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Other