



Final Basic Assessment Report

Proposed bulk water supply pipeline
connecting the eMalahleni Reclamation
Plant with Khanyisa Power Station,
eMalahleni, Mpumalanga Province

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ABBREVIATIONS

ACC	Air Cooled Condenser
AOL	Anglo Operations Limited
AOLTC	Anglo American Thermal Coal
AEL	Air Emissions License
AO	Anglo Operations
AQMP	Air Quality Management Plan
BID	Background Information Document
Capex	Capital Expenditure
CARA	Conservation of Agricultural Resources Act (No. 43 of 1983)
CFB	Circulating Fluidised Bed
CO ₂	Carbon Dioxide
DEA	Department of Environmental Affairs
DEIR	Draft Environmental Impact Report
DMR	Formerly Department of Minerals and Energy, now Department of Mineral Resources (DMR)
DSR	Draft Scoping Report
DR	District road
DWS	Department of Water and Sanitation (formerly the Department of Water Affairs and Forestry)
Dx	Distribution (in the electricity sector)
EAP	Environmental Assessment Practitioner
EAPSA	Environmental Assessment Practitioners of South Africa
ECA	Environment Conservation Act (No. 73 of 1989)
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
EIR	Environmental Impact Report
ELM	Emalahleni Local Municipality
EMPr	Environmental Management Programme
EWRP	Emalahleni Water Reclamation Plant
EOI	Expression of Interest

FSR	Final Scoping Report
GA	General Authorisation in terms of the National Water Act (No. 36 of 1998)
GN	Government Notice
ha	hectare
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
IWULA	Integrated Water Use License Application
km	kilometre
kV	kilovolt
l	litre
LM	Local Municipality
m	metre
m ³	cubic metre
MDARDLEA	Mpumalanga Department of Agriculture, Rural Development, Land and Environment Affairs
MBCP	Mpumalanga Biodiversity Conservation Plan
NEMA	National Environmental Management Act (No. 107 of 1998)
NEM:WA	The National Environmental Management: Waste Act (No. 59 of 2008)
NEM:AQA	The National Environmental Management: Air Quality Act (No. 39 of 2004)
NHRA	National Heritage Resources Act (No. 25 of 1999)
NWA	National Water Act (No 36 of 1998)
PAIA	Promotion of Access to Information Act (Act 2 of 2000)
PAJA	Promotion of Administrative Justice Act (Act 3 of 2000)
PPP	Public Participation Process
RfQ	Request for Quotation
RSA	Republic of South Africa
SANBI	South African National Biodiversity Institute
SAHRA	South African Heritage Resources Agency

SANS	South African National Standard
SDF	Spatial Development Framework
ToR	Terms of Reference
WMA	Water Management Area
WWTW	Wastewater treatment works
WTW	Water treatment works
ZAR	South African Rand

GLOSSARY OF TERMS

Airshed	Part of the atmosphere that behaves in a coherent way with respect to the dispersion of emissions. It typically forms an analytical or management unit and is also a geographic boundary for air quality standards
Base load	Electricity generated to meet the continuous need for electricity at any hour of the day or night at all times and during all seasons
Environment	The surroundings (biophysical, social and economic) within which humans exist and that are made up of <ul style="list-style-type: none"> i. the land, water and atmosphere of the earth; ii. micro organisms, plant and animal life; iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing
Environmental Impact Assessment (EIA)	A study of the environmental consequences of a proposed course of action.
Environmental Impact Report (EIR)	A report assessing the potential significant impacts as identified during the scoping phase.
Environmental impact	An environmental change caused by some human act
Peaking or peak load	Peaking refers to the periods between approximately 06:00 and 09:00 in the mornings and 18:00 and 21:00 in the evenings when electricity usage “peaks”
Public Participation Process	A process of involving the public in order to identify needs and address concerns, in order to contribute to more informed decision-making relating to a proposed project, programme or development
Mothballed	Withdrawn from service (used in reference to power stations).
Red Data Book (South African)	An inventory of rare, endangered, threatened or vulnerable species of South African plants and animals
Scoping	A procedure for determining the extent of and approach to an EIA, used to focus the EIA to ensure that only the significant issues and reasonable alternatives are examined in detail
Scoping Report	A report describing the issues identified during the scoping phase
Witbank	Former name of eMalahleni

1. INTRODUCTION

Anglo Operations (Pty) Ltd (AO) applied for an environmental authorisation for the coal-fired Khanyisa Power Station (hereinafter referred to as Khanyisa IPP Project) and associated infrastructure proposed near eMalahleni in 2011. AO's goal was to procure its own dedicated supply for a portion of its electricity requirements via the Khanyisa Independent Power Producer (IPP) project. Such supply was aimed at increasing Anglo American's security of supply and limiting the impact of electricity price increases. A key motivator for the project is that electricity generating capacity in South Africa is expected to remain constrained for a number of years. An environmental authorisation (EA) for the 450 MW ACWA Power Khanyisa IPP Project was granted in October 2013.

AO has transferred all duties and responsibilities related to the Khanyisa project to International Company for Water and Power Project (hereafter referred to as Paverstar Trading). Paverstar Trading is an Independent Power Producer (IPP) and will be bidding the Khanyisa IPP Project under the Department of Energy's Coal Baseload Programme. The aim will be for Paverstar Trading to build, own, operate and decommission the power station. The power station will contribute to relieving the national/ Eskom generation capacity shortages. Paverstar proposes a few changes to the initial Environmental Authorisation and one of these changes includes the alignment of the water pipeline connecting the Khanyisa Power Station with the eMalahleni Water Reclamation Plant. Due to the fact the the alignment of the water pipeline is proposed on an area that has not previously been assessed during the initial EIA process, the approval of this water pipeline cannot be considered through an Environmental Authorisation Amendment process. A Basic Environmental Impact Assessment process is therefore undertaken in order for the Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDLEA) to consider the alignment of the water pipeline.



