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## **ENVIRONMENTAL MANAGEMENT PLAN**

**FOR**

**BANNERMAN MINING RESOURCES' PROPOSED NEW WATER PIPELINE FROM  
THE BASE PUMPSTATION NEAR SWAKOPMUND TO THE ETANGO PROJECT  
TURN OFF FROM THE C28 ROAD**

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Compiled for:

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## 1 INTRODUCTION

Bannerman Mining Resources (Namibia) (Pty) Ltd (Bannerman) has an Environmental Clearance Certificate (ECC2847) for the proposed mining and associated activities at the Etango Project. Bannerman appointed A. Speiser Environmental Consultants (ASEC) to conduct an Environmental Impact Assessment (EIA) process, including the development of an Environmental Management Plan (EMP) for the proposed water pipeline section from the NamWater base pump station near Swakopmund to the Etango Project turn off from the C28 Road (see **Figure 1**), as this had not been covered in the previous / approved EIA. The remaining section of the pipeline from the C28 Road to the Etango Project area has already been assessed and approved as part of the Etango EIA (Etango Project: Linear Infrastructure Environmental Impact Assessment, Environmental Impact Report (March /April 2011), Environmental Resources Management (ERM)) conducted between 2007 and 2008 and finalized in 2011 (ECC2847).

Power supply to the booster pump stations will come from the 22kV line to the north of the existing pipelines. A cable connected onto the overhead line – going down the pole and then buried in the corridor between the 22kV line and the substation which is located next to the pump station. ...

This EMP documents a series of individual management plans which are designed to meet legal requirements and avoid or minimise the impacts associated with the construction and operation of specific pipeline section (and the power supply to the booster pumps stations).

The management plans have been compiled based on a review of the findings and recommendations of the EIA report for the proposed water pipeline section from the base pump station near Swakopmund to the Etango Project turn off from the C28 Road (ASEC, 2021).

### 1.1 Keeping EMPs up to date

It is the intention that this EMP should be seen as a “living document” which will be amended during the operation, as the activities might change or new ones be introduced.

### 1.2 Details of the Persons Who Prepared This EMP

ASEC, the independent firm of consultants who undertook the EIA has also compiled this EMP. Details of the Environment Assessment Practitioners are provided in the main (EIA) report.

## 2 LEGAL REQUIREMENTS

A summary of the applicable legislation can be found in **Section 5** in the main (EIA) report.

### 2.1 2.1 Permits and Rules

As stipulated in the EIA Regulations, No.30 of 2012, the Environmental Clearance Certificate (ECC) needs to be obtained from MEFT:DEA before the commencement of the Project.

Additional permits, which need to be in place and be obtained by Bannerman are -

#### **Labour Act 11 of 2007:**

Regulations relating to the health and safety of employees at work are contained in GN 156/1997 (GG 1617). Must be complied with on this project.

**Forestry Act No 12 of 2001, Forest Amendment Act, No. 13 of 2005:**

Section 22 of the Act requires a permit for the cutting, destruction or removal of vegetation that are classified under rare and or protected species. The Act also stipulates that trees, shrubs and bushes within 100 m from a watercourse may not be cut, destroyed or removed without a permit

**National Heritage Act No 27 of 2004:**

No archaeological/heritage site or cultural remains may be removed, damaged, altered or excavated. The Chance Find Procedure (see **Appendix H – Archaeology Specialist Study**) need to be applied should any additional remains be encountered.

