



THE ETANGO URANIUM MINE PROJECT

LINEAR INFRASTRUCTURE

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT (ESIA)

BACKGROUND INFORMATION DOCUMENT

Bannerman Mining Resources (Namibia) (Pty) Ltd (Bannerman) proposes to establish the Etango Uranium Mine located approximately 41km (by road) to the east of Swakopmund and 47km to the north-east of Walvis Bay.

Bannerman appointed *A. Speiser Environmental Consultants (ASEC)* to undertake an Environmental and Social Impact Assessment (ESIA) of the Etango Project, in compliance with the Namibian Environmental Policy and the Environmental Management Act of 2007. Environmental clearance was granted by the Ministry of Environment and Tourism in March 2010. (An update of this ESIA as a result of updated project information is presently being undertaken by ASEC, and is the subject of a separate EIA process).

Bannerman appointed *Environmental Resources Management (ERM)* to prepare an additional ESIA for all ancillary linear infrastructure required in support of the Etango Project, including (1) electricity supply and powerlines, (2) water supply and pipelines, and (3) transport route options, including either rail and road options or a combination thereof.

1. PROPOSED ANCILLARY LINEAR INFRASTRUCTURE

Ancillary infrastructure, for the purposes of this ESIA, includes any proposed or planned external linear infrastructure which is not located directly on the mine site, but still forms part of the larger Etango Project. This includes (1) Transport Routes (both road and rail), (2) a Water Supply Pipeline, and (3) Electrical Supply and Power lines (See map overleaf).

1.1. TRANSPORT ROUTES

The proposed project will require the transport of personnel, goods, equipment and services between the mine site and Walvis Bay, both during the construction and operational phases. A number of transport options are available including:

Option 1 – Public Roads: The C28 and C34 would be used as the primary road route between the mine site and Walvis Bay, a total combined distance of 70km.

Option 2 – Railway: A proposed new railway line will run parallel to the C28 for approximately 37 km, before linking with the existing railway system to the south of Swakopmund. From this point the existing railway line to Walvis Bay would be used.

Option 3 – Combination of Public Roads and Railway: This option would involve the use of the C28 to transport goods by truck to link with the existing railway infrastructure, located

just outside of Swakopmund. A railway siding would be required under this option to transfer loads from rail wagons to trucks and vice-versa.

Railway Siding – The siding would function as a loading/offloading facility of containerised materials between road and rail, and would entail a concrete pad of approx. 400m by 17m in dimension running road side alongside the existing railway line, with road access from the C34. The pad would include a loading crane – potentially a gantry crane on rails extending across the two siding rail lines. (Should this option prove feasible, the railway siding and the exact location thereof will be subjected to a separate EIA process, once more engineering information becomes available).

Access Road – In addition to the above, an internal access road will be required from the C28 to the mine site. The road would extend for approximately 7km, and would have a minimum width of 3.7 metres from the road centreline. It is envisioned that other linear infrastructure to the mine site (such as the water supply pipeline and powerlines) would all be positioned within this access road corridor.