Figure 1.2: Locality map – 400kV Substation and Power line

1.1. Details of the EAP

ACWA Power appointed Aurecon Pty Ltd to conduct the Environmental Impact Assessment (EIA) for the realignment of the water pipeline for the ACWA Power Khanyisa IPP Project.

Mr. Barend Smit, who is the Project Director and Unit Manager for the Environmental Unit at Aurecon, has gained over 25 years' experience in the strategic management of environmental aspects relating to the construction of bulk water supply projects such as dams, pipelines and tunnels, but also relating to roads, industrial and residential developments, and recreation and tourism infrastructure. He gained extensive experience in leading, managing and conducting a range of environmental impact assessments, and the preparation and subsequent implementation of project specific environmental management plans. Mr Smit has also managed social impact studies in the course of his work, and has experience in liaison with local communities in project areas. He gained significant experience in the contractual aspects of implementing environmental management plans as part of larger construction projects, and the procurement of specialist services for impact assessments. In addition, he has undertaken landscape designs especially for rehabilitation of rock quarries, borrow pits and spoil dumps in relation to tunnels, dams and roads, in addition to purely aesthetic landscape design. He is experienced in working as part of consortiums or independent projects teams set up for large scale engineering projects. Mr. Smit is registered with the South African Council for the Landscape Architectural Profession (SACLAP) as a Professional Landscap Architect.

Reuben Heydenrych reviewed the deliverables for the project, has been involved in Environmental Impact Assessment (EIA) processes in South Africa and in various other African countries, as required by relevant national legislation and in terms of international requirements as EIA team leader and team member. These projects have included exemptions, scoping, and full EIAs for projects such as power generation, transmission and distribution, rezoning, filling stations, water and sewage pipelines, roads (national, provincial and municipal), residential developments, game lodges, telecommunications structures, mines, infrastructure in sensitive environments and industrial processes. Reuben obtained a Masters in Philosophy: Environmental Management from the University of Cape Town (UCT), South Africa in 1993 and a Bachelors' Degree in Landscape Architecture from the University of Pretoria, South Africa, in 1991. Reuben is registered as a professional landscape architect with the South African Council for the Landscape Architectural Profession (SACLAP).

The EIA process and coordination of the EIA process was managed by Anne-Mari White, an environmental project leader with Aurecon. She will also provide overall project management (including client liaison, financial management and progress reporting). Anne-Mari is an Environmental Specialist, who started her studies at the University of Northwest and completed her BSc (Environmental Management) degree at the University of South-Africa (UNISA) in 2007. Anne-Mari is also registered with the South African Council for Natural Scientific Professions as a Certificated Natural Scientist (Reg No 300067/15). In addition to her qualification, she has done short courses in soil classifications and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal) as well as Environmental Impact Assessments (University of Northwest).

1.2. Policy, Legal and Administrative Framework

1.2.1. EIA requirements

The National Environmental Management Act (No. 107 of 1998) (NEMA), amongst other things, regulates the procedure and criteria as contemplated in Chapter 5 of NEMA relating to the submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities in order to avoid detrimental impacts on the environment, or where it cannot be avoided, ensure mitigation and management of impacts to acceptable levels, and to optimise positive environmental impacts, and for matters pertaining thereto.

ACWA Power has the responsibility to ensure that the proposed activity and EIA process conforms to the principles¹ of NEMA. In developing the EIA process, Aurecon has been cognisant of this need, and accordingly the EIA process has been undertaken in terms of NEMA and the EIA Regulations promulgated in December 2014.

The EIA regulations identify certain activities that require authorisation from the competent environmental authority, in this case the Mpumalanga Department of

¹ NEMA Principles, Chapter 1, Sections 1-4

Agriculture, Rural Development, Land and Environment Affairs (MDARDLEA), before commencing. Listed activities in Government Notice (GN) No. 984 of 2014 require a Scoping and EIR process whilst those in GN R 983 and 985 of 2014 require a BA (unless they are being assessed under a Scoping and EIR process). The activities being applied for in this EIA process are listed in **Table 1**.

Table 1: Listed activities in terms of NEMA GN No. 984 of 2014

NO.:	Listed Activity:	Relevant to:
R983 of 2014, Activity 9	The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water – (i) With an internal diameter of 0.36 metres or more; or (ii) With a peak throughput of 120 litres per second or more;	Construction of the bulk water supply pipeline on an area not previously assessed during the EIA process.
R985 of 2014, Activity 12	The clearance of an area of 300 m ² or more of indigenous vegetation, except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance plan	Construction of the water pipeline within a critical biodiversity plan as as identified in bioregional plans.

1.2.2. Water Use License requirements

The water pipeline will traverse a wetland area and for this reason a Water Use License Application (WULA) must also be submitted to the Department of Water Affairs and Sanitation (DWS) for approval. According to Section 21 of the Water Act 36, of 1998, the following activities will apply due to the water pipeline crossing the wetland:

21 (c): Impeding or diverting the flow of water;

21 (i): Altering the bed, banks, course or characteristics of a watercourse.

1.2.3. Other authorisations

Application to the DEA for Environmental Authorisation in terms of NEMA does not absolve the applicant from complying with other legal requirements. In this regard the following national and provincial legislation may apply and is considered in the assessment process:

- National Water Act, 1998 (Act No. 36 of 1998);
- Road Ordinance 22 of 1957;
- Promotion of Access to Information Act, 2000 (Act No. 2 of 2000);
- National Heritage Resources Act, 1999 (Act No. 25 of 1999);
- National Forests Act, 1998 (Act No. 84 of 1998); and
- National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

1.2.4. International Finance Corporation Performance Standards

The IFC has defined a set of Performance Standards on Social and Environmental Sustainability. The Performance Standards likely to be triggered by the project are listed below and the applicant must also comply with these Performance Standards:

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
- Performance Standard 2: Labor and Working Conditions
- Performance Standard 3: Resource Efficiency and Pollution Prevention
- Performance Standard 4: Community Health, Safety, and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management
- Performance Standard 8: Cultural Heritage

1.3. The Project

1.3.1. Need and Desirability

The Emalahleni Water Reclamation Plant (EWRP) is a public-private partnership that was jointly undertaken by Anglo Operations Limited (AOL) and the eMalahleni Local Municipality (ELM). The EWRP was constructed to treat underground water from AOL's underground mines situated in the eMalahleni coalfields. AOL has constructed a dedicated water pipeline running from the EWRP to service AOL's Greenside, Kleinkopje and Landau collieries and various nearby service departments for domestic use.