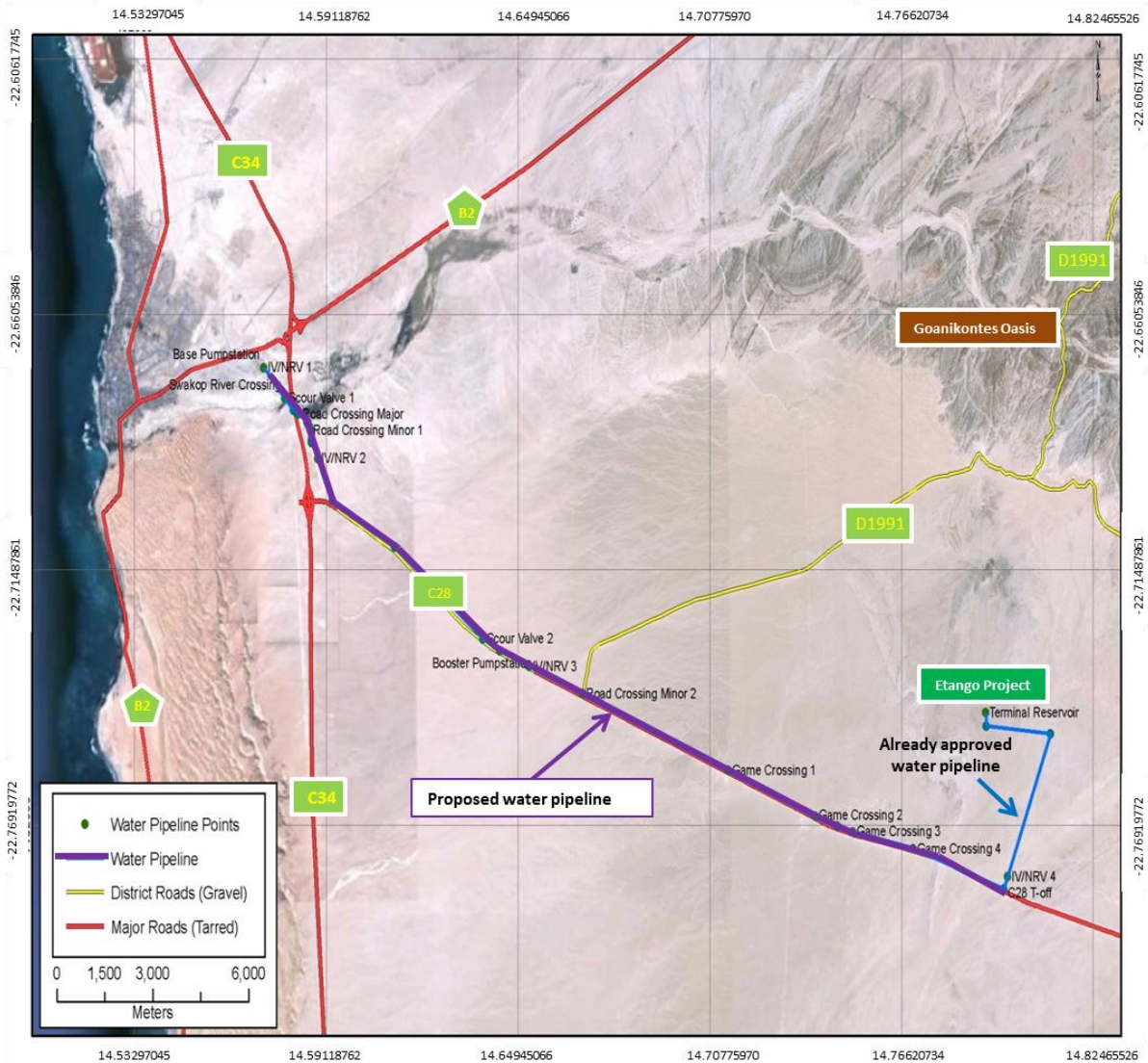
Ten sites along the proposed pipeline corridor have been identified during the archaeological specialist study.

**Park Rules:**

The Parks rules need to be adhered to (see **Appendix 1**).

**Environmental Quality Objectives (EQOs) from the Strategic Environmental Assessment ‘Uranium Rush’ (SAIEA, 2010):**

The SEA sets out the likely cumulative impacts of mine-related developments in the Namib Naukluft National Park (NNNP), describes the ‘desired state’ that should be targeted by the various institutions and organizations involved and makes recommendations as to how this desired state can be achieved and maintained (SAIEA, 2010). The applicable EQOs are attached in **Appendix 2** of the EMP and are incorporated into the EMP. Where applicable the EQOs should be implemented.