1.2. WATER SUPPLY PIPELINE

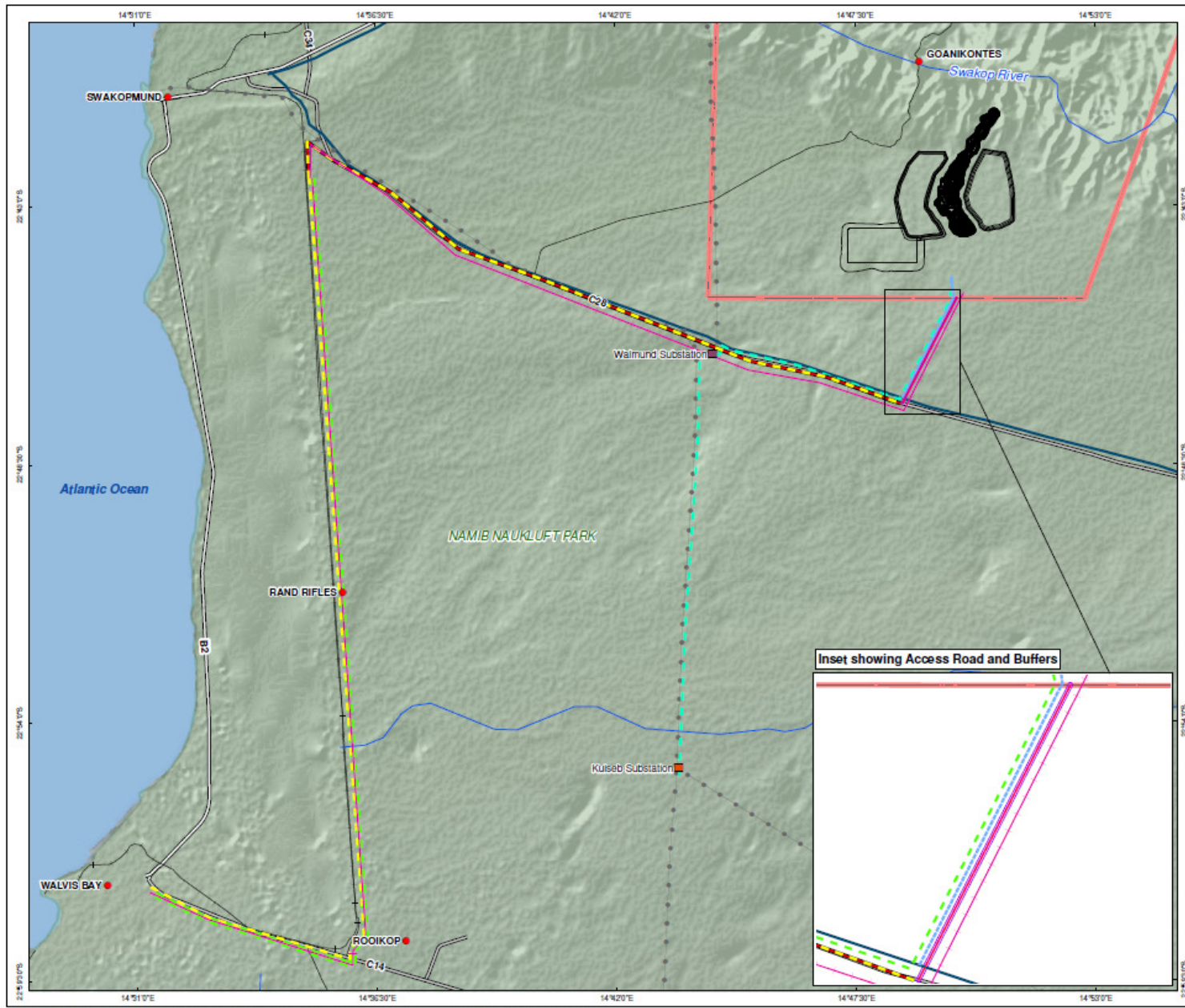
NamWater and the surrounding mines have an in-principle agreement to establish the Swakopmund South Pipeline Scheme, which will provide bulk water to local mines. This scheme allows for the sharing of bulk infrastructure as recommended in the Uranium Rush Strategic Environmental Assessment (SEA). A separate EIA is presently being prepared for this scheme under the auspices of Namwater.

To supply the Etango mine, a dedicated pipeline would need to be established from the Namwater off-take to the mine site. This pipeline would extend for approximately 7km, running parallel and adjacent to the proposed access road. The pipeline would have a nominal 500mm diameter and would be located above ground.

1.3. POWERLINE INFRASTRUCTURE

There are limited options in terms of power supply infrastructure within close proximity to the Etango Mine site. This includes a temporary supply line for construction purposes, which is proposed from the Walmund substation located approximately 12km to the south-west of the mine site.

Long-term energy requirements can be met by NamPower from the 220kV National Grid through the Kuiseb Substation. A permanent 29km long transmission line will be established between the Kuiseb Substation and the mine site. The proposed route would likely follow parallel and adjacent to the existing transmission line linking the Kuiseb Substation and the Walmund Substation, and thereafter along the C28 to the mine site.



Legend

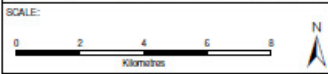
- Towns
- Kuseb Substation
- Waimund Substation
- Trunk Roads
- Main Roads
- District Roads

Services

- Existing powerlines
- Alternative Planned Etango Powerline
- Planned Etango Water Pipeline
- Railway Line
- Water Pipeline
- Ripios, Pit and WRDs
- Proposed Access Road
- Proposed Road
- Proposed Railway Line
- Proposed Railway Portion 2
- Proposed Road Route 1

Access Road Buffers

- Reserve (60m)
- Width (10m)
- Ept3345 (2011)



TITLE:
Location of the Site and Proposed Linear Developments

CLIENT:
Bannerman Mining Resources (Namibia) (Pty) Ltd

DATE: Feb 2011	CHECKED: MDC	Project: 0112091
DRAWN: LDT	APPROVED: ME	SCALE: 1 : 140 000

DRAWING: Locality_Rev3.mxd	REV: 3
-------------------------------	-----------

ERM
 Hatfield Bridge 3C
 213 Richard Street, Hatfield,
 Pretoria, South Africa
 Tel: +27 12 342 2895
 Fax: +27 12 430 4689

Projection: UTM 33S, Datum: WGS 84
 Source: Bannerman, East Data and Maps, PFF
 Inset: ESRI Data and Maps