The Khanyisa Power project will require a dedicated water pipeline to service the needs of the power station. A separate pipeline will be constructed from the EWRP to the power station site to serve the water consumption needs of the power station. The existing water pipeline will be diverted and/or reconstructed to service the ongoing mining operations at Greenside, Kleinkopje and Landau collieries.

ACWA Power proposes to change alignment of the water pipeline from what was proposed during the EIA process for Khanyisa Power Station. Anglo American proposed and preferred the water pipeline to be aligned parallel to the coal conveyor.

1.3.2. Description of the Project

The project essentially comprises the construction of a bulk water supply pipeline of 4.4km, connecting the Khanyisa IPP Project with the eMalahleni Reclamation Plant. This pipeline will have an internal diameter of more than 0.36m.

1.3.3. Project Location

The proposed water pipeline is proposed on portions 0 and 3 of the farm Groenfontein 331 JS.

Coordinates of the water pipeline:

Start of linear activity: 25° 58' 10.93" S
 29° 13' 24.64" E

Middle of linear activity: 25° 57' 24.37" S
 29° 12' 19.47" E

90 degree north-east: 25° 56' 46.09" S
 29° 11' 38.58" E

End of linear activity: 25° 56' 39.75" S
 29° 11' 50.44" E

2. THE PUBLIC PARTICIPATION PROCESS

The purpose of this chapter is to provide an outline of the public participation process (PPP) to date and the way forward with respect to the EA amendment process.

Engagement and consultation with Interested and Affected Parties (I&APs) forms an integral component of the EA amendment process and enables, *inter alia*, potentially directly affected landowners, neighbouring landowners and communities, authorities and key stakeholders to provide input into the proposed amendment.

I&APs were identified during the EIA phase of the project prior to its authorisation in 2013. The registered I&APs who were involved during the previous EIA process and in currently pending application for amendment of the environmental authorisation have been informed of the environmental application for the substation and power line by means of the following methods:

- Distributing the Background Information Document to all registered I&APs (either by post or email);
- Placing a site notice at the proposed site (see Annexure B); and
- Placing a newspaper advert in the Middelburg Observer and Witbank News on 5 June 2015.

The registered I&AP list is attached as Appendix D.1

The draft Basic Assessment Report (BAR) was made available for review to all I&APs from 13 October 2015. All I&APs were given the opportunity until 12 November 2015 to comment on the Draft BAR. No comments were received during this period.

3. CONSIDERATION OF ALTERNATIVES

Site selection is a complicated and multi-faceted issue, which is essential to the success of this application and ultimately to the proper, responsible and sustainable operation of the proposed project.

The alignment of the water pipeline is complicated by rights for underground coal mining, which cover much of the area. The available land is constrained by both undermined areas, where construction is not permitted, and areas earmarked for future underground mining.

3.1. Site Location Alternatives

There are very few feasible alternative positions that are not affected by potential future underground mining and for this reason no other feasible location alternatives could be identified. The alignment that was approved during the EIA process for Khanyisa Power Station was found to be not preferred from Anglo American's perspective as it will affect future underground mining.

3.2. No – Go Alternative

The 'no-go' alternative is the option of not realigning the proposed water pipeline at the proposed location. As described earlier in the report, the water pipeline has already been approved, but the current location is not feasible for AOL. Should the relocation not be approved, the water pipeline will be aligned on an area that will interfere with future mining operations.

Considering the highly degraded state of the environment in the proposed project area, due to coal mining over several decades, it is unlikely that an environmental fatal flaw would be discovered to make the no-go alternative the preferred alternative.

4. DESCRIPTION OF THE AFFECTED ENVIRONMENT AND POTENTIAL IMPACTS

The description of the affected environment below draws on existing knowledge from published data, previous studies, specialist investigations, and site visits to the area. The identification of potential impacts is broad. In cases where there is currently inadequate information, a ToR and proposed specialist consultant is provided.

4.1. Receiving Environment

4.1.1. Topography

The landscape is characterised by slightly undulating plains, including some low hills and pan depressions. The terrain is dominated by level to gently undulating plains with limited relief at tributaries of the Olifants River. The altitude range is 1 540 – 1 560 mamsl.

4.1.2. Climate

The region has strongly seasonal summer-rainfall, with very dry and cold winters, with mean annual precipitation of 650 – 900mm. During the winter months the average temperatures vary between a minimum of 1°C and a maximum of 16°C. During the summer months average minimum temperatures of 13°C and maximum temperatures of 25°C can be expected.

4.1.3. Geology and Soils

The regional geology of the study area is dominated by Ecca Group arenite, shale and coal of the Vryheid Formation. The overburden at the adjacent Klipkopje Colliery was found to be mostly sandstone, siltstone and shale. While dolerite intrusions are present just below the surface, there are no outcrops within the study area (Oryx Environmental, 2003).

The study area falls within Ba4 landtype, which is a plinthic catena in which upland duplex and marginal soils are rare. Red, yellow and greyish soils with low to medium base status are dominant.

The current land-use pattern on site is predominantly cultivation (temporary, dryland) and mining (surface-based and underground), with scattered patches of degraded, unimproved grassland, waterbodies, wetlands and plantations. This has resulted in a historic disturbance, albeit minimal, to the soil horizons and structure.