**Figure 1: Location of the newly assessed water pipeline (purple) and already approved water pipeline (blue).**

### 3 OVERALL ENVIRONMENTAL OBJECTIVES FOR THE EMP

The following overall environmental objectives have been set for the implementation of the proposed water pipeline Project.:

- To comply with national legislation and standards for the protection of the environment;
- To limit potential impacts on biodiversity through the minimisation of the footprint and the conservation of residual habitat as far as possible;
- To reduce cumulative impacts arising from a third water pipeline.
- To limit contaminated effluent discharge into the environment through the containment and recycling of contaminated water;

- To ensure the legal and appropriate management and disposal of general and hazardous waste, through the implementation of a strategy for the minimisation, recycling, management, temporary storage and removal of waste;
- To support and encourage environmental awareness and responsibility amongst all contractors;
- To ensure all employees and contractors adhere to the park rules;
- To ensure the all the contractors adhere to the relevant management commitments; and
- Ensure compliance to the EMP.

## **4 GENERAL MANAGEMENT REQUIREMENTS**

The following sections list the general management requirements that are relevant to the construction activities of the proposed new pipeline. If approved by MEFT, the ECC for the water pipeline might in future be transferred to NamWater. The operations phase management requirements will then also be transferred to NamWater which would require an update of the EMP relating to the responsible parties.

### **4.1 Parties responsible for the implementation of the EMP**

This section describes the roles and responsibilities for implementing the various management plans (refer to section 5).

#### ***4.1.1 Bannerman - Managing Director/ Project proponent***

The Managing Director shall ensure compliance to this EMP. The EMP will be part of the contract with all contractors working on the project.

#### ***4.1.2 Bannerman – Construction Supervisor***

The Construction Supervisor has overall responsibility for environmental management on the construction site for ensuring this EMP is implemented. To assist the Construction Supervisor, it is recommended to appoint an Environmental Officer (or dedicated person responsible for environmental management activities on site) who will be dedicated to managing and monitoring the environmental issues associated with the construction activities of the proposed pipeline.

The Construction Supervisor must ensure the EMP is included in all contracts and to ensure that contractors adhere to the conditions of the EMP, the ECC and other relevant permits.

Contract documents should consider the inclusion of penalties for non-conformance to the EMP, or to link the sign off of the Contract to a retainer clause. The client retains part of the contract fees until the Construction Supervisor has signed off the rehabilitated sites, indicating satisfaction with the rehabilitation of the Contractor's work and laydown area.

The Construction Supervisor shall be responsible for responding to any actual environmental emergencies / incidences that occur within their sections, or as specified in this procedure.

The Construction Supervisor shall also ensure that sufficient financial and human resources are available at short notice to implement emergency procedures, and to take corrective action pro-actively when environmental risks are evident in advance.

### **4.1.3 Environmental Officer**

The Environmental Officer will be responsible for assisting the Construction Supervisor in all environmental issues, and specifically to ensure that the commitments as set out in this EMP are implemented during the construction phase. **Note:** After construction has been finalised the management and operation of the water pipeline will be handed over to NamWater.

In addition to the above, the Environmental Officer is responsible for ensuring that all persons involved during the construction comply with this EMP.

The Environmental Officer will be responsible for the following aspects related to compliance of this EMP:

- Regular inspections and auditing compliance to this EMP and any other relevant legal requirements e.g. permits and authorisations.
- Conduct environmental awareness training during induction training and on an ad hoc basis thereafter.
- Conduct scheduled monitoring as outlined in various sections in the EMP as well as any additional monitoring required by permit and authorisations issued to the water pipeline development by relevant authorities.
- Ensure compliance to this EMP and permits and authorisations issued to Bannerman by relevant authorities. Ensure responsibilities and target dates are developed for each one of the commitments in this EMP.
- Ensure compliance to the Park Rules by all employees and contractors through awareness training, engagement with MEFT: Directorate of Wildlife and National Parks (DWNP), where relevant.
- Submit required information to relevant authorities such as reporting related to monitoring and with regard to compliance with the EMP, permit and relevant authorisations.
- Liaise with the Construction Supervisor and Managing Director on environmental management (where required).

### **4.1.4 Contractors**

All contractors and their sub-contractors and employees will be contractually required to comply with the relevant commitments in this EMP.

### **4.1.5 Auditing Compliance of the EMP**

The commitments contained in this EMP will, once an ECC has been obtained, be Bannerman's contractual agreement with the Namibian authorities for sound environmental management. All employees, contractors and sub-contractors and any visitors to site will be expected to comply with the commitments contained herein.

#### **4.1.5.1 Internal Audits and Inspections**

The Environmental Officer will conduct internal management audits against the commitments in the EMP. These audits will be conducted every month. The audit findings will be documented for both record keeping purposes and for informing continual improvement.

The Environmental Officer will furthermore conduct daily inspections during construction.

#### **4.1.5.2 External Environmental Performance Assessment**

It is suggested that external performance assessments be conducted bi-annually and at the end of the construction phase by an independent qualified Environmental Practitioner.

#### ***4.1.6 Reporting / Submission of Information***

As a minimum, the following documents will be submitted to the relevant authorities on an ongoing basis:

- The bi-annual environmental report required by the MEFT:DEA will be submitted every six months.
- Report any incidences relating to animals in the park to the MEFT.

## 5 ENVIRONMENTAL MANAGEMENT PLANS

### 5.1 Safety and security Management Plan

It is essential that safety and security measures are defined and implemented to ensure that the construction site cannot be accessed by unauthorized people.

#### Issue 1: General (third party) safety and security

- No unauthorized access to construction sites is allowed.

### 5.2 Flora Management Plan - Construction

#### Overall Issues and mitigation measures:

- Protect biodiversity
  - ✓ Use the map of lichen extent and washes to guide all planning decisions.
  - ✓ Protect lichen fields and washes from inadvertent disturbance.
  - ✓ Maintain ecosystem function by retaining natural water flow in all drainage lines and washes.
  - ✓ Prevent and control spread of invasive alien plants.
  - ✓ Rehabilitate by closing excavated areas as soon as possible.
  - ✓ Test restoring lichen fields and biocrusts after construction has been finalised during the operational phase.
- Limit footprint
  - ✓ Limit concrete slabs and foundations to what is absolutely necessary.
  - ✓ Ensure machinery and vehicles move or park within existing disturbed service corridor.
  - ✓ Continue to liaise with Reptile Mineral Resources & Exploration to ultimately implement one (combined) water pipeline for the relevant section and not two additional pipelines – if possible.

#### 5.1.1 Management Measures

#### Issue 1: Loss of vegetation, lichens and associated biota due to the building of the pipeline

#### Mitigation measures:

- Reconsider routing the pipeline south of the two existing pipelines, if possible. Liaise with relevant Stakeholders (i.e. Roads Authority).
- Construct the pipeline below ground as far as possible and bury deeper when crossing washes, if a decision is taken to bury the pipeline.
- Construct the pipeline in the already disturbed service corridor as far as possible.
- Demarcate lichen areas before construction, where these would be crossed by the pipeline(s).



- Minimise ground disturbance by stockpiling excavated material in disturbed areas inside service corridor and outside of more densely vegetated areas such as washes and drainage areas.
- Backfill excavated areas immediately upon laying of pipeline, if a decision is taken to bury the pipeline. Access material (i.e. excavated soil), not used, for back filling must be removed from site and disposed of at the landfill site or at the proposed WRDs at the mine.
- Implement special rehabilitation measures where lichen fields are affected. These are:
  - ✓ Harvest lichens, lichen-covered rocks and top 1 cm of soil and store as inoculating medium for restoration.
  - ✓ Strip remaining topsoil (1-10 cm depth) where excavations are necessary, and
  - ✓ store nearby in disturbed area.
  - ✓ Re-apply topsoil on disturbed, but rehabilitated areas and inoculate with salvaged lichen and biocrust material.
  - ✓ Select some of these rehabilitated areas for monitoring the effect of topsoil application and inoculation on lichen and microphytic crust recovery.
  - ✓ Include selected sites in environmental monitoring programme for the future Etango Project.

## **Issue 2: Effect of dust on vegetation and lichens**

### **Mitigation measures:**

- Prevent dust generating activities during strong wind conditions.
- Use dust suppression measures (i.e. water sprays) when excessive dust is generated (visual inspection required).

## **Issue 3: Introduction of invasive alien plants**

### **Mitigation measures:**

- Ensure that no material (e.g. building sand) from alien-infested sites are brought on site - Clean underbody and tyres of machinery that was in contact with alien-infested areas
- Monitor sites where additional water could potentially lead to the establishment of invasive alien plants (e.g. where leaks occurred).
- Eradicate emerging invasive alien plants.

## **5.3 Flora Management Plan – Operation**

### **Issue 1: Change of habitat**

**Mitigation measures:**

- Bury pipeline deeper in washes and drainage areas to avoid obstructing water flow and damage by floods (if a decision is made to bury the pipeline)

**Issue 2: Introduction of invasive alien plants****Mitigation measures:**

- Regularly check for leaks
- Monitor sites for invasive alien plants along pipeline and
- Eradicate immediately

**5.4 Fauna Management Plan****Issue 1: Vertebrate fauna habitat affected; open trench a pitfall trap and above ground pipeline would affect ungulate and ostrich movement.****Mitigation measures:**

- Mimic the “wildlife crossing” points along the existing pipelines – i.e. follow the same pipeline corridor;
- Leave enough space between the pipelines for maintenance purposes;
- Bury pipeline, where possible (depending on geology), from T/Off north-eastwards to the Terminal Reservoir area; and
- Avoid leaving an open trench overnight and/or leave access routes at each end of the trench, if the pipeline will be belowground.

**5.5 Fauna Management Plan – Operation****Issue 1: Above ground pipeline would affect ungulate and ostrich movement.****Mitigation measures:**

- Mimic the “wildlife crossing” points along the existing pipelines – i.e. follow the same pipeline corridor.

**Issue 2: Fauna movement**

- Set up a monitoring programme in conjunction with the other relevant Uranium Mining Companies (Swakop Uranium, Langer Heinrich and Reptile Mineral Resources & Exploration ) along the water pipeline corridor to verify the effectiveness of the “wildlife crossing” points.
- Depending the monitoring results, improve / expand the crossing points, in consultation with MEFT (DNPW).

**5.6 Archaeology Management Plan****Issue 1: Chance Find Procedure****Mitigation Measures**

The Chance Find Procedure (see **Appendix H – Archaeology Specialist Study**) covers the actions to be taken from the discovery of a heritage site or item, to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Action by person identifying archaeological or heritage material:

- If operating machinery or equipment - stop work;
- Identify the site with flag tape;
- Determine GPS position if possible; and
- Report findings to foreman.

Action by foreman:

- Report findings, site location and actions taken to superintendent; and
- Cease any works in immediate vicinity.

Action by Construction Supervisor / Environmental Officer:

- Visit site and determine whether work can proceed without damage to findings;
- Determine and mark exclusion boundary; and
- Site location and details to be added to project GIS for field confirmation by archaeologist.

Action by archaeologist:

- Inspect site and confirm addition to project GIS;
- Advise NHC and request written permission to remove findings from work area; and
- Recovery, packaging and labelling of findings for transfer to National Museum.

## **5.7 Surface Water Management Plan**

### **Issue 1: Pollution of surface water**

#### **Mitigation Measures**

- Do not place any hydrocarbons in or near drainage lines
- Implement containment and clean-up measures relating to hazardous substance spillages (including hydrocarbons)
- All materials, fuels and chemicals will be collected, safely stored in sealed drums on impermeable surfaces within bunded and secured areas. These areas will be designed to contain 110% of the volume of one or the largest (in a multi drum setup) drum and will be equipped with traps and oil separators to contain spilled hydrocarbons. The used hydrocarbon liquid waste will be provided to third parties for recycling. Related records will be kept.
- All hazardous chemicals (new and used) and dirty water are handled in a controlled manner (e.g. handled over drip-trays) so that they do not contaminate surface water run-off and soil.
- All vehicles and machines must be maintained properly to ensure that oil spillages are kept at a minimum.
- Spill trays must be provided if refuelling of construction vehicles is done on site.
- Chemical sanitary facilities must be provided for construction workers. Construction workers should only be allowed to use temporary chemical / permanent toilets on the site. Chemical toilets shall not be within close proximity of any drainage system. Frequent maintenance should include removal without spillages.
- Maintain and implement spill management procedure, including the clean-up of hydrocarbon spills.

- Ad hoc spills will be cleaned up/remediated immediately in line with spillage management procedure.
- Place spill kits in all areas where hazardous substances are dispensed and stored and train staff to use it.

## **5.8 Air Quality Management and Mitigation Plan**

### **Issue 1: Dust generation**

#### **Mitigation Measures:**

- Minimize dust by using water sprayers in sensitive areas, e.g. lichens.

## **5.9 Soil Management Plan**

### **Issue 1: Soil disturbance/ management**

#### **Mitigation Measures:**

- Utilize as much as possible already disturbed areas.
- Limit the disturbance of soils to what is absolutely necessary both in terms of access tracks, laydown areas.
- In areas where the pipeline might be buried, the topsoil needs to be stored separately to put on the filled in area on top.
- All soil which cannot be refilled needs to be moved from site and deposited at an appropriate site (i.e. landfill site or at the proposed WRDs at the mine).

## **5.10 Visual Management Plan**

### **Issue 1: Aesthetics or visual impacts**

#### **Mitigation Measures:**

- Pipeline colour should match the surrounding colours of the desert.
- Construct the pipeline as close as possible to the existing two pipelines, within the same corridor.

## **5.11 Solid & Liquid Waste management Plan**

### **General aspects:**

- Designated waste containers will be established along the construction route. Receptacles must have lids to prevent wind borne litter, or scavenging by animals.
- Recyclable waste will be sent to a reputable recycling company. The remainder of the waste will be disposed at a licenced landfill site off site
- Non-recyclable waste will be collected and taken to an off-site waste facility.
- Keep record of safe disposal of waste.

## **Issue 2: Collection, storage and disposal of hazardous waste**

### **Mitigation Measures:**

- Designated waste collection points will be established on site for hazardous waste..
- Hazardous waste will be disposed of at a permitted hazardous waste disposal site (Walvis Bay).
- Keep record of safe disposal of waste.

## Appendix 1 – Parks Rules

It is against the law to:

- a) Be in possession of an unsealed or loaded firearm;
- b) Bring into the Park any pets, domestic or otherwise;
- c) Leave a rest camp before sunrise or reach it after sunset, or cross the borders of the Park between sunset and sunrise;
- d) Make fires at places other than the officially designated fire-places or make excessively large fires;
- e) Stay overnight at any place other than a rest camp;
- f) Throw away burning or smouldering objects or leave them at places where they may ignite something;
- g) Drive at places other than roads marked by official road signs;
- h) Kill, injure or needlessly disturb any wild animal;
- i) Pick, collect, uproot or disturb any flower, shrub, herb or any other plant;
- j) Damage or spoil any object in the park;
- k) Leave the rest camp in any other way than in a vehicle, or leave or hang out from the vehicle in any other place than in a rest camp or an assigned camping site;
- l) Throw away refuse or rubbish, except at places or in the receptacles provided for the purpose;
- m) Make a noise which may disturb other people;
- n) Drive or park in the Park in such a way that it may constitute a nuisance, disturbance or inconvenience to other people, or drive faster than the official speed limit;
- o) Enter the Park in an open vehicle or on a deck of a motor truck not fitted with a grid cage or other effective protection;
- p) Ignore the lawful instructions of MET Park officials;
- q) To hitch-hike;
- r) To use the tourists' facilities, i.e. swimming pool, etc. Park warden/ official need to be notified for any new drilling activities.

The visit/work to this Park is at your own risk and the Ministry of Environment and Tourism will not be held liable for any injuries, damage or losses you or your possessions may sustain.

All other park rules and regulations must be adhered too.

**Appendix 2 – Applicable Environmental Quality Objectives (EQOs) from Geological Survey of Namibia (2020): Strategic Environmental Management Plan (SEMP) for the Central Namib Uranium Mining Province, 2018-2019 Report. Ministry of Mines and Energy, Windhoek, Republic of Namibia**

## **EQO 4. WATER**

### **Aims of this EQO:**

To ensure that the public have the same or better access to water in future as they have currently, and that the integrity of all aquifers remains consistent with the existing natural and operational conditions (baseline). This requires that both the quantity and quality of groundwater are not adversely affected by prospecting and mining activities.

<b>Desired Outcome 4.1.</b>	Water for urban and rural communities is of acceptable quality.
<b>Target 4.1.1.</b>	Uranium mining does not compromise community access to water of appropriate quality.
<b>Indicator 4.1.1.1.</b>	Potable water conforms to minimum required quality as prescribed in the national water quality standards.

<b>Desired Outcome 4.2.</b>	The natural environment, urban and rural communities have access to adequate water.
<b>Target 4.2.1.</b>	Uranium mining does not compromise surface and groundwater availability.
<b>Indicator 4.2.1.1.</b>	Groundwater abstraction from NamWater's Central Namib water scheme does not exceed the aquifers' sustainable yield.

<b>Desired Outcome 4.3.</b>	Water for industrial purposes is available and reliable.
<b>Target 4.3.1.</b>	Additional water resources (notably desalinated water) are developed to meet industrial demand.
<b>Indicator 4.3.1.1.</b>	Industrial investors are not lost because of water unavailability.

## **EQO 5. AIR QUALITY**

### **Aims of this EQO:**

Workers and the public do not suffer significant increased health risks as a result of exposure to dust emission from the uranium mines.

<b>Desired Outcome 5.2.</b>	<b>Nuisance dust resulting from uranium mining is within acceptable thresholds.</b>
<b>Target 5.2.1.</b>	<b>Dust fallout levels at residences in towns should not exceed the recommended limit of 600 mg/m<sup>2</sup>/day.</b>
<b>Indicator 5.2.1.1.</b>	<b>Dust fallout levels in relevant towns are monitored continuously.</b>

## **EQO 7. EFFECT ON TOURISM**

### **Aims of this EQO:**

- The natural beauty of the desert and its sense of place are not compromised unduly by uranium mining; and to identify ways of avoiding conflicts between the tourism industry and prospecting/ mining, so that both industries can coexist in the Central Namib.
- Uranium mining does not prevent the public from visiting the usually accessible areas in the Central Namib for personal recreation and enjoyment; and to identify ways of avoiding conflicts between the need for public access and mining.



<b>Desired Outcome 7.1.</b>	Central Namib is accessible to the public (within the regulations of the National Parks).
<b>Target 7.1.1.</b>	Uranium mining does not result in net loss of publicly accessible areas.
<b>Indicator 7.1.1.1.</b>	Areas of importance for recreation that are not yet alienated by mining or prospecting are declared 'red flag' for prospecting or mining. These include: The Walvis-Swakop dunes, Messum Crater, Spitzkoppe (Gross and Klein), Brandberg, the Ugab, Swakop, Khan, and Kuiseb rivers, the coastal area between the Ugab River mouth and the tidal mud banks south of Sandwich Harbour (between lower mark and the main coastal road), the Welwitschia Drive and Park campsites.

<b>Desired Outcome 7.2.</b>	Uranium mining does not significantly reduce the visual attractiveness of the Central Namib.
<b>Target 7.2.1.</b>	Direct and indirect visual scarring from uranium mining is avoided or kept within acceptable limits.
<b>Indicator 7.2.1.1.</b>	Tour operators continue to regard areas such as the dunes, the coastline, Moon Landscape, Welwitschia Flats, Swakop and Khan River areas, and Spitzkoppe as a 'significant' component of their tour package.

## **EQO 8. ECOLOGICAL INTEGRITY**

### **Aims of this EQO:**

The ecological integrity and diversity of fauna and flora of the Central Namib is not compromised by uranium mining. Integrity in this case means that ecological processes are maintained, key habitats are protected, rare and endangered and endemic species are not threatened. All efforts are taken to avoid impacts to the Namib and where this is not possible, disturbed areas are rehabilitated and restored to function after mining/development.

<b>Desired Outcome 8.1.</b>	The ecological integrity of the Central Namib is maintained.
<b>Target 8.1.1.</b>	The mining industry and associated service providers avoid impacts to biodiversity and ecosystems, and where impacts are unavoidable, minimisation, mitigation and/or restoration and offsetting of impacts is achieved.
<b>Indicator 8.1.1.1.</b>	Important biodiversity areas [red or yellow flag areas] are taken into consideration when adjudicating prospecting and mining applications.
<b>Indicator 8.1.1.5.</b>	Sensitive areas are identified by mines and disturbance of these areas is minimized.
<b>Indicator 8.1.1.6.</b>	Infrastructure corridors are carefully planned to avoid ecologically sensitive areas, and demonstrate: <ul style="list-style-type: none"> <li>- consideration of alternatives,</li> <li>- optimization of service provision; and</li> <li>- commitment to the 'green route'</li> </ul>
<b>Indicator 8.1.1.7.</b>	Mines share infrastructure as much as possible, thus minimizing infrastructure proliferation.

<b>Indicator 8.1.1.8.</b>	Infrastructure planning and investment takes into account future demand, thus reducing the need for additional impacts.
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<b>Desired Outcome 8.5.</b>	Water quality and quantity does not decrease to the extent that it negatively affects biodiversity.
<b>Target 8.5.1.</b>	Water table levels, and water quality standards are described, and ephemeral river ecosystems are monitored to ensure that these standards are not compromised.
<b>Indicator 8.5.1.1.</b>	Regular monitoring of indicator species in relevant ephemeral rivers is in place to detect

## **EQO 11. HERITAGE**

### **Aims of this EQO:**

Uranium exploration and mining and related infrastructure developments will have the least possible negative impact on archaeological and paleontological heritage resources. Survey, assessment and mitigation will result in significant advances in knowledge of archaeological and paleontological heritage resources, so that their conservation status is improved and their use in research, education and tourism is placed on secure and sustainable footing.

<b>Desired Outcome 11.1.</b>	The integrity of archaeological and paleontological heritage resources is not unduly compromised by uranium mining.
<b>Target 11.1.1.</b>	Mining industry and associated service providers avoid impacts to archaeological resources, and where impacts are unavoidable, mitigation, restoration and /or offsetting are achieved.
<b>Indicator 11.1.1.1.</b>	All mining and related developments are subject to archaeological and paleontological assessment No unauthorised impact occurs
<b>Indicator 11.1.1.2.</b>	Mining companies adhere to local and international standards of archaeological assessment.