SIZE:
A3

It is unlawful for any firm or individual to reproduce copyrighted maps, graphics or drawings, in whole or in part, without permission of the copyright owner, ERM Southern Africa (Pty) Ltd ©

C:\0112091_Bannerman_Namibia_Globe_Bannerman_Maps\Map3.mxd Locality_Rev3.mxd

2. ASSESSMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS

The various linear infrastructure options were assessed in terms of their potential impact on the natural and/or social environment. The findings of this assessment can be viewed in the table below. **Overall the impact on the natural or social environment is low to moderate negative, assuming proper mitigation measures are adopted.**

Alternatives		Biophysical Environment				Biological Environment			Socio-Economic		
		Air Pollution	Noise Pollution	Geology and Soils	Geology	Floral Species and Communities	Faunal Species	Biodiversity within NNP	Road Users and Traffic Safety	Investment in Infrastructure	Eco Tourism
Transport Routes	Public Roads	Moderate	Negligible	Low	Low	Low	Low	Low	Low	Low Benefit	Moderate
	Railway Transport	Moderate	Negligible	Moderate	Moderate	Moderate	Low	Moderate	Moderate	No Benefit	Moderate
	Road and Railway	Moderate	Negligible	Low	Low	Low	Low	Low	Low	Low Benefit	Moderate
Water Supply	Water Pipeline Route	Negligible	Negligible	Low	Low	Low	Low	Low	No Impact	No Benefit	No Benefit
Powerline Route	Walmund Line	Negligible	Negligible	Moderate	Moderate	Moderate	Low	Low	No Impact	No Benefit	Moderate
	Kuiseb Line	Negligible	Negligible	Moderate	Moderate	Moderate	Low	Moderate	No Impact	No Benefit	Moderate
Other Activities	Access Road	Moderate	Negligible	Low	Low	Low	Low	Low	Low	No Benefit	No Benefit
	Railway Siding	Moderate	Negligible	Low	Low	Low	Low	Low	Low	No Benefit	No Benefit

3. SUMMARY OF ESIA FINDINGS

- All three transport alternatives (road, rail and combination of both) are considered feasible from an environmental and/or social perspective.
- The railway line will have a higher environmental impact due to soil disturbance required for construction and the associated loss of vegetation communities and faunal habitats, and thus is not favoured by the ESIA.
- The road option will have minimal environmental impact; however the increase in traffic volumes will impact on local road conditions and will result in an increase in traffic risks.
- The combined use of road and rail is considered the preferred option – although this option will require the establishment of a railway siding, which will require a separate ESIA process.
- Bannerman will need to commit to the findings of the Swakopmund Southern Water Scheme EIA, in terms of bulk water supply, a process which is being run independently by Namwater.
- The dedicated water pipeline to the mine site is considered environmentally and socially acceptable on the assumption that it will be located within the access road reserve.
- Over 28km of new powerlines will need to be established between the substations and the mine site. The impact of the powerlines on the visual landscape will be moderate and can be mitigated if the

new powerlines run in parallel and adjacent to existing powerlines. (A final route will, however be selected by Nampower, and may also be subject to a separate EIA process).

- The majority of impacts from powerlines will be as a result of required maintenance tracks. This impact can be greatly reduced if existing tracks associated with existing powerlines are used, negating the need for new tracks.
- A linear infrastructure corridor from the C28 to the mine site containing all required linear infrastructure is proposed, and is in keeping with the recommendations made in the SEA.
- This access road should be aligned so as to avoid washes and drainage lines as much as possible. A proposed alignment is provided in the ESIA, but should be subject to detailed engineering design.

More Information available

- Background Information Document on the Amendment to the ESIA and ESMP is available on: www.erm.com/bannerman_etango and www.asecnam.com
- Strategic Environmental Assessment for the central Namib Uranium Rush is available on: www.saiea.com/uranium/index.html
- **Both Background Information Documents** are available at the following venues: Swakopmund library, Woermann House and the Ministry of Mines and Energy library, Aviation Road, Windhoek.

We welcome comments from Stakeholders

A draft ESIA for the Linear Infrastructure, as well as a draft Amendment to the Etango Project ESIA will be ready for scrutiny in mid March. Meanwhile, we want to draw your attention to the main findings and recommendations of this project at the public meetings to be held on:

Windhoek:	Wednesday 23rd February 2011 at 17.30 at the Ministry of Mines and Energy Auditorium, Aviation Rd.
Swakopmund:	Thursday 24th February at 17.30 at the Namib Primary School, Sam Nujoma Dr.

Please send all comments to: A. Ashby: aaplm@mweb.com.na or SMS to 081 650 5071. The public consultation period runs until 4th March 2011. All comments will be recorded and addressed in the final ESIA and ESMP.