4.1.4. Vegetation

The study area falls within the Grassland Biome and more specifically the Eastern Highveld Grassland vegetation type. In its natural undisturbed state the vegetation is short dense grassland dominated by the usual Highveld grass composition with small, scattered rocky outcrops with wiry, sour grasses and some woody species.

This form of grassland can be found in both Mpumalanga and Gauteng Provinces, located on the plains between Belfast in the east and the eastern side of Johannesburg in the west and extending southwards to Bethal, Ermelo and west of Piet Retief. It generally occurs at altitudes of 1520 – 1780 masl, but also as low as 1300 masl. Site-specific vegetation communities were identified by ECOREX Consulting Ecologists CC, during various field trips and are described as follows:

- *Fuirena-Helichrysum* Wetland;
- *Seriphium-Imperata* Secondary Grassland;
- *Themeda-Tristachya* Untransformed Grassland;
- Transformed Grassland; and
- Transformed.

In pristine condition *Aristida*, *Digitaria*, *Eragrostis*, *Themeda* and *Tristachya* grass species dominate. The tree species *Acacia caffra*, *Celtis africana*, *Diospyros lycoides subsp. lycoides*, *Parinari capensis*, *Protea caffra* and shrubs / forbs *P. welwitschii* and *Rhus magalismsontanum* are also found.

Broad vegetation communities were identified using Google Earth™ satellite imagery, and the extent of transformation or degradation was assessed in order to determine representivity of vegetation types. The vegetation community boundaries were ground-truthed during fieldwork

in order to confirm current position. Potentially occurring plant species of conservation concern were derived from species lists for the quarter-degree grids 2529CC and 2629AA in the SANBI Plants of South Africa database (POSA), and from the PlantDat threatened species database of the MTPA. The likelihood of occurrence of these species was determined through personal field experience of those species and reference to individual accounts in Raimondo et al. (2009). From this background, the species of conservation concern listed in **Table 4.1** were identified as potentially being present on the site.

Table 4.1: Plant species of conservation concern potentially occurring in the study area

Species	Red Data Status	Growth Form	Habitat	Likelihood	Reason
<i>Crinum bulbispermum</i>	Declining	Geophyte	Along rivers or streams, wetlands	Moderate	Limited habitat present
<i>Crinum macowanii</i>	Declining	Geophyte	Grassland	High	Much habitat present
<i>Pachycarpus suaveolens</i>	Vulnerable	Herb	Grassland	Unlikely	No habitat present
<i>Ilex mitis</i> var. <i>mitis</i>	Declining	Tree	Riverine forest	Unlikely	No habitat present
<i>Callilepis leptophylla</i>	Declining	Herb	Grassland	Confirmed	
<i>Eucomis autumnalis</i> subsp. <i>clavata</i>	Declining	Geophyte	Grassland, wetlands	Moderate	Limited habitat present
<i>Hypoxis hemerocallidea</i>	Declining	Geophyte	Grassland, wetland edge, open woodland	Moderate	Limited habitat present
<i>Frithia humilis</i>	Vulnerable	Succulent	Flat sandstone sheets with shallow beds of fine sand	Unlikely	No habitat present
<i>Pavetta zeyheri</i> subsp. <i>middelburgensis</i>	Vulnerable	Shrub	Wooded rocky outcrops	Unlikely	No habitat present
<i>Encephalartos lanatus</i>	Vulnerable	Shrub	Rocky hill slopes along major river valleys	Unlikely	No habitat present
<i>Encephalartos middelburgensis</i>	Critically Endangered	Tree	Rocky hill slopes along major river valleys	Unlikely	No habitat present

4.1.5. Mpumalanga Biodiversity Conservation Plan

The Mpumalanga Biodiversity Conservation Plan (MBCP) (Ferrar & Lötter, 2009) is a spatial assessment of the conservation value of land in Mpumalanga and a decision-support tool to

assist planners and decision-makers in sustainable land-use planning. The MBCP is regarded as the foundation for a provincial Biodiversity Conservation Strategy, as required by law. Mpumalanga's biodiversity has been ranked into six categories by the MBCP. The first four categories (protected areas, irreplaceable areas, highly significant areas, important & necessary areas) are not considered to be unsuitable for development, but should be managed as living landscapes, whereas the last two categories (areas of least concern and areas with no natural habitat remaining) are considered available for development.

Much of the general vicinity of the study areas has been classified as least concern or no natural habitat remaining, because of high levels of habitat transformation and fragmentation. Areas of natural grassland have been classified as "*Important*" and "*Necessary*", including those grasslands within the study area.

Guidelines for each MBCP category are given to assist planners and decision-makers. The land-use guidelines for *Important* and *Necessary* areas allow for restricted industrial development (which would include power stations) and restricted linear engineering structures, but not surface mining or dumping.

4.1.6. Economic Uses

These soils are excellent for agronomy, and extensive areas are cultivated for maize and other crops. In its natural state it is intensively grazed by cattle and sheep. The actual proposed development site has been transformed and is currently used for both agriculture and mining.

5. METHOD OF ASSESSING THE SIGNIFICANCE OF POTENTIAL ENVIRONMENTAL IMPACTS

This section outlines the proposed method for assessing the significance of the potential environmental impacts outlined above. As indicated, these include both operational and construction phase impacts as well as the impacts assessed by the specialists.

For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) would be described. These criteria would be used to ascertain the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the EIR would represent the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The tables on the following pages show the scale used to assess these variables, and defines each of the rating categories.

Table 5.1: Assessment criteria for the evaluation of impacts

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	Regional	Beyond a 30 km radius of the candidate site.
	Local	Within a 30 km radius of the candidate site.
	Site specific	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	High	Natural and/ or social functions and/ or processes are <i>severely</i> altered
	Medium	Natural and/ or social functions and/ or processes are <i>notably</i> altered
	Low	Natural and/ or social functions and/ or processes are <i>slightly</i> altered
	Very Low	Natural and/ or social functions and/ or processes are <i>negligibly</i> altered
	Zero	Natural and/ or social functions and/ or processes remain <i>unaltered</i>

CRITERIA	CATEGORY	DESCRIPTION
Duration of impact	Construction period	Up to 3 years
	Medium Term	Up to 5 years after construction
	Long Term	More than 10 years after construction

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is explained in **Table 5.2**.

Table 5.2: Definition of significance ratings

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
High	<ul style="list-style-type: none"> High magnitude with a regional extent and long term duration High magnitude with either a regional extent and medium term duration or a local extent and long term duration Medium magnitude with a regional extent and long term duration
Medium	<ul style="list-style-type: none"> High magnitude with a local extent and medium term duration High magnitude with a regional extent and construction period or a site specific extent and long term duration High magnitude with either a local extent and construction period duration or a site specific extent and medium term duration Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term Low magnitude with a regional extent and long term duration
Low	<ul style="list-style-type: none"> High magnitude with a site specific extent and construction period duration Medium magnitude with a site specific extent and construction period duration Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term Very low magnitude with a regional extent and long term duration
Very low	<ul style="list-style-type: none"> Low magnitude with a site specific extent and construction period duration Very low magnitude with any combination of extent and duration except regional and long term
Neutral	<ul style="list-style-type: none"> Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the PROBABILITY and CONFIDENCE of this impact would be determined using the rating systems outlined in Error! Reference source not found. and Error! Reference source not found.5.4 respectively. It is important to note that the significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the REVERSIBILITY of the impact is estimated using the rating system outlined in Error! Reference source not found.5.5.

Table 5.3: Definition of probability ratings

PROBABILITY RATINGS	CRITERIA
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

Table 5.4: Definition of confidence ratings

CONFIDENCE RATINGS	CRITERIA
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

Table 5.5: Definition of reversibility ratings

REVERSIBILITY RATINGS	CRITERIA
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause of the impact is removed.

6. CONSTRUCTION AND OPERATIONAL PHASE IMPACTS

The construction and operational phases of the bulk water supply pipeline are likely to result in a number of negative impacts on the biophysical and the social environment.

The construction phase impacts could potentially include:

- Disturbance of flora and fauna;
- Sedimentation and erosion of the wetland;
- Pollution of water resource;
- Potential spillage of hazardous substances;
- Heritage Impact;
- Increased risk of fire;
- Security risks;
- Health issues;
- Noise pollution;
- Light pollution;
- Visual impacts
- Dust impacts; and
- Social impacts.

The significance of construction phase impacts is likely to be limited by their relatively short duration. Many of the construction phase impacts can be mitigated through the implementation of an appropriate EMP that will be submitted to provide mitigation and ascribe responsibilities for many of the construction phase impacts.

The water pipeline will cause no impacts during the operational phase.

6.1. Construction Phase Impacts

6.1.1. Ecological Impact

Description of Environment

The vegetation type present on site can be classified as the Mesic Highveld Grasslands. This vegetation type is made up of highly productive sourveld grasslands characterised by long-lived grasses that favour re-sprouting. These grasslands are adapted to a climate characterised by high summer rainfall (700 – 1200mm per annum), combined with warm summer temperatures and cool to cold winters with a moderate incidence of frost.

The area along and adjacent to the pipeline is classified into a number of categories:

- Moderately modified;
- Heavily modified;
- Other natural areas; and
- CBA Optimal.

According to the MTPA database for conservation important biota, 14 species of conservation-important plants may potentially occur on the site, but given the Moderate to Highly modified status of the terrestrial ecosystems along the proposed water pipeline, the probability of occurrence can be described as improbable (less than 10%).

Impact Assessment

Clearing the vegetation for the construction of the water pipeline may have the following ecological impacts:

- Disturbance of flora and fauna;
- Loss of conservation-important plant species; and
- Increased invasion by alien species.

Due to the already degraded state of the environment caused by agriculture and anthropogenic activities, the impact is of low significance before the implementation of any mitigation measures.

Ref Nr.	Potential impact	Site	No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Construction Phase							
1	Ecological Impact	Proposed	No mitigation	medium	Site specific	Short Term	Low
		Proposed	Mitigation	Low	Site Specific	Short Term	very low
		No-go alternative	No mitigation	Zero	Site Specific	Short Term	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Short Term	Neutral

Mitigation Measures

- The water pipeline must be constructed as close as possible to the existing conveyor belt.
- An ecological walk through must be undertaken during the summer to identify any plant of conservation importance to be replanted.
- An alien plant control programme must be implemented.
- Plants of conservation importance found, must be replanted in the adjacent Degraded Secondary Grassland.

Cumulative Impacts

The grassland is already degraded and further construction activities will cause a further deterioration of the grassland along the water pipeline.

6.1.2. Sedimentation and erosion of the wetland

Description of the Environment

There are two wetlands along the proposed water pipeline footprint:

- A permanent channelled valley bottom floodplain wetland (north western part of the pipeline);
 - This wetland has been significantly transformed and affected by surrounding anthropogenic activity. The wetland can be classified as Critically Modified.
- Small seepage wetland (south eastern part of the pipeline)

- This wetland might have been larger in the past but has been completely transformed as a result of the conveyor belt, adjacent tarred road and agricultural activities. This wetland can also be classified as Critically Modified.

The sediment loads of any drainage depressions and wetlands or pans may increase due to the excavations on the site. This would be exacerbated during the wet season and during intense rainfall events. The bulk water supply pipeline will have to traverse both wetland areas before connecting Khanyisa Power Station with the eMalahleni Water Reclamation Plant.

A Wetland Delineation Study was done to delineate the wetland areas and assess their ecological importance. During this investigation it was found that the wetlands have very low ecological importance and sensitivity due to the small extent of the remaining wetlands, their isolation and history of transformation.

It is proposed that the water pipeline be placed through the wetland using the existing embankments and culverts already used by the existing conveyor belts. This would result in very little disturbance to the wetland areas. The vegetation of the wetland will also have a short-term and localised impact.

Impact Assessment

Excavation activities will take place within the identified wetland areas, which means that sediment loads will increase during the construction phase. The possibility of erosion and sedimentation therefore increases during this period and even more so during the rainy season. The impact is therefore of medium significance and mitigation is required to minimise this impact to be of low significance.

Ref	No mitigation/ Mitigation						
Nr.	Potential impact	Site	Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
2	Sedimentation and Erosion	Proposed	No mitigation	Medium	Local	Construction	Medium
		Proposed	Mitigation	Low	Local	Construction	Low
		No-go alternative	No Mitigation	Zero	Local	Construction	Neutral
		No-go alternative	Mitigation	Zero	Local	Construction	Neutral

Mitigation Measures

Any disturbed area must be rehabilitated immediately after the construction of the pipeline.

Cumulative Impact

No cumulative impact is expected during the construction phase of the pipeline.

6.1.3. Potential pollution of water resources

Description of the Environment

The bulk water supply pipeline will have to traverse two wetland areas before connecting Khanyisa Power Station with the EWRP. Construction activities will therefore take place within the wetland areas.

Impact Assessment

Although the wetland was found to be of very low ecological importance and sensitivity, wetlands still play an important role in flood attenuation as they store water and release water during dry periods. The possibility of water pollution is increased with construction activities taking place within the wetland and for this reason the impact is of high significance before the implementation of mitigation measures.

Ref Nr.	Potential impact	Site	No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
3	Potential pollution of water resource	Proposed	No mitigation	High	Local	Construction	High
		Proposed	Mitigation	Medium	Local	Construction	Medium
		No-go alternative	No mitigation	Zero	Local	Construction	Neutral
		No-go alternative	Mitigation	Zero	Local	Construction	Neutral

Mitigation Measures

All hazardous substances and material must be located as far as possible from the wetland area.

Cumulative Impact

No cumulative impacts are expected.

6.1.4. Potential spillage of hazardous substances

Description of the Environment

As at any construction site, various hazardous substances are likely to be used and stored on site. These substances include amongst other things, diesel, curing compounds, shutter oil and cement. Utilisation of such substances in close proximity to the aquatic environment such as wetlands or pans is of greater concern than when used in a terrestrial environment.

Impact Assessment

Construction activities and vehicles on site could potentially cause hazardous substances to spill and for this reason the significance of this impact is seen as medium before the implantation of mitigation.

Ref			No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Nr.	Potential impact	Site					
3	Spillage of hazardous substances	Proposed	No mitigation	Medium	Local	Medium Term	Medium
		Proposed	Mitigation	Low	Local	Medium Term	Low
		No-go alternative	No mitigation	Zero	Local	Medium Term	Neutral
		No-go alternative	Mitigation	Zero	Local	Medium Term	Neutral

Mitigation Measures

Use of hazardous substances at a construction site is controlled by various pieces of legislation. However, the management and protection of the environment would be achieved through the implementation of an EMP, which would, inter alia, specify the storage conditions of hazardous compounds and the emergency procedures to follow in the event of a spillage.

Cumulative Impact

No cumulative impact is expected.

6.1.5. Heritage Impacts

Description of the Environment

During the construction phase of the water pipeline, the possibility of affecting structures, which could be of heritage or social significance, exists. However, the Heritage Impact Assessment found no buildings or artefacts of cultural or historical value on the site.

Impact Assessment

No structures of historical or social value were identified during the site investigation and therefore no structure will be affected by the construction of the water pipeline. The heritage impact is therefore of low significance.

Ref			No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Nr.	Potential impact	Site					
4	Heritage Impact	Proposed	No mitigation	Low	Site Specific	Long Term	Low
		Proposed	Mitigation	Low	Site Specific	Long Term	very low
		No-go alternative	No mitigation	Zero	Site Specific	Long Term	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Long Term	Neutral

Mitigation Measures

The bulk of archaeological remains are normally located beneath the soil surface. It is therefore possible that some significant material were not located during the site survey and will only be revealed when the soil is disturbed. Should any material of cultural or historical significance, or skeletal remains be exposed during digging or excavating, SAHRA must be notified and all construction activities must be stopped and a Heritage/ Archaeological Specialist should be called in to determine proper mitigation measures.

Cumulative Impact

No cumulative impacts are expected.

6.1.6. Increased Risk of Fire

Description of the Environment

Temperatures in the Witbank can rise to 35°C or more in summer. Furthermore, the natural vegetation is prone to fires started by lightning strikes, mostly in summer.

Impact Assessment

Construction activities may increase the risk of fire in the area in the wet summer months and the dry winter months. The outbreak of fire at the construction site could have serious safety, economic and ecological implications and for this reason the impact is of medium significance before the implementation of any mitigation measures.

Ref			No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Nr.	Potential impact	Site					
5	Risk of fire	Proposed	No mitigation	Medium	Site Specific	Construction	Medium
		Proposed	Mitigation	Low	Site Specific	Construction	Low
		No-go alternative	No mitigation	Zero	Site Specific	Construction	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Construction	Neutral

Mitigation Measures

The risk of fire would be managed through the EMP, which would include procedures for dealing with emergency situations such as fires.

Cumulative Impact

No cumulative impact is expected.

6.1.7. Security risks

Description of the Environment

A large number of people are likely to be employed during construction, with the numbers rising and falling throughout the construction period, dependent on the activities taking place at the time. While the contractor would want to source construction labour locally, it is inevitable that there will be an influx of people to the area.

Impact Assessment

The increase in people to the area, and the periods where some construction workers are unemployed, could lead to an increase in crime and social friction in surrounding areas like eMalahleni, Ogies, Phola, Ga-Nala, Thubelihle, Rietspruit, Van Dyksdrift, Wilge and the surrounding areas. The impact is of medium significance.

Ref			No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Nr.	Potential impact	Site					
6	Security risks	Proposed	No mitigation	Medium	Local	Construction	Medium
		Proposed	Mitigation	Low	Local	Construction	Low
		No-go alternative	No mitigation	Zero	Local	Construction	Neutral
		No-go alternative	Mitigation	Zero	Local	Construction	Neutral

Mitigation Measures

Employ local labourers as far as possible.

Cumulative Impact

The unemployment rate in the area is already very high and unemployment leads to crime. There will be an influx of workers seeking employment, therefore adding to the unemployment and crime rate.

6.1.8. Health and Safety

Description of the Environment

The migration of construction workers into the eMalahleni region could result in an increase in the prevalence of diseases, including HIV/AIDS and tuberculosis, in the area. Construction activities also pose a safety risk to all construction workers and the public.

Impact Assessment

Health risks could be increased by an influx of sex workers to the area, fed by a large number of construction workers who are away from their families. Medical facilities in the area may not be equipped to deal with the increased requirement for healthcare as a result of the construction activities. Construction activities also increase the safety risk. Therefore, the significance of the impact has been rated as medium before the implementation of any mitigation measures.

Ref			No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Nr.	Potential impact	Site					
7	Health and Safety Issues	Proposed	No mitigation	Medium	Local	Construction	Medium
		Proposed	Mitigation	Low	Local	Construction	Low
		No-go alternative	No mitigation	Zero	Local	Construction	Neutral
		No-go alternative	Mitigation	Zero	Local	Construction	Neutral

Mitigation Measures

- All unattended open excavations must be adequately demarcated.
- All construction personnel must wear appropriate protection gear and adhere to Anglo American's rules and regulations.

Cumulative Impact

No cumulative impacts are expected.

6.1.9. Noise Pollution

Description of Environment

The construction site may operate 24-hours a day for a portion of the construction period. An increase in noise pollution would be expected from the operation of heavy machinery during the construction period and due to increased traffic.

Impact Assessment

The severity of this impact is reduced by to the low numbers of people in close proximity to area where the water pipeline is proposed. For this reason, the impact is regarded to be of low significance before mitigation is implemented.

Ref	No mitigation/ Mitigation						SIGNIFICANCE
Nr.	Potential impact	Site	Magnitude	Extend	Duration		
8	Noise pollution	Proposed	No mitigation	Low	Local	Construction	Low
		Proposed	Mitigation	Very Low	Local	Construction	Very Low
		No-go alternative	No mitigation	Zero	Site Specific	Construction	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Construction	Neutral

Mitigation Measures

- The contractor must use appropriate and effective silencing devices for operating tools;
- Stationary equipment must be housed in acoustic covers, screens or sheds to minimise the noise near noise sensitive areas; and
- No music is allowed on site.

Cumulative Impact

No cumulative impacts are expected.

6.1.10. Light Pollution

Description of Environment

Large floodlights are likely to be installed at the construction site to enable construction activities to continue 24 hours per day, when required.

Impact Assessment

There are no residential areas located adjacent to the area where the pipeline is proposed. Therefore, the significance of the impact of light pollution is low.

Ref			No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Nr.	Potential impact	Site					
9	Light pollution	Proposed	No mitigation	Low	Local	Long Term	Low
		Proposed	Mitigation	Very Low	Local	Long Term	Very low
		No-go alternative	No mitigation	Zero	Site Specific	Long Term	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Long Term	Neutral

Mitigation Measures

- No light must be directed to the adjacent road, to avoid blinding oncoming traffic.

Cumulative Impact

No cumulative impacts are expected.

6.1.11. Visual Impact

Description of Environment

During construction, the construction site might become untidy, with construction materials and waste being present. This could have a negative impact on the motorists travelling on road D2769.

Impact Assessment

The surrounding area is not visually attractive and no residents are found within a close proximity to the site. Therefore, the impact is of low significance before mitigation measures are implemented.

Ref			No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Nr.	Potential impact	Site					
10	Visual Impact	Proposed	No mitigation	Low	Local	Short Term	Low
		Proposed	Mitigation	Very Low	Local	Short Term	very low
		No-go alternative	No mitigation	Zero	Local	Short Term	Neutral
		No-go alternative	Mitigation	Zero	Local	Short Term	Neutral

Mitigation Measures

- Rubble and litter must be removed regularly and disposed of at a registered landfill site;
- Cluster construction activities on site;
- Cordon off construction site with shade cloth, if necessary.

Cumulative Impacts

No cumulative impacts are expected.

6.1.12. Dust Impacts

Description of Environment

The construction site may operate on a 24-hour basis at times and earthworks would be undertaken. These activities would exacerbate dust, especially in the dry winter months.

Impact Assessment

There are no residential areas located near the construction site and for this reason the impact has a low significance even before the implementation of mitigation measures.

Ref Nr.	Potential impact	Site	No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
1	Dust generation	Proposed	No mitigation	Low	Site Specific	Short Term	Low
		Proposed	Mitigation	Very Low	Site Specific	Short Term	Very Low
		No-go alternative	No mitigation	Zero	Site Specific	Short Term	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Short Term	Neutral

Mitigation Measures

- The construction site must be watered to control possible dust fallout or an appropriate alternative method must be used.

Cumulative Impact

The area can be very dusty during the dry months due to nearby mining operations. Construction during this period will aggravate the amount of dust in the eMalahleni area.

6.1.13. Social impacts

Description of the Environment

The construction of the water pipeline could cause an influx of people looking for job opportunities. The construction of the pipeline will also change the land use of the area.

Impact Assessment

The influx of people can increase the pressure on local services and infrastructure, incidents of STDs, HIV & AIDS and crime. The construction of the pipeline can also have positive

impacts as it has direct and indirect employment opportunities. However, these opportunities are only temporary and after the construction period, some people might find themselves once again unemployed. But taking all everything into consideration, the social impact will be positive and of medium significance.

Ref			No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
Nr.	Potential impact	Site					
12	Social Impacts	Proposed	No mitigation	Low	Regional	Short Term	Low
		Proposed	Mitigation	High	Regional	Short Term	Medium
		No-go alternative	No mitigation	Zero	Regional	Long Term	Neutral
		No-go alternative	Mitigation	Zero	Regional	Long Term	Neutral

Mitigation

- Only construction personnel should be allowed at the construction site;
- Construction workers are not allowed to enter any unauthorised properties; and
- Use local labour as far as possible.

Most of the social impacts will be positive and employment opportunities will be created. Therefore, no other mitigation measures are proposed.

Cumulative Impact

There are numerous unemployed people in the surrounding project area and there will also be an influx of people seeking job opportunities. After the construction period, this will have a cumulative effect with regards to the number of unemployed people within the area.

6.2. Environmental Impact Statement

Please see below the summary of the assessment of all the impact that were identified during the Basic Assessment.

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Table 6.1: Environmental Impact Statement

Ref Nr.	Potential Impact	Site	No mitigation/ Mitigation	Magnitude	Extend	Duration	SIGNIFICANCE
1	Disturbance of flora and fauna	Proposed	No mitigation	medium	Site specific	Short Term	Medium
		Proposed	Mitigation	Low	Site Specific	Short Term	Low
		No-go alternative	No mitigation	Zero	Site Specific	Short Term	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Short Term	Neutral
2	Sedimentation and Erosion	Proposed	No mitigation	Medium	Local	Construction	Medium
		Proposed	Mitigation	Low	Local	Construction	Low
		No-go alternative	No Mitigation	Zero	Local	Construction	Neutral
		No-go alternative	Mitigation	Zero	Local	Construction	Neutral
3	Potential pollution of water resource	Proposed	No mitigation	High	Local	Construction	High
		Proposed	Mitigation	Medium	Local	Construction	Medium
		No-go alternative	No mitigation	Zero	Local	Construction	Neutral
		No-go alternative	Mitigation	Zero	Local	Construction	Neutral
4	Spillage of hazardous substances	Proposed	No mitigation	Medium	Local	Medium Term	Medium
		Proposed	Mitigation	Low	Local	Medium Term	Low
		No-go alternative	No mitigation	Zero	Local	Medium Term	Neutral
		No-go alternative	Mitigation	Zero	Local	Medium Term	Neutral
5	Heritage Impact	Proposed	No mitigation	Low	Site Specific	Long Term	Low
		Proposed	Mitigation	Low	Site Specific	Long Term	very low
		No-go alternative	No mitigation	Zero	Site Specific	Long Term	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Long Term	Neutral
6	Risk of fire	Proposed	No mitigation	Medium	Site Specific	Construction	Medium
		Proposed	Mitigation	Low	Site Specific	Construction	Low
		No-go alternative	No mitigation	Zero	Site Specific	Construction	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Construction	Neutral
7	Security risks	Proposed	No mitigation	Medium	Site specific	Construction	Medium
		Proposed	Mitigation	Low	Site specific	Construction	Low
		No-go alternative	No mitigation	Zero	Site specific	Construction	Neutral
		No-go alternative	Mitigation	Zero	Site specific	Construction	Neutral
8	Health and Safety	Proposed	No mitigation	Medium	Site specific	Construction	Medium
		Proposed	Mitigation	Low	Site specific	Construction	Low
		No-go alternative	No mitigation	Zero	Site specific	Construction	Neutral
		No-go alternative	Mitigation	Zero	Site specific	Construction	Neutral
9	Noise pollution	Proposed	No mitigation	Low	Local	Construction	Low
		Proposed	Mitigation	Very Low	Local	Construction	Very Low
		No-go alternative	No mitigation	Zero	Site Specific	Construction	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Construction	Neutral
10	Light Pollution	Proposed	No mitigation	Low	Site Specific	Construction	Low
		Proposed	Mitigation	Very Low	Site Specific	Construction	very low
		No-go alternative	No mitigation	Zero	Site Specific	Construction	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Construction	Neutral
11	Visual Impact	Proposed	No mitigation	Low	Site Specific	Construction	Low
		Proposed	Mitigation	Very Low	Site Specific	Construction	very low
		No-go alternative	No mitigation	Zero	Site Specific	Construction	Neutral
		No-go alternative	Mitigation	Zero	Site Specific	Construction	Neutral
12	Dust pollution	Proposed	No mitigation	Medium	Local	Construction	Low
		Proposed	Mitigation	Low	Local	Construction	very low
		No-go alternative	No mitigation	Zero	Regional	Construction	Neutral
		No-go alternative	Mitigation	Zero	Regional	Construction	Neutral
13	Social Impacts	Proposed	No mitigation	Low	Regional	Construction	Low
		No-go alternative	Mitigation	Medium	Regional	Construction	Medium (+)
		Proposed	No mitigation	Zero	Regional	Construction	Neutral
		No-go alternative	Mitigation	Zero	Regional	Construction	Neutral

7. CONCLUSIONS AND WAY FORWARD

Based on the above, the EAP is of the opinion that the revised alignment of the proposed bulk water supply pipeline should be authorised, as the benefits outweigh the negative environmental impacts when the recommended mitigation measures are implemented. It is furthermore important to consider that the water pipeline has already been authorised and that this application only intends to change the alignment of the pipeline. Thus, it is not the principle of the water pipeline that is in question: it is already accepted that a water pipeline from the EWRP must supply water to the proposed Khanyisa Power Station. It is only the alignment of the pipeline that is in question.

The significance of negative impacts can be reduced with effective and appropriate mitigation through the accompanying EMP. If authorised, the implementation of an EMP should be included as a condition of authorisation.

8. REFERENCES